

CHAPTER

21

**AIR
CONDITIONING**



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1 thru 9	SEP 05/2017		127	May 05/2015		163	May 05/2015	
10	BLANK		128	May 05/2015		164	May 05/2015	
21-HOW TO USE THE FIM			129	May 05/2015		165	May 05/2015	
1	Jan 05/2013		130	May 05/2015		166	May 05/2015	
2	Jan 05/2013		131	May 05/2015		167	May 05/2015	
3	Jan 05/2017		132	May 05/2015		168	May 05/2015	
4	Jan 05/2013		133	May 05/2015		169	May 05/2015	
5	Jan 05/2013		134	May 05/2015		170	May 05/2015	
6	Jan 05/2013		135	May 05/2015		171	May 05/2015	
21-FAULT CODE INDEX			136	May 05/2015		172	BLANK	
101	Jan 05/2013		137	May 05/2015		21-MAINT MSG INDEX		
102	May 05/2015		138	May 05/2015		101	Jan 05/2014	
103	May 05/2015		139	May 05/2015		102	Jan 05/2014	
104	May 05/2015		140	May 05/2015		103	Jan 05/2014	
105	May 05/2015		141	May 05/2015		104	May 05/2016	
106	May 05/2015		142	May 05/2015		105	May 05/2016	
107	May 05/2015		143	May 05/2015		106	May 05/2016	
108	May 05/2015		144	May 05/2015		107	May 05/2016	
109	May 05/2015		145	May 05/2015		108	Sep 05/2016	
110	May 05/2015		146	May 05/2015		109	Sep 05/2016	
111	May 05/2015		147	May 05/2015		110	Sep 05/2016	
112	May 05/2015		148	May 05/2015		111	Sep 05/2016	
113	May 05/2015		149	May 05/2015		112	Sep 05/2016	
114	May 05/2015		150	May 05/2015		113	Jan 05/2017	
115	May 05/2015		151	May 05/2015		114	Jan 05/2017	
116	May 05/2015		152	May 05/2015		115	Jan 05/2017	
117	May 05/2015		153	May 05/2015		116	Jan 05/2017	
118	May 05/2015		154	May 05/2015		R 117	Sep 05/2017	
119	May 05/2015		155	May 05/2015		O 118	Sep 05/2017	
120	May 05/2015		156	May 05/2015		O 119	Sep 05/2017	
121	May 05/2015		157	May 05/2015		O 120	Sep 05/2017	
122	May 05/2015		158	May 05/2015		O 121	Sep 05/2017	
123	May 05/2015		159	May 05/2015		O 122	Sep 05/2017	
124	May 05/2015		160	May 05/2015		O 123	Sep 05/2017	
125	May 05/2015		161	May 05/2015		124	BLANK	
126	May 05/2015		162	May 05/2015				

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21-00 TASKS			21-22 TASKS			21-25 TASKS (cont)		
201	Jan 05/2013		201	Jan 05/2013		R 231	Sep 05/2017	
202	Jan 05/2013		202	Jan 05/2014		O 232	Sep 05/2017	
203	Jan 05/2013		21-23 TASKS			O 233	Sep 05/2017	
204	Sep 05/2016		201	Jan 05/2013		O 234	Sep 05/2017	
205	Sep 05/2016		202	BLANK		O 235	Sep 05/2017	
206	Sep 05/2016		21-25 TASKS			O 236	Sep 05/2017	
207	Sep 05/2016		201	Jan 05/2013		O 237	Sep 05/2017	
208	Sep 05/2016		202	Jan 05/2013		O 238	Sep 05/2017	
209	Sep 05/2016		203	Jan 05/2013		O 239	Sep 05/2017	
210	Sep 05/2016		204	Jan 05/2013		240	BLANK	
211	Sep 05/2016		205	Sep 05/2016		21-25 TASK SUPPORT		
212	Sep 05/2016		206	Sep 05/2016		301	Jan 05/2013	
O 213	Sep 05/2017		207	Sep 05/2016		302	BLANK	
O 214	Sep 05/2017		208	Sep 05/2016		21-26 TASKS		
O 215	Sep 05/2017		209	Sep 05/2016		201	Jan 05/2013	
O 216	Sep 05/2017		210	Sep 05/2016		202	Jan 05/2013	
O 217	Sep 05/2017		211	Sep 05/2016		203	Jan 05/2013	
218	Sep 05/2016		212	Sep 05/2016		204	Jan 05/2013	
O 219	Sep 05/2017		213	May 05/2013		205	Sep 05/2013	
O 220	Sep 05/2017		O 214	Sep 05/2017		206	Jan 05/2016	
O 221	Sep 05/2017		O 215	Sep 05/2017		207	Jan 05/2016	
O 222	Sep 05/2017		O 216	Sep 05/2017		208	Jan 05/2016	
O 223	Sep 05/2017		O 217	Sep 05/2017		209	Sep 05/2016	
O 224	Sep 05/2017		218	Sep 05/2016		210	Sep 05/2016	
O 225	Sep 05/2017		219	Sep 05/2016		211	Sep 05/2016	
O 226	Sep 05/2017		220	Sep 05/2016		212	Sep 05/2016	
O 227	Sep 05/2017		221	Sep 05/2016		213	May 05/2017	
O 228	Sep 05/2017		222	Sep 05/2016		214	May 05/2017	
O 229	Sep 05/2017		223	Sep 05/2016		O 215	Sep 05/2017	
O 230	Sep 05/2017		224	Sep 05/2016		O 216	Sep 05/2017	
21-00 TASK SUPPORT			225	Sep 05/2016		O 217	Sep 05/2017	
301	Jan 05/2013		R 226	Sep 05/2017		O 218	Sep 05/2017	
302	BLANK		O 227	Sep 05/2017		O 219	Sep 05/2017	
21-20 TASKS			R 228	Sep 05/2017		O 220	Sep 05/2017	
201	Jan 05/2013		R 229	Sep 05/2017		O 221	Sep 05/2017	
202	BLANK		R 230	Sep 05/2017		O 222	Sep 05/2017	

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21-26 TASKS (cont)			21-27 TASKS (cont)			21-27 TASKS (cont)		
O 223	Sep 05/2017		225	Sep 05/2016		261	Sep 05/2016	
O 224	Sep 05/2017		226	Sep 05/2016		262	Sep 05/2016	
O 225	Sep 05/2017		227	Sep 05/2016		263	Sep 05/2016	
O 226	Sep 05/2017		228	Sep 05/2016		264	Sep 05/2016	
227	May 05/2017		229	Sep 05/2016		265	Sep 05/2016	
228	May 05/2017		230	Sep 05/2016		266	Sep 05/2016	
229	May 05/2017		231	Sep 05/2016		267	Sep 05/2016	
230	May 05/2017		232	Sep 05/2016		268	Sep 05/2016	
21-26 TASK SUPPORT			233	Sep 05/2016		269	Sep 05/2016	
301	Jan 05/2013		234	Sep 05/2016		270	Sep 05/2016	
302	BLANK		235	Sep 05/2016		271	Sep 05/2016	
21-27 TASKS			236	Sep 05/2016		272	Sep 05/2016	
201	Jan 05/2013		237	Sep 05/2016		273	Sep 05/2016	
202	Jan 05/2013		238	Sep 05/2016		274	Sep 05/2016	
203	Jan 05/2013		239	Sep 05/2016		275	Sep 05/2016	
204	Jan 05/2013		240	Sep 05/2016		276	Sep 05/2016	
205	Jan 05/2013		241	Sep 05/2016		277	Sep 05/2016	
206	Jan 05/2013		242	Sep 05/2016		278	Sep 05/2016	
207	Sep 05/2016		243	Sep 05/2016		279	Sep 05/2016	
O 208	Sep 05/2017		244	Sep 05/2016		280	Sep 05/2016	
209	Sep 05/2016		245	Sep 05/2016		281	Sep 05/2016	
210	Sep 05/2016		246	Sep 05/2016		282	Sep 05/2016	
211	Sep 05/2016		247	Sep 05/2016		283	Sep 05/2016	
212	Sep 05/2016		248	Sep 05/2016		284	Sep 05/2016	
213	Sep 05/2016		249	Sep 05/2016		285	Sep 05/2016	
214	Sep 05/2016		250	Sep 05/2016		286	Sep 05/2016	
215	Sep 05/2016		251	Sep 05/2016		287	Sep 05/2016	
216	Sep 05/2016		252	Sep 05/2016		288	Sep 05/2016	
217	Sep 05/2016		253	Sep 05/2016		289	Sep 05/2016	
218	Sep 05/2016		254	Sep 05/2016		290	Sep 05/2016	
219	Sep 05/2016		255	Sep 05/2016		R 291	Sep 05/2017	
220	Sep 05/2016		256	Sep 05/2016		O 292	Sep 05/2017	
221	Sep 05/2016		257	Sep 05/2016		O 293	Sep 05/2017	
222	Sep 05/2016		258	Sep 05/2016		294	Sep 05/2016	
223	Sep 05/2016		259	Sep 05/2016		295	Sep 05/2016	
224	Sep 05/2016		260	Sep 05/2016		296	Sep 05/2016	

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21-27 TASKS (cont)			21-27 TASK SUPPORT			21-31 TASKS (cont)		
297	Sep 05/2016		301	Jan 05/2013		O 226	Sep 05/2017	
R 298	Sep 05/2017		302	BLANK		O 227	Sep 05/2017	
O 298.1	Sep 05/2017		21-28 TASKS			R 228	Sep 05/2017	
O 298.2	Sep 05/2017		201	Jan 05/2013		R 229	Sep 05/2017	
R 298.3	Sep 05/2017		202	Jan 05/2013		O 230	Sep 05/2017	
O 298.4	Sep 05/2017		203	Sep 05/2013		O 231	Sep 05/2017	
O 298.5	Sep 05/2017		204	Sep 05/2013		O 232	Sep 05/2017	
O 298.6	Sep 05/2017		21-29 TASKS			O 233	Sep 05/2017	
298.7	Sep 05/2016		201	Jan 05/2013		O 234	Sep 05/2017	
298.8	Sep 05/2016		202	BLANK		O 235	Sep 05/2017	
298.9	Sep 05/2016		21-31 TASKS			O 236	Sep 05/2017	
298.10	Sep 05/2016		201	Sep 05/2013		O 237	Sep 05/2017	
298.11	Sep 05/2016		202	Sep 05/2013		O 238	Sep 05/2017	
R 298.12	Sep 05/2017		203	Sep 05/2013		O 239	Sep 05/2017	
R 298.13	Sep 05/2017		204	Sep 05/2013		R 240	Sep 05/2017	
298.14	Sep 05/2016		205	Jan 05/2017		O 241	Sep 05/2017	
R 298.15	Sep 05/2017		206	Jan 05/2017		O 242	Sep 05/2017	
O 298.16	Sep 05/2017		207	Jan 05/2017		O 243	Sep 05/2017	
R 298.17	Sep 05/2017		208	Jan 05/2017		R 244	Sep 05/2017	
O 298.18	Sep 05/2017		R 209	Sep 05/2017		O 245	Sep 05/2017	
O 298.19	Sep 05/2017		O 210	Sep 05/2017		O 246	Sep 05/2017	
O 298.20	Sep 05/2017		O 211	Sep 05/2017		21-41 TASKS		
O 298.21	Sep 05/2017		O 212	Sep 05/2017		201	Jan 05/2013	
O 298.22	Sep 05/2017		O 213	Sep 05/2017		R 202	Sep 05/2017	
O 298.23	Sep 05/2017		O 214	Sep 05/2017		O 203	Sep 05/2017	
O 298.24	Sep 05/2017		O 215	Sep 05/2017		O 204	Sep 05/2017	
O 298.25	Sep 05/2017		O 216	Sep 05/2017		R 205	Sep 05/2017	
O 298.26	Sep 05/2017		O 217	Sep 05/2017		O 206	Sep 05/2017	
O 298.27	Sep 05/2017		O 218	Sep 05/2017		R 207	Sep 05/2017	
O 298.28	Sep 05/2017		O 219	Sep 05/2017		R 208	Sep 05/2017	
O 298.29	Sep 05/2017		O 220	Sep 05/2017		O 209	Sep 05/2017	
O 298.30	Sep 05/2017		O 221	Sep 05/2017		O 210	Sep 05/2017	
O 298.31	Sep 05/2017		O 222	Sep 05/2017		21-43 TASKS		
O 298.32	Sep 05/2017		O 223	Sep 05/2017		201	Sep 05/2016	
A 298.33	Sep 05/2017		O 224	Sep 05/2017		202	Jan 05/2015	
A 298.34	BLANK		O 225	Sep 05/2017		203	Jan 05/2015	

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204	Jan 05/2015		206	Jan 05/2013		R 242	Sep 05/2017	
205	Jan 05/2015		207	Jan 05/2013		R 243	Sep 05/2017	
206	BLANK		O 208	Sep 05/2017		O 244	Sep 05/2017	
21-44 TASKS			O 209	Sep 05/2017		R 245	Sep 05/2017	
201	Jan 05/2013		210	Jan 05/2013		O 246	Sep 05/2017	
202	Sep 05/2013		211	Jan 05/2013		O 247	Sep 05/2017	
203	Sep 05/2016		212	Sep 05/2016		R 248	Sep 05/2017	
204	Sep 05/2016		213	Sep 05/2016		R 249	Sep 05/2017	
205	Sep 05/2016		214	Sep 05/2016		O 250	Sep 05/2017	
206	Sep 05/2016		215	Sep 05/2016		R 251	Sep 05/2017	
207	Sep 05/2016		R 216	Sep 05/2017		R 252	Sep 05/2017	
208	Sep 05/2016		O 217	Sep 05/2017		O 253	Sep 05/2017	
209	Sep 05/2016		R 218	Sep 05/2017		O 254	Sep 05/2017	
210	Sep 05/2016		O 219	Sep 05/2017		R 255	Sep 05/2017	
211	Sep 05/2016		O 220	Sep 05/2017		R 256	Sep 05/2017	
212	Sep 05/2016		R 221	Sep 05/2017		O 257	Sep 05/2017	
213	Sep 05/2016		O 222	Sep 05/2017		O 258	Sep 05/2017	
214	Sep 05/2016		O 223	Sep 05/2017		A 259	Sep 05/2017	
215	Sep 05/2016		R 224	Sep 05/2017		A 260	BLANK	
R 216	Sep 05/2017		O 225	Sep 05/2017		21-51 TASKS		
217	Sep 05/2016		O 226	Sep 05/2017		201	Jan 05/2013	
218	Sep 05/2016		O 227	Sep 05/2017		202	Jan 05/2013	
219	Sep 05/2016		O 228	Sep 05/2017		203	Jan 05/2014	
220	Sep 05/2016		O 229	Sep 05/2017		204	Jan 05/2014	
221	Sep 05/2016		O 230	Sep 05/2017		205	Jan 05/2014	
222	Sep 05/2016		O 231	Sep 05/2017		206	Sep 05/2016	
223	Sep 05/2016		O 232	Sep 05/2017		207	Sep 05/2016	
224	Sep 05/2016		O 233	Sep 05/2017		208	Sep 05/2016	
225	Sep 05/2016		O 234	Sep 05/2017		209	Sep 05/2016	
226	BLANK		O 235	Sep 05/2017		210	Sep 05/2016	
21-45 TASKS			O 236	Sep 05/2017		211	Sep 05/2016	
201	Jan 05/2013		O 237	Sep 05/2017		212	Sep 05/2016	
202	Jan 05/2013		O 238	Sep 05/2017		213	Sep 05/2016	
O 203	Sep 05/2017		O 239	Sep 05/2017		214	Sep 05/2016	
O 204	Sep 05/2017		O 240	Sep 05/2017		O 215	Sep 05/2017	
205	Jan 05/2013		O 241	Sep 05/2017		O 216	Sep 05/2017	

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O 217	Sep 05/2017		O 253	Sep 05/2017		201	Jan 05/2013	
O 218	Sep 05/2017		O 254	Sep 05/2017		202	Jan 05/2013	
O 219	Sep 05/2017		O 255	Sep 05/2017		203	Jan 05/2013	
O 220	Sep 05/2017		O 256	Sep 05/2017		204	Jan 05/2013	
O 221	Sep 05/2017		O 257	Sep 05/2017		205	Jan 05/2013	
O 222	Sep 05/2017		O 258	Sep 05/2017		206	Jan 05/2013	
O 223	Sep 05/2017		O 259	Sep 05/2017		207	Jan 05/2013	
O 224	Sep 05/2017		O 260	Sep 05/2017		208	Jan 05/2013	
O 225	Sep 05/2017		O 261	Sep 05/2017		209	Sep 05/2016	
O 226	Sep 05/2017		O 262	Sep 05/2017		210	Sep 05/2016	
O 227	Sep 05/2017		O 263	Sep 05/2017		211	Sep 05/2016	
O 228	Sep 05/2017		O 264	Sep 05/2017		212	Sep 05/2016	
O 229	Sep 05/2017		O 265	Sep 05/2017		213	Sep 05/2016	
O 230	Sep 05/2017		O 266	Sep 05/2017		214	Sep 05/2016	
O 231	Sep 05/2017		O 267	Sep 05/2017		215	Sep 05/2016	
O 232	Sep 05/2017		O 268	Sep 05/2017		216	Sep 05/2016	
O 233	Sep 05/2017		O 269	Sep 05/2017		217	Sep 05/2016	
O 234	Sep 05/2017		O 270	Sep 05/2017		R 218	Sep 05/2017	
O 235	Sep 05/2017		O 271	Sep 05/2017		R 219	Sep 05/2017	
O 236	Sep 05/2017		O 272	Sep 05/2017		O 220	Sep 05/2017	
O 237	Sep 05/2017		O 273	Sep 05/2017		O 221	Sep 05/2017	
O 238	Sep 05/2017		O 274	Sep 05/2017		O 222	Sep 05/2017	
O 239	Sep 05/2017		O 275	Sep 05/2017		O 223	Sep 05/2017	
O 240	Sep 05/2017		O 276	Sep 05/2017		O 224	Sep 05/2017	
O 241	Sep 05/2017		O 277	Sep 05/2017		O 225	Sep 05/2017	
O 242	Sep 05/2017		O 278	Sep 05/2017		O 226	Sep 05/2017	
O 243	Sep 05/2017		O 279	Sep 05/2017		O 227	Sep 05/2017	
O 244	Sep 05/2017		O 280	Sep 05/2017		O 228	Sep 05/2017	
O 245	Sep 05/2017		O 281	Sep 05/2017		O 229	Sep 05/2017	
O 246	Sep 05/2017		O 282	Sep 05/2017		O 230	Sep 05/2017	
O 247	Sep 05/2017		O 283	Sep 05/2017		O 231	Sep 05/2017	
O 248	Sep 05/2017		O 284	Sep 05/2017		O 232	Sep 05/2017	
O 249	Sep 05/2017		O 285	Sep 05/2017		O 233	Sep 05/2017	
O 250	Sep 05/2017		O 286	Sep 05/2017		O 234	Sep 05/2017	
O 251	Sep 05/2017		O 287	Sep 05/2017		O 235	Sep 05/2017	
O 252	Sep 05/2017		O 288	Sep 05/2017		O 236	Sep 05/2017	

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21-52 TASKS (cont)			21-52 TASKS (cont)			21-61 TASKS (cont)		
O 237	Sep 05/2017		O 273	Sep 05/2017		220	Jan 05/2013	
O 238	Sep 05/2017		O 274	Sep 05/2017		221	Jan 05/2013	
O 239	Sep 05/2017		O 275	Sep 05/2017		222	Sep 05/2016	
O 240	Sep 05/2017		O 276	Sep 05/2017		223	Sep 05/2016	
O 241	Sep 05/2017		O 277	Sep 05/2017		224	Sep 05/2016	
O 242	Sep 05/2017		O 278	Sep 05/2017		225	Sep 05/2016	
O 243	Sep 05/2017		O 279	Sep 05/2017		226	Sep 05/2016	
O 244	Sep 05/2017		O 280	Sep 05/2017		227	Sep 05/2016	
O 245	Sep 05/2017		O 281	Sep 05/2017		228	Sep 05/2016	
O 246	Sep 05/2017		O 282	Sep 05/2017		229	Sep 05/2016	
O 247	Sep 05/2017		O 283	Sep 05/2017		230	Sep 05/2016	
O 248	Sep 05/2017		O 284	Sep 05/2017		231	Sep 05/2016	
O 249	Sep 05/2017		O 285	Sep 05/2017		232	Sep 05/2016	
O 250	Sep 05/2017		O 286	Sep 05/2017		233	Sep 05/2016	
O 251	Sep 05/2017		A 287	Sep 05/2017		234	Sep 05/2016	
O 252	Sep 05/2017		A 288	BLANK		235	Sep 05/2016	
O 253	Sep 05/2017		21-61 TASKS			236	Sep 05/2016	
O 254	Sep 05/2017		201	Sep 05/2016		237	Sep 05/2016	
O 255	Sep 05/2017		202	Sep 05/2016		238	Sep 05/2016	
O 256	Sep 05/2017		203	Sep 05/2016		239	Sep 05/2016	
O 257	Sep 05/2017		204	Sep 05/2016		240	Sep 05/2016	
O 258	Sep 05/2017		205	Sep 05/2016		241	Sep 05/2016	
O 259	Sep 05/2017		206	Sep 05/2016		242	Jan 05/2013	
O 260	Sep 05/2017		207	Sep 05/2016		243	Jan 05/2013	
O 261	Sep 05/2017		208	Jan 05/2013		244	Jan 05/2013	
O 262	Sep 05/2017		209	Jan 05/2013		245	Jan 05/2013	
O 263	Sep 05/2017		210	Jan 05/2013		246	Jan 05/2013	
O 264	Sep 05/2017		211	Jan 05/2013		247	Jan 05/2013	
R 265	Sep 05/2017		212	Jan 05/2013		248	Jan 05/2013	
R 266	Sep 05/2017		213	Jan 05/2013		249	Jan 05/2013	
O 267	Sep 05/2017		214	Jan 05/2013		250	Jan 05/2013	
O 268	Sep 05/2017		215	Jan 05/2013		251	Jan 05/2013	
O 269	Sep 05/2017		216	Jan 05/2013		252	Jan 05/2013	
O 270	Sep 05/2017		217	Jan 05/2013		253	Jan 05/2013	
O 271	Sep 05/2017		218	Jan 05/2013		254	Jan 05/2013	
O 272	Sep 05/2017		219	Jan 05/2013		255	Jan 05/2013	

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257	Sep 05/2016		O 293	Sep 05/2017		O 298.31	Sep 05/2017	
O 258	Sep 05/2017		O 294	Sep 05/2017		O 298.32	Sep 05/2017	
O 259	Sep 05/2017		O 295	Sep 05/2017		O 298.33	Sep 05/2017	
O 260	Sep 05/2017		O 296	Sep 05/2017		O 298.34	Sep 05/2017	
O 261	Sep 05/2017		O 297	Sep 05/2017		O 298.35	Sep 05/2017	
O 262	Sep 05/2017		O 298	Sep 05/2017		O 298.36	Sep 05/2017	
O 263	Sep 05/2017		O 298.1	Sep 05/2017		O 298.37	Sep 05/2017	
O 264	Sep 05/2017		O 298.2	Sep 05/2017		O 298.38	Sep 05/2017	
O 265	Sep 05/2017		O 298.3	Sep 05/2017		O 298.39	Sep 05/2017	
O 266	Sep 05/2017		O 298.4	Sep 05/2017		O 298.40	Sep 05/2017	
O 267	Sep 05/2017		O 298.5	Sep 05/2017		O 298.41	Sep 05/2017	
O 268	Sep 05/2017		O 298.6	Sep 05/2017		O 298.42	Sep 05/2017	
O 269	Sep 05/2017		O 298.7	Sep 05/2017		O 298.43	Sep 05/2017	
O 270	Sep 05/2017		O 298.8	Sep 05/2017		O 298.44	Sep 05/2017	
O 271	Sep 05/2017		O 298.9	Sep 05/2017		O 298.45	Sep 05/2017	
O 272	Sep 05/2017		O 298.10	Sep 05/2017		O 298.46	Sep 05/2017	
O 273	Sep 05/2017		O 298.11	Sep 05/2017		O 298.47	Sep 05/2017	
O 274	Sep 05/2017		O 298.12	Sep 05/2017		O 298.48	Sep 05/2017	
O 275	Sep 05/2017		O 298.13	Sep 05/2017		O 298.49	Sep 05/2017	
O 276	Sep 05/2017		O 298.14	Sep 05/2017		O 298.50	Sep 05/2017	
O 277	Sep 05/2017		O 298.15	Sep 05/2017		O 298.51	Sep 05/2017	
O 278	Sep 05/2017		O 298.16	Sep 05/2017		O 298.52	Sep 05/2017	
O 279	Sep 05/2017		O 298.17	Sep 05/2017		O 298.53	Sep 05/2017	
O 280	Sep 05/2017		O 298.18	Sep 05/2017		O 298.54	Sep 05/2017	
O 281	Sep 05/2017		O 298.19	Sep 05/2017		O 298.55	Sep 05/2017	
O 282	Sep 05/2017		O 298.20	Sep 05/2017		O 298.56	BLANK	
O 283	Sep 05/2017		O 298.21	Sep 05/2017		D 298.57	Sep 5/2017	
O 284	Sep 05/2017		O 298.22	Sep 05/2017		D 298.58	BLANK	
O 285	Sep 05/2017		O 298.23	Sep 05/2017		21-62 TASKS		
O 286	Sep 05/2017		O 298.24	Sep 05/2017		201	Jan 05/2013	
O 287	Sep 05/2017		O 298.25	Sep 05/2017		202	Jan 05/2013	
O 288	Sep 05/2017		O 298.26	Sep 05/2017		203	Sep 05/2013	
O 289	Sep 05/2017		O 298.27	Sep 05/2017		204	May 05/2016	
O 290	Sep 05/2017		O 298.28	Sep 05/2017		205	May 05/2016	
O 291	Sep 05/2017		O 298.29	Sep 05/2017		206	May 05/2016	

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

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**CHAPTER 21
AIR CONDITIONING**

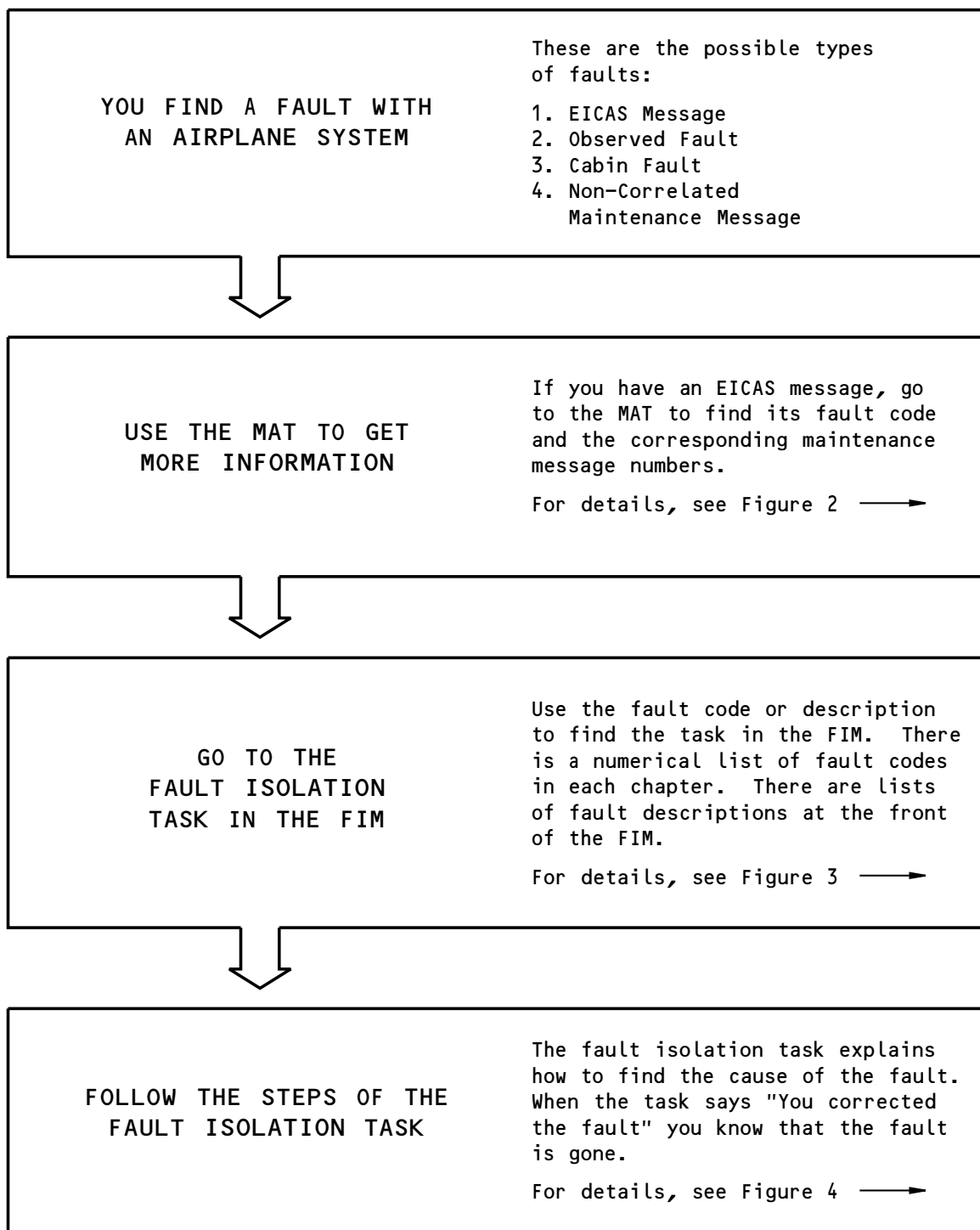
Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
21-62 TASKS (cont)								
207	May 05/2016							
208	Sep 05/2016							
209	Sep 05/2016							
210	Sep 05/2016							
211	Sep 05/2016							
212	May 05/2016							
213	May 05/2016							
214	May 05/2016							
215	May 05/2016							
216	BLANK							
21-98 TASKS								
201	Jan 05/2013							
202	BLANK							

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

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E84424 S0000132469_V1

Basic Fault Isolation Process
Figure 1

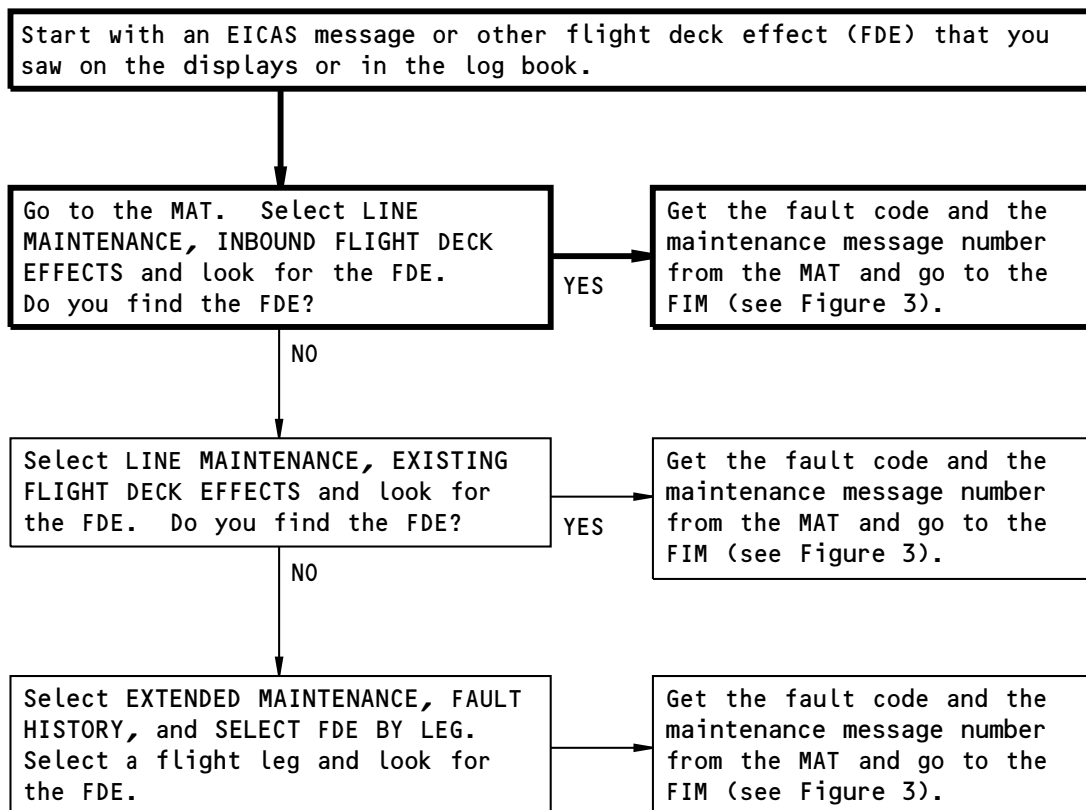
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NOTE: The bold lines show the most common path.

E84425 S0000132475_V1

Getting Fault Information from the MAT
Figure 2

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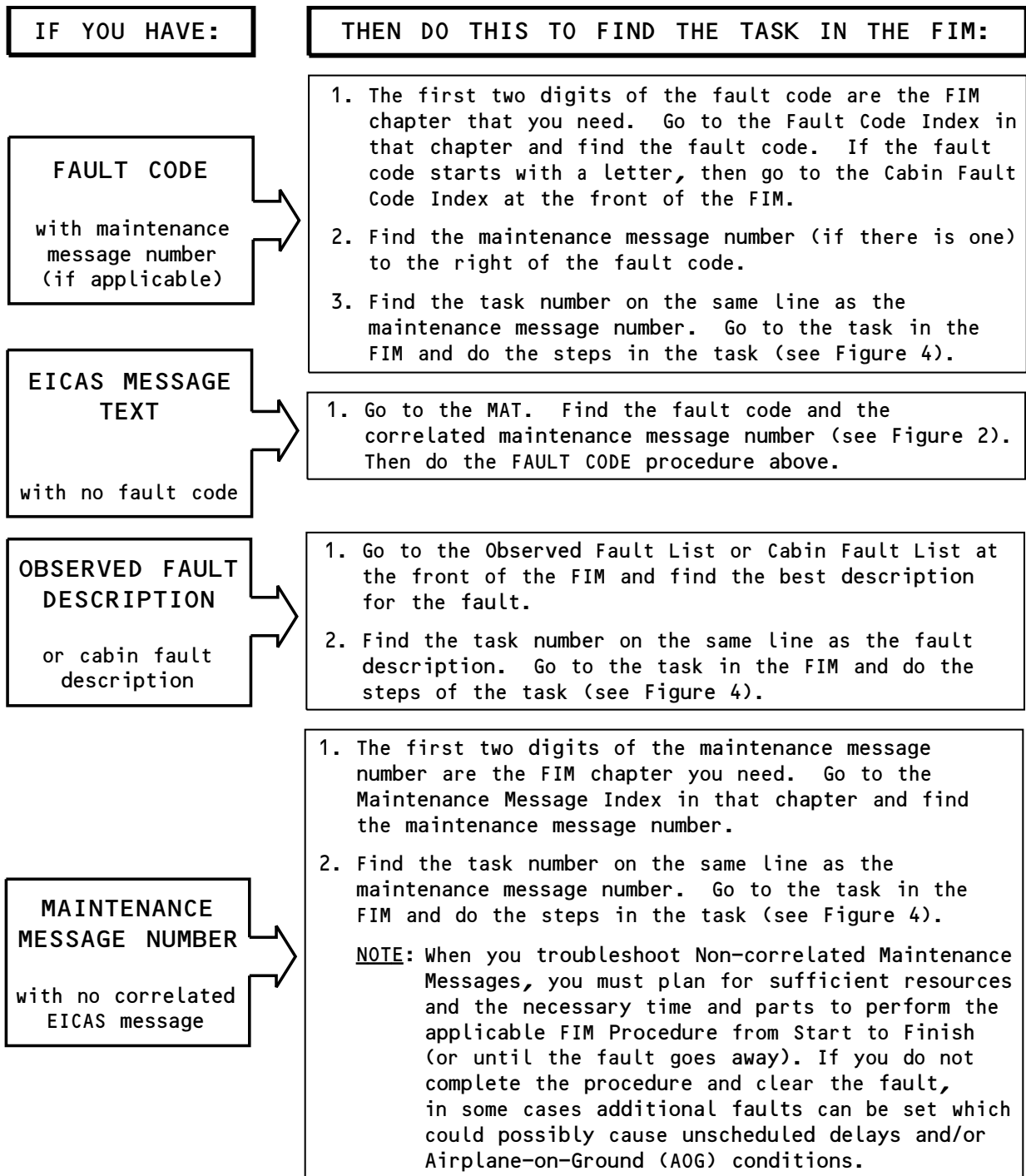
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E84427 S0000132476_V2

Finding the Fault Isolation Task in the FIM
Figure 3

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ASSUMED CONDITIONS AT START OF TASK

- External electrical power is ON
- Hydraulic power and pneumatic power are OFF
- Engines are shut down
- No equipment in the system is deactivated

INITIAL EVALUATION PARAGRAPH

- The Initial Evaluation paragraph at the start of the task helps you determine whether you can detect the fault right now.
- If you cannot detect the fault right now, then the task cannot isolate the fault and the Initial Evaluation paragraph will say that there was an intermittent fault.
- If you have an intermittent fault, you must use your judgement (and follow your airline's policy) to decide which components to replace. Then monitor the airplane to see if the fault happens again on subsequent flights.

FAULT ISOLATION STEPS

- The FIM task steps are presented in a specified order. "The If... then" statements will guide you along a logical path. But if you do not plan to follow the FIM task exactly, make sure that you read it before you start to isolate the fault. Some FIM procedures start with important steps that have an effect on the other steps in the procedure.
- When you are at the endpoint of the path, the step says "You corrected the fault." Complete the step and exit the procedure.
- The Recommended Maintenance Action that shows on the MAT for the maintenance message gives a list of possible causes in order by probability of failure. In the FIM procedure, the possible causes can be in a different order from the MAT.

WIRING CHECKS

When a step says "Do a wiring check", do these three types of electrical checks for the specified contacts (pins):

- continuity from contact to contact
- shorts between the contacts
- shorts from each contact to ground

E84428 S0000132477_V3

Doing the Fault Isolation Task
Figure 4

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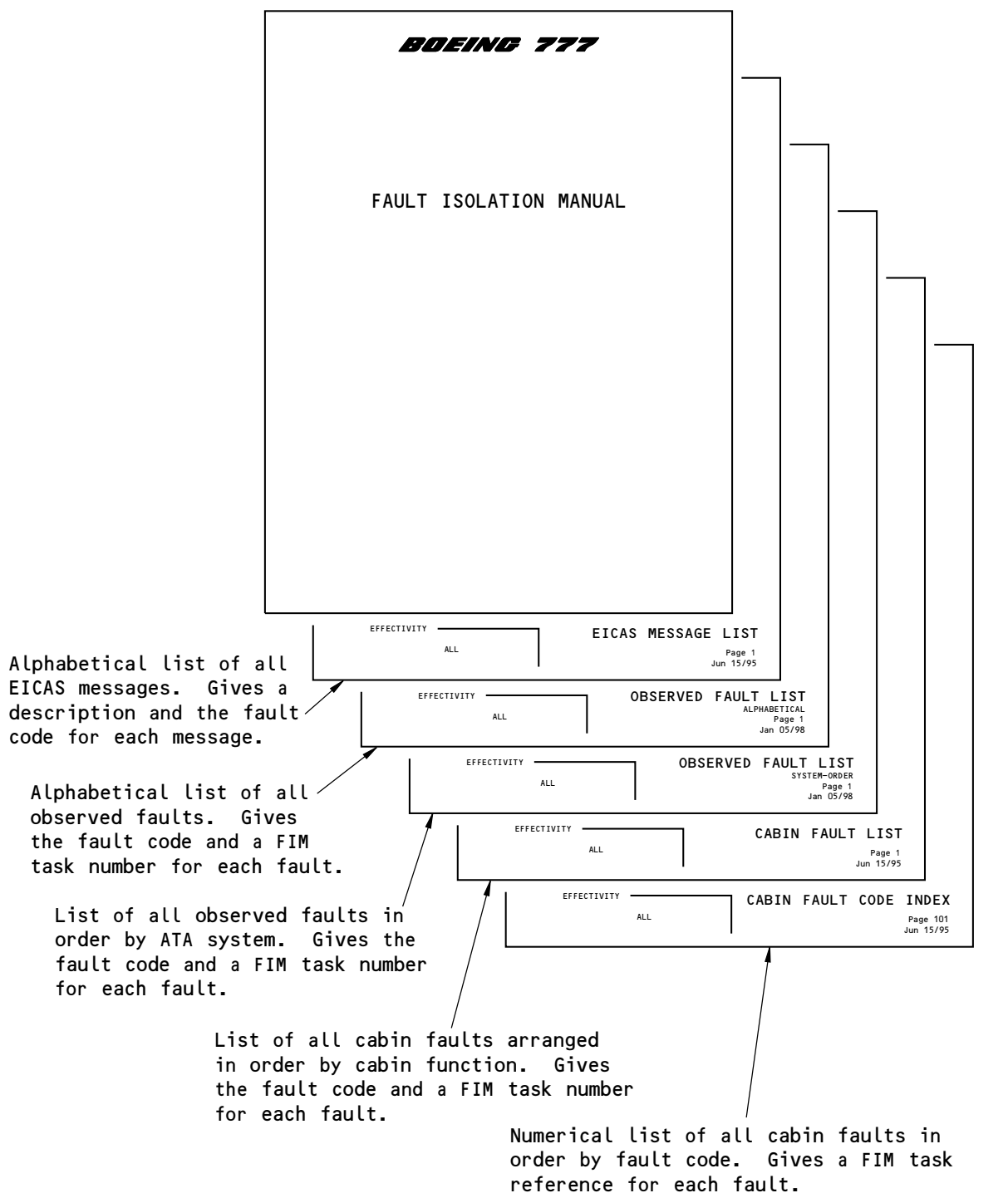
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F39750 S0000132478_V1

Subjects at Front of FIM
Figure 5

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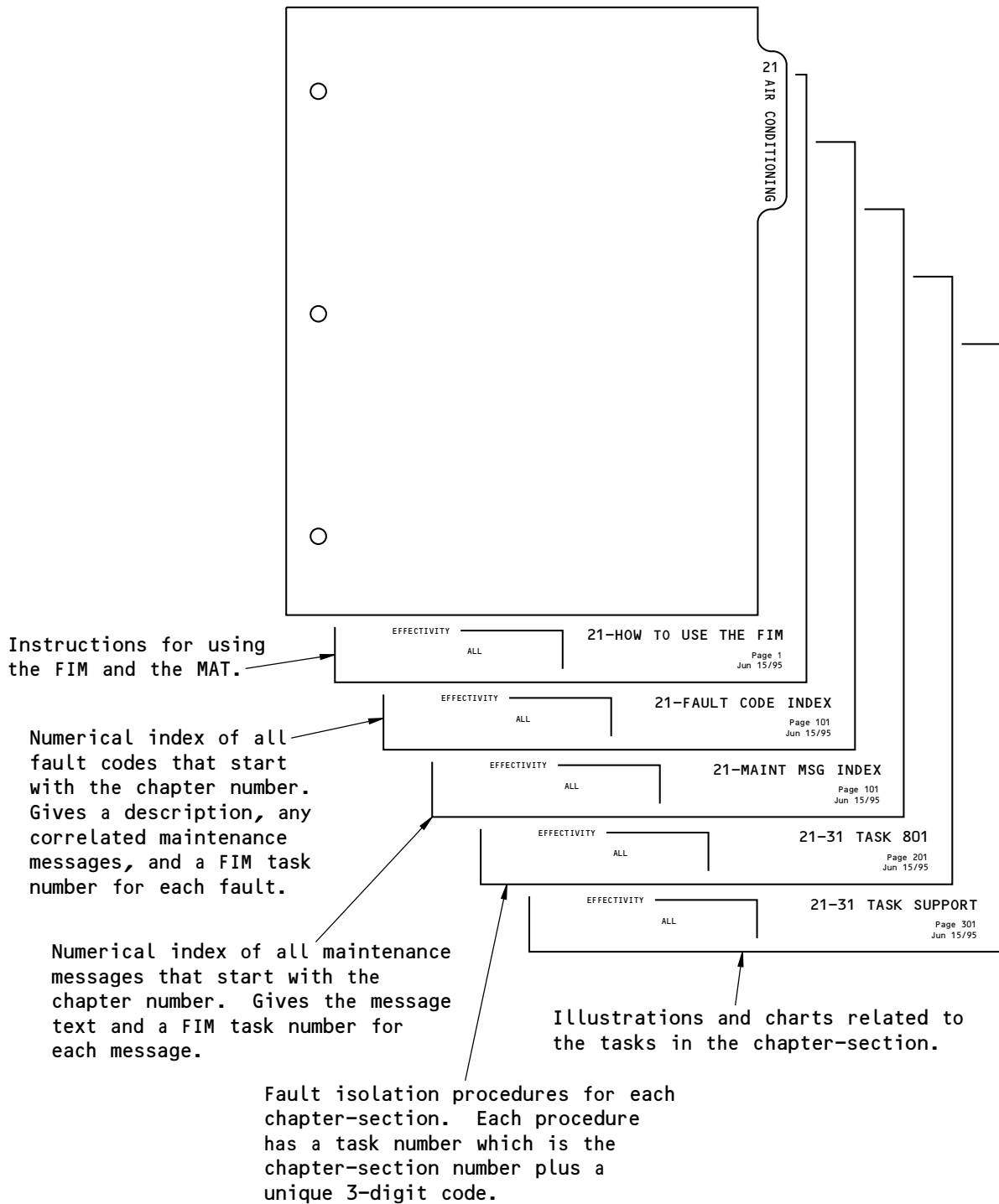
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F39837 S0000132479_V1

Subjects in Each FIM Chapter
Figure 6

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
210 001 41	ECS CARD L (EICAS STATUS)	21-12011	21-44 TASK 801
		21-14041	21-27 TASK 802
		21-14051	21-27 TASK 801
		21-14061	21-27 TASK 801
		21-18891	21-00 TASK 806
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		31-14051	31-09 TASK 821
		31-14052	31-09 TASK 822
		31-14055	31-09 TASK 825
		31-14057	31-09 TASK 827
		31-17438	31-09 TASK 836
		31-17640	31-10 TASK 815
		31-17933	31-07 TASK 823
		31-17935	31-07 TASK 825
		31-18801	31-08 TASK 810
		31-18803	31-08 TASK 812
		31-18841	31-08 TASK 814
		31-18863	31-08 TASK 816
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69491	31-42 TASK 851
		31-69492	31-42 TASK 851
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69691	31-42 TASK 878
		31-69692	31-42 TASK 878

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
210 001 41	ECS CARD L (EICAS STATUS)	(continued) NONE	31-09 TASK 838
210 001 42	ECS CARD R (EICAS STATUS)	21-12012 21-12013 21-14042 21-14052 21-14062 21-18892 23-81004 23-81006 31-14053 31-14054 31-14056 31-14058 31-17437 31-17639 31-17934 31-17936 31-18802 31-18804 31-18842 31-18864 31-54013 31-54014 31-54121 31-54122 31-58013 31-58014 31-58121 31-58122 31-69401 31-69402 31-69493 31-69494 31-69601 31-69602	21-44 TASK 808 21-43 TASK 803 21-27 TASK 819 21-27 TASK 818 21-27 TASK 818 21-00 TASK 804 23-91 TASK 804 23-91 TASK 806 31-09 TASK 823 31-09 TASK 824 31-09 TASK 826 31-09 TASK 827 31-09 TASK 835 31-10 TASK 814 31-07 TASK 824 31-07 TASK 826 31-08 TASK 811 31-08 TASK 813 31-08 TASK 814 31-08 TASK 817 31-43 TASK 868 31-43 TASK 869 31-41 TASK 838 31-41 TASK 839 31-43 TASK 872 31-43 TASK 873 31-41 TASK 856 31-41 TASK 857 31-42 TASK 825 31-42 TASK 825 31-42 TASK 851 31-42 TASK 851 31-42 TASK 857 31-42 TASK 857

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
210 001 42	ECS CARD R (EICAS STATUS)	(continued) 31-69693 31-69694 NONE	31-42 TASK 878 31-42 TASK 878 31-09 TASK 841
210 611 00	Air synoptic: duct pressure indication problem.		21-00 TASK 807
210 671 00	Smoke or fumes in cabin: Source unknown.		21-00 TASK 808
212 001 00	RECIRC FAN (EICAS STATUS)	21-12035 21-16205 21-18891 21-18892 21-22500 21-22501 21-22502 21-22503 21-24400 21-24401 21-24500 21-24501 21-24600 21-24601 21-24700 21-24701 21-25110 21-25111 21-25112 21-25113 21-25210 21-25211 21-25212 21-25213 21-25511 21-25512 21-25513 21-25514 21-25516 21-25517	21-25 TASK 820 21-25 TASK 823 21-00 TASK 806 21-00 TASK 804 21-61 TASK 876 21-61 TASK 877 21-61 TASK 878 21-61 TASK 878 21-25 TASK 805 21-25 TASK 813 21-25 TASK 806 21-25 TASK 814 21-25 TASK 807 21-25 TASK 809 21-25 TASK 808 21-25 TASK 812 21-61 TASK 882 21-61 TASK 882 21-61 TASK 882 21-61 TASK 882 21-61 TASK 882 21-61 TASK 882 21-61 TASK 882 21-61 TASK 884 21-61 TASK 884 21-61 TASK 884 21-61 TASK 884 21-61 TASK 884 21-61 TASK 884

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
212 001 00	RECIRC FAN (EICAS STATUS)	(continued)	
		21-25518	21-61 TASK 884
		21-25519	21-61 TASK 884
		21-29401	21-61 TASK 801
		21-29402	21-61 TASK 817
		21-29437	21-61 TASK 803
		21-29438	21-61 TASK 827
		21-29441	21-61 TASK 828
		21-29442	21-61 TASK 829
		21-29463	21-61 TASK 899
		21-29464	21-61 TASK 900
		21-29467	21-61 TASK 901
		21-29468	21-61 TASK 902
		21-29469	21-61 TASK 815
		21-29470	21-61 TASK 839
		21-29473	21-61 TASK 838
		21-29474	21-61 TASK 839
		21-29601	21-61 TASK 818
		21-29602	21-61 TASK 819
		21-29637	21-61 TASK 830
		21-29638	21-61 TASK 831
		21-29641	21-61 TASK 832
		21-29642	21-61 TASK 833
		21-29663	21-61 TASK 903
		21-29664	21-61 TASK 904
		21-29667	21-61 TASK 905
		21-29668	21-61 TASK 906
		21-29669	21-61 TASK 838
		21-29670	21-61 TASK 839
		21-29673	21-61 TASK 838
		21-29674	21-61 TASK 839
		21-50009	21-52 TASK 855
		21-50011	21-25 TASK 819
		21-50012	21-25 TASK 818
		21-50014	21-61 TASK 897
		21-50015	21-61 TASK 898

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
212 001 00	RECIRC FAN (EICAS STATUS)	(continued)	
		21-50016	21-52 TASK 856
		23-41001	23-93 TASK 819
		23-41002	23-93 TASK 844
		23-41250	23-93 TASK 801
		23-41490	23-93 TASK 801
		23-41500	23-93 TASK 801
		23-41520	23-93 TASK 803
		23-41850	23-93 TASK 803
		23-41860	23-93 TASK 803
		23-41980	23-93 TASK 801
		23-41990	23-93 TASK 803
		23-42001	23-93 TASK 841
		23-42002	23-93 TASK 845
		23-42250	23-93 TASK 802
		23-42490	23-93 TASK 802
		23-42500	23-93 TASK 802
		23-42520	23-93 TASK 804
		23-42850	23-93 TASK 804
		23-42860	23-93 TASK 804
		23-42980	23-93 TASK 802
		23-42990	23-93 TASK 804
		23-43250	21-61 TASK 805
		23-43490	21-51 TASK 807
		23-43500	21-62 TASK 803
		23-43520	21-25 TASK 803
		23-43850	21-51 TASK 821
		23-43860	21-62 TASK 805
		23-43980	21-25 TASK 804
		23-43990	21-61 TASK 888
		23-45010	23-93 TASK 881
		23-46010	23-93 TASK 806
		23-47010	23-93 TASK 801
		23-47020	23-93 TASK 802
		23-48010	23-93 TASK 803
		23-48020	23-93 TASK 804

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
212 001 00	RECIRC FAN (EICAS STATUS)	(continued)	
		23-48801	23-93 TASK 881
		23-48802	23-93 TASK 806
		23-48841	23-93 TASK 819
		23-48842	23-93 TASK 841
		23-48861	23-93 TASK 844
		23-48862	23-93 TASK 845
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878
		23-92010	23-93 TASK 879
		23-92020	23-93 TASK 880
		24-11782	24-51 TASK 838
		24-11786	24-51 TASK 833
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-11805	24-08 TASK 801
		24-11806	24-08 TASK 801
		24-12056	24-32 TASK 820
		24-12057	24-08 TASK 836
		24-12122	24-08 TASK 835
		24-12800	24-08 TASK 805
		24-12801	24-08 TASK 805
		24-12806	24-08 TASK 845
		24-12808	24-08 TASK 802
		24-12809	24-08 TASK 802
		24-12810	24-08 TASK 802
		24-12811	24-08 TASK 802
		24-13815	24-61 TASK 806
		24-18801	24-09 TASK 806
		24-18802	24-09 TASK 807
		24-78841	24-08 TASK 860
		24-78842	24-08 TASK 862

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
212 001 00	RECIRC FAN (EICAS STATUS)	(continued)	
		24-78861	24-08 TASK 861
		24-78862	24-08 TASK 863
		31-14051	31-09 TASK 821
		31-14052	31-09 TASK 822
		31-14053	31-09 TASK 823
		31-14054	31-09 TASK 824
		31-14055	31-09 TASK 825
		31-14056	31-09 TASK 826
		31-14057	31-09 TASK 827
		31-14058	31-09 TASK 827
		31-17437	31-09 TASK 835
		31-17438	31-09 TASK 836
		31-17639	31-10 TASK 814
		31-17640	31-10 TASK 815
		31-17933	31-07 TASK 823
		31-17934	31-07 TASK 824
		31-17935	31-07 TASK 825
		31-17936	31-07 TASK 826
		31-17937	31-07 TASK 827
		31-17938	31-07 TASK 828
		31-17939	31-07 TASK 829
		31-17940	31-07 TASK 830
		31-18801	31-08 TASK 810
		31-18802	31-08 TASK 811
		31-18803	31-08 TASK 812
		31-18804	31-08 TASK 813
		31-18841	31-08 TASK 814
		31-18842	31-08 TASK 814
		31-18863	31-08 TASK 816
		31-18864	31-08 TASK 817
		32-28801	32-09 TASK 821
		32-28802	32-09 TASK 822
		32-28891	32-09 TASK 823
		32-28892	32-09 TASK 824

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212 011 41	LAV-GALLEY FAN L (EICAS STATUS)	21-11043	21-26 TASK 829
		21-11143	21-26 TASK 825
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11787	24-32 TASK 817
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-18801	24-09 TASK 806
		24-78841	24-08 TASK 860
		24-78861	24-08 TASK 861
		31-17472	31-10 TASK 859
		31-17473	31-10 TASK 860
		31-17701	31-10 TASK 863
		31-17702	31-10 TASK 864
212 011 42	LAV-GALLEY FAN R (EICAS STATUS)	21-11044	21-26 TASK 830
		21-11144	21-26 TASK 826
		21-16205	21-25 TASK 823
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-12056	24-32 TASK 820
		24-12057	24-08 TASK 836
		24-12122	24-08 TASK 835
		24-12800	24-08 TASK 805
		24-12801	24-08 TASK 805
		24-12810	24-08 TASK 802
		24-12811	24-08 TASK 802
		24-18801	24-09 TASK 806
		24-18802	24-09 TASK 807
		24-78841	24-08 TASK 860
		24-78842	24-08 TASK 862

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
212 011 42	LAV-GALLEY FAN R (EICAS STATUS)	(continued)	
		24-78861	24-08 TASK 861
		24-78862	24-08 TASK 863
		31-17472	31-10 TASK 859
		31-17473	31-10 TASK 860
		31-17500	31-10 TASK 869
		31-17501	31-10 TASK 870
		31-17669	31-10 TASK 866
		31-17701	31-10 TASK 863
		31-17702	31-10 TASK 864
		31-17703	31-10 TASK 865
212 021 00	CARGO VENT FAN BULK (EICAS STATUS)	21-11013	21-26 TASK 822
		21-11113	21-26 TASK 823
		24-12810	24-08 TASK 802
		24-12811	24-08 TASK 802
212 031 00	EQUIP COOLING (EICAS ADVISORY)	21-14011	21-27 TASK 833
		21-14012	21-27 TASK 834
		21-14023	21-27 TASK 880
		21-14024	21-27 TASK 881
		21-14031	21-27 TASK 832
		21-14041	21-27 TASK 802
		21-14042	21-27 TASK 819
		21-14073	21-27 TASK 870
		21-14074	21-27 TASK 871
		21-14081	21-27 TASK 821
		21-14091	21-27 TASK 803
		21-14101	21-27 TASK 804
		21-14102	21-27 TASK 820
		21-14111	21-27 TASK 811
		21-14112	21-27 TASK 812
		21-14121	21-27 TASK 813
		21-14122	21-27 TASK 810
		21-14131	21-27 TASK 822
		21-14132	21-27 TASK 823
		21-15136	21-27 TASK 878
		21-15137	21-27 TASK 879

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
212 031 00	EQUIP COOLING (EICAS ADVISORY)	(continued)	
		21-17011	21-27 TASK 836
		21-17012	21-27 TASK 837
		21-17021	21-27 TASK 842
		21-17022	21-27 TASK 843
		21-17031	21-27 TASK 838
		21-17032	21-27 TASK 839
		21-17111	21-27 TASK 846
		21-17112	21-27 TASK 847
		21-17121	21-27 TASK 846
		21-17122	21-27 TASK 847
		21-17131	21-27 TASK 845
		21-17132	21-27 TASK 844
		21-17211	21-27 TASK 849
		21-17212	21-27 TASK 851
		21-17221	21-27 TASK 849
		21-17222	21-27 TASK 851
		21-17231	21-27 TASK 848
		21-17232	21-27 TASK 850
		21-17311	21-27 TASK 836
		21-17312	21-27 TASK 837
		21-17321	21-27 TASK 836
		21-17322	21-27 TASK 837
		21-17411	21-27 TASK 841
		21-17412	21-27 TASK 840
		21-17421	21-27 TASK 840
		21-17422	21-27 TASK 841
		21-17511	21-27 TASK 836
		21-17512	21-27 TASK 837
		23-81006	23-91 TASK 806
		24-11793	24-08 TASK 834
		24-11796	24-08 TASK 804
		24-18801	24-09 TASK 806
		24-78861	24-08 TASK 861
		31-17702	31-10 TASK 864
		NONE	21-27 TASK 863

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
212 032 00	EQUIP COOLING OVRD (EICAS ADVISORY)	26-20060 26-20120	26-16 TASK 813 26-16 TASK 813
212 041 41	EQUIP COOLING CTRL L (EICAS STATUS)	21-14011 21-17011 21-17021 21-17031 21-17111 21-17121 21-17131 21-17211 21-17221 21-17231 21-17311 21-17321 21-17411 21-17422 21-17511 21-18111	21-27 TASK 833 21-27 TASK 836 21-27 TASK 842 21-27 TASK 838 21-27 TASK 846 21-27 TASK 846 21-27 TASK 845 21-27 TASK 849 21-27 TASK 849 21-27 TASK 848 21-27 TASK 836 21-27 TASK 836 21-27 TASK 841 21-27 TASK 841 21-27 TASK 836 21-27 TASK 826
212 041 42	EQUIP COOLING CTRL R (EICAS STATUS)	21-14012 21-17012 21-17022 21-17032 21-17112 21-17122 21-17132 21-17212 21-17222 21-17232 21-17312 21-17322 21-17412 21-17421 21-17512 21-18121	21-27 TASK 834 21-27 TASK 837 21-27 TASK 843 21-27 TASK 839 21-27 TASK 847 21-27 TASK 847 21-27 TASK 844 21-27 TASK 851 21-27 TASK 851 21-27 TASK 850 21-27 TASK 837 21-27 TASK 837 21-27 TASK 840 21-27 TASK 840 21-27 TASK 837 21-27 TASK 827
212 071 41	EQUIP COOLING FAN L (EICAS STATUS)	21-14023 21-14073	21-27 TASK 880 21-27 TASK 870

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
212 071 41	EQUIP COOLING FAN L (EICAS STATUS)	(continued)	
		21-15136	21-27 TASK 878
		23-81006	23-91 TASK 806
		24-11793	24-08 TASK 834
		24-11796	24-08 TASK 804
		24-18801	24-09 TASK 806
		24-78861	24-08 TASK 861
		31-17702	31-10 TASK 864
212 071 42	EQUIP COOLING FAN R (EICAS STATUS)	21-14024	21-27 TASK 881
		21-14074	21-27 TASK 871
		21-15137	21-27 TASK 879
212 072 00	EQUIP VENT FAN (EICAS STATUS)	21-15012	21-27 TASK 868
		21-15130	21-27 TASK 867
		21-15135	21-27 TASK 877
		21-16205	21-25 TASK 823
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11787	24-32 TASK 817
		24-12057	24-08 TASK 836
		24-12122	24-08 TASK 835
		24-12800	24-08 TASK 805
		24-12801	24-08 TASK 805
		24-18802	24-09 TASK 807
		24-78842	24-08 TASK 862
		24-78862	24-08 TASK 863
		31-17500	31-10 TASK 869
		31-17501	31-10 TASK 870
		31-17669	31-10 TASK 866
		31-17703	31-10 TASK 865
212 075 41	SATCOM COOLING FAN L (EICAS STATUS)	21-16013	21-27 TASK 869
		21-16393	21-27 TASK 866
		24-11804	24-08 TASK 801
212 075 42	SATCOM COOLING FAN R (EICAS STATUS)	21-16014	21-27 TASK 883
		24-12810	24-08 TASK 802
		24-12811	24-08 TASK 802

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
212 077 00	IFES COOLING FAN (EICAS STATUS)	21-16301	21-27 TASK 856
		21-16394	21-27 TASK 874
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-18801	24-09 TASK 806
		24-78841	24-08 TASK 860
		24-78861	24-08 TASK 861
		31-17472	31-10 TASK 859
		31-17473	31-10 TASK 860
		31-17701	31-10 TASK 863
		31-17702	31-10 TASK 864
212 081 00	FLT DECK FLOW DET (EICAS STATUS)	21-14042	21-27 TASK 819
212 082 00	EQUIP FLOW DET (EICAS STATUS)	21-14041	21-27 TASK 802
212 083 00	DUCT PRESS DET E4 (EICAS STATUS)	21-14051	21-27 TASK 801
212 084 00	DUCT PRESS DET E5 (EICAS STATUS)	21-14052	21-27 TASK 818
212 085 00	DUCT PRESS DET VSCF (EICAS STATUS)	21-14062	21-27 TASK 818
212 086 00	DUCT PRESS DET F/D (EICAS STATUS)	21-14061	21-27 TASK 801
212 091 41	OVRD VALVE MOTOR L (EICAS STATUS)	21-14031	21-27 TASK 832
		21-14091	21-27 TASK 803
		21-14101	21-27 TASK 804
212 091 42	OVRD VALVE MOTOR R (EICAS STATUS)	21-14031	21-27 TASK 832
		21-14091	21-27 TASK 803
		21-14102	21-27 TASK 820
212 092 00	EQUIP VENT VALVE (EICAS STATUS)	21-15031	21-27 TASK 816
		21-15133	21-27 TASK 865
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-11804	24-08 TASK 801

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
212 092 00	EQUIP VENT VALVE (EICAS STATUS)	(continued)	
		24-18801	24-09 TASK 806
		24-78841	24-08 TASK 860
		24-78861	24-08 TASK 861
		31-17472	31-10 TASK 859
		31-17473	31-10 TASK 860
		31-17701	31-10 TASK 863
		31-17702	31-10 TASK 864
212 101 00	CARGO HEAT VALVE FWD (EICAS STATUS)	21-15021	21-27 TASK 815
		21-15132	21-27 TASK 864
		24-11805	24-08 TASK 801
		24-11806	24-08 TASK 801
212 151 00	CHILLER EXHAUST SYS (EICAS STATUS)	21-11024	21-26 TASK 818
		21-11025	21-26 TASK 820
		21-11026	21-26 TASK 817
		21-11122	21-26 TASK 824
		24-12046	24-51 TASK 839
		24-12056	24-32 TASK 820
		24-12099	24-51 TASK 839
		24-12806	24-08 TASK 845
		24-12808	24-08 TASK 802
		24-12809	24-08 TASK 802
212 499 00	RECIRC FANS OFF (EICAS MEMO)		21-25 TASK 815
212 611 00	Gasper air problem - flight deck.		21-22 TASK 801
212 612 00	Flight deck temperature: does not change when FLT DECK TEMP selector moved.		21-22 TASK 802
212 613 00	Flight deck air outlets: Airflow is low.		21-22 TASK 802
212 614 00	Flight deck air outlets: Airflow is excessive or noisy.		21-20 TASK 801
212 621 00	Flight crew rest (main deck): Air outlet problem.		21-29 TASK 834
213 001 00	CABIN ALTITUDE (EICAS WARNING)	21-38010	21-31 TASK 813
		21-38020	21-31 TASK 812
		21-39010	21-31 TASK 803
		21-39020	21-31 TASK 804
		21-39030	21-31 TASK 801
		21-39040	21-31 TASK 808

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
213 001 00	CABIN ALTITUDE (EICAS WARNING)	(continued)	
		21-39050	21-31 TASK 809
		21-39060	21-31 TASK 810
		21-39071	21-31 TASK 823
		21-39080	21-31 TASK 806
		21-39082	21-31 TASK 824
		21-39090	21-31 TASK 817
		21-39092	21-31 TASK 825
		21-39190	21-31 TASK 805
		21-39290	21-31 TASK 814
		21-39390	21-31 TASK 815
		21-39490	21-31 TASK 816
		23-41020	23-93 TASK 803
		23-41310	23-93 TASK 801
		23-42020	23-93 TASK 804
		23-42310	23-93 TASK 802
		23-43020	21-31 TASK 811
		23-43310	21-31 TASK 807
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-13850	24-08 TASK 803
		31-84101	21-31 TASK 819
		31-84102	21-31 TASK 820
		36-13001	36-13 TASK 810
		36-13002	36-13 TASK 811
		36-13011	36-13 TASK 801
		36-13012	36-13 TASK 801
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
213 002 00	CABIN ALTITUDE AUTO (EICAS CAUTION)	21-38010	21-31 TASK 813
		21-38020	21-31 TASK 812
		21-39010	21-31 TASK 803
		21-39020	21-31 TASK 804
		21-39030	21-31 TASK 801

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213 002 00	CABIN ALTITUDE AUTO (EICAS CAUTION)	(continued)	
		21-39040	21-31 TASK 808
		21-39050	21-31 TASK 809
		21-39060	21-31 TASK 810
		21-39080	21-31 TASK 806
		21-39082	21-31 TASK 824
		21-39090	21-31 TASK 817
		21-39092	21-31 TASK 825
		21-39190	21-31 TASK 805
		21-39290	21-31 TASK 814
		21-39390	21-31 TASK 815
		21-39490	21-31 TASK 816
		23-41020	23-93 TASK 803
		23-41310	23-93 TASK 801
		23-42020	23-93 TASK 804
		23-42310	23-93 TASK 802
		23-43020	21-31 TASK 811
		23-43310	21-31 TASK 807
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-12051	24-32 TASK 819
		24-13814	24-33 TASK 817
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69461	31-42 TASK 847
		31-69462	31-42 TASK 847
		31-69463	31-42 TASK 847
		31-69464	31-42 TASK 847

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
213 002 00	CABIN ALTITUDE AUTO (EICAS CAUTION)	(continued)	
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69661	31-42 TASK 874
		31-69662	31-42 TASK 874
		31-69663	31-42 TASK 874
		31-69664	31-42 TASK 874
		36-13001	36-13 TASK 810
		36-13002	36-13 TASK 811
		36-13011	36-13 TASK 801
		36-13012	36-13 TASK 801
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
213 003 41	CABIN ALT AUTO L (EICAS STATUS)	21-38010	21-31 TASK 813
		21-38020	21-31 TASK 812
		21-39010	21-31 TASK 803
		21-39020	21-31 TASK 804
		21-39030	21-31 TASK 801
		21-39050	21-31 TASK 809
		21-39080	21-31 TASK 806
		21-39090	21-31 TASK 817
		21-39190	21-31 TASK 805
		21-39290	21-31 TASK 814
		23-41020	23-93 TASK 803
		23-41310	23-93 TASK 801
		23-42020	23-93 TASK 804
		23-42310	23-93 TASK 802
		23-43020	21-31 TASK 811

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213 003 41	CABIN ALT AUTO L (EICAS STATUS)	(continued)	
		23-43310	21-31 TASK 807
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-13814	24-33 TASK 817
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69461	31-42 TASK 847
		31-69462	31-42 TASK 847
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69661	31-42 TASK 874
		31-69662	31-42 TASK 874
		36-13001	36-13 TASK 810
		36-13011	36-13 TASK 801
		36-18801	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18861	36-13 TASK 806
		36-19401	36-13 TASK 804
		36-19601	36-13 TASK 806
213 003 42	CABIN ALT AUTO R (EICAS STATUS)	21-38010	21-31 TASK 813
		21-38020	21-31 TASK 812
		21-39010	21-31 TASK 803
		21-39020	21-31 TASK 804
		21-39040	21-31 TASK 808
		21-39060	21-31 TASK 810
		21-39080	21-31 TASK 806
		21-39082	21-31 TASK 824

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213 003 42	CABIN ALT AUTO R (EICAS STATUS)	(continued)	
		21-39090	21-31 TASK 817
		21-39092	21-31 TASK 825
		21-39390	21-31 TASK 815
		21-39490	21-31 TASK 816
		23-41020	23-93 TASK 803
		23-41310	23-93 TASK 801
		23-42020	23-93 TASK 804
		23-42310	23-93 TASK 802
		23-43020	21-31 TASK 811
		23-43310	21-31 TASK 807
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-12051	24-32 TASK 819
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69463	31-42 TASK 847
		31-69464	31-42 TASK 847
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69663	31-42 TASK 874
		31-69664	31-42 TASK 874
		36-13002	36-13 TASK 811
		36-13012	36-13 TASK 801
		36-18802	36-13 TASK 803
		36-18842	36-13 TASK 805
		36-18862	36-13 TASK 807
		36-19402	36-13 TASK 805

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213 003 42	CABIN ALT AUTO R (EICAS STATUS)	(continued) 36-19602	36-13 TASK 807
213 011 00	LANDING ALTITUDE (EICAS ADVISORY)	31-50011 31-50012 31-50091 31-50092 31-51023 31-51024 31-51025 31-51026 31-51411 31-51412 31-51413 31-51414 31-51421 31-51422 31-51423 31-51424 31-68801 31-68802 31-83171 31-83172 31-83173 31-83174 31-83181 31-83182 31-83183 31-83184 34-71011 34-71012 34-71031 34-71032 34-71060	31-44 TASK 801 31-44 TASK 802 31-44 TASK 819 31-44 TASK 820 31-44 TASK 865 31-44 TASK 866 31-43 TASK 803 31-43 TASK 804 34-61 TASK 913 34-61 TASK 914 34-61 TASK 815 34-61 TASK 889 34-61 TASK 888 34-61 TASK 814 34-61 TASK 815 34-61 TASK 889 31-43 TASK 892 31-43 TASK 893 31-61 TASK 874 31-61 TASK 875 31-61 TASK 876 31-61 TASK 877 31-61 TASK 917 31-61 TASK 918 31-61 TASK 919 31-61 TASK 920 34-61 TASK 905 34-61 TASK 906 34-61 TASK 815 34-61 TASK 889 34-90 TASK 801
213 021 44	OUTFLOW VALVE FWD (EICAS ADVISORY)	21-38020 21-39020 21-39050	21-31 TASK 812 21-31 TASK 804 21-31 TASK 809

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
213 021 44	OUTFLOW VALVE FWD (EICAS ADVISORY)	(continued)	
		21-39060	21-31 TASK 810
		21-39090	21-31 TASK 817
		21-39092	21-31 TASK 825
		21-39190	21-31 TASK 805
		21-39390	21-31 TASK 815
		23-41310	23-93 TASK 801
		23-42310	23-93 TASK 802
213 021 45	OUTFLOW VALVE AFT (EICAS ADVISORY)	23-43310	21-31 TASK 807
		21-38010	21-31 TASK 813
		21-39010	21-31 TASK 803
		21-39030	21-31 TASK 801
		21-39040	21-31 TASK 808
		21-39080	21-31 TASK 806
		21-39082	21-31 TASK 824
		21-39290	21-31 TASK 814
		21-39490	21-31 TASK 816
		23-41020	23-93 TASK 803
		23-42020	23-93 TASK 804
213 022 44	OUTFLOW VALVE FWD (EICAS STATUS)	23-43020	21-31 TASK 811
		21-38020	21-31 TASK 812
		21-39020	21-31 TASK 804
		21-39050	21-31 TASK 809
		21-39060	21-31 TASK 810
		21-39090	21-31 TASK 817
		21-39092	21-31 TASK 825
		21-39190	21-31 TASK 805
		21-39390	21-31 TASK 815
		23-41310	23-93 TASK 801
		23-42310	23-93 TASK 802
213 022 45	OUTFLOW VALVE AFT (EICAS STATUS)	23-43310	21-31 TASK 807
		21-38010	21-31 TASK 813
		21-39010	21-31 TASK 803
		21-39030	21-31 TASK 801
		21-39040	21-31 TASK 808
		21-39080	21-31 TASK 806

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
213 022 45	OUTFLOW VALVE AFT (EICAS STATUS)	(continued)	
		21-39082	21-31 TASK 824
		21-39290	21-31 TASK 814
		21-39490	21-31 TASK 816
		23-41020	23-93 TASK 803
		23-42020	23-93 TASK 804
		23-43020	21-31 TASK 811
213 031 00	CPCS AIR/GND (EICAS STATUS)	21-38310	32-09 TASK 828
		32-21000	32-09 TASK 807
		32-21001	32-09 TASK 808
		32-21100	32-09 TASK 802
		32-21101	32-09 TASK 801
		32-21300	32-09 TASK 803
		32-21301	32-09 TASK 804
		32-22000	32-09 TASK 809
		32-22001	32-09 TASK 809
		32-22100	32-09 TASK 809
		32-22101	32-09 TASK 809
		32-28801	32-09 TASK 821
		32-28802	32-09 TASK 822
213 032 00	CPCS REMOTE SENSOR (EICAS STATUS)	21-39071	21-31 TASK 823
		24-13850	24-08 TASK 803
		31-84101	21-31 TASK 819
		31-84102	21-31 TASK 820
213 480 41	Maintenance memo shows on the MAT: CABIN PRESSURE (L).	21-38010	21-31 TASK 813
		21-38020	21-31 TASK 812
		21-39010	21-31 TASK 803
		21-39020	21-31 TASK 804
		21-39030	21-31 TASK 801
		21-39050	21-31 TASK 809
		21-39080	21-31 TASK 806
		21-39090	21-31 TASK 817
		21-39190	21-31 TASK 805
		21-39290	21-31 TASK 814
		23-41020	23-93 TASK 803

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
213 480 41	Maintenance memo shows on the MAT: CABIN PRESSURE (L).	(continued)	
		23-41040	23-93 TASK 803
		23-41080	23-93 TASK 803
		23-41200	23-93 TASK 801
		23-41310	23-93 TASK 801
		23-41430	23-93 TASK 801
		23-41470	23-93 TASK 801
		23-41780	23-93 TASK 803
		23-41830	23-93 TASK 803
		23-42020	23-93 TASK 804
		23-42040	23-93 TASK 804
		23-42080	23-93 TASK 804
		23-42200	23-93 TASK 802
		23-42310	23-93 TASK 802
		23-42430	23-93 TASK 802
		23-42470	23-93 TASK 802
		23-42780	23-93 TASK 804
		23-42830	23-93 TASK 804
		23-43020	21-31 TASK 811
		23-43040	36-10 TASK 801
		23-43080	49-10 TASK 805
		23-43200	36-10 TASK 801
		23-43310	21-31 TASK 807
		23-43430	36-10 TASK 801
		23-43470	36-10 TASK 801
		23-43780	36-10 TASK 801
		23-43830	36-10 TASK 801
		23-45010	23-93 TASK 881
		23-46010	23-93 TASK 806
		23-47010	23-93 TASK 801
		23-47020	23-93 TASK 802
		23-48010	23-93 TASK 803
		23-48020	23-93 TASK 804
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
213 480 41	Maintenance memo shows on the MAT: CABIN PRESSURE (L).	(continued)	
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878
		23-92010	23-93 TASK 879
		23-92020	23-93 TASK 880
		36-13001	36-13 TASK 810
		36-19401	36-13 TASK 804
		36-19601	36-13 TASK 806
213 480 42	Maintenance memo shows on the MAT: CABIN PRESSURE (R).	21-38010	21-31 TASK 813
		21-38020	21-31 TASK 812
		21-39010	21-31 TASK 803
		21-39020	21-31 TASK 804
		21-39040	21-31 TASK 808
		21-39060	21-31 TASK 810
		21-39080	21-31 TASK 806
		21-39082	21-31 TASK 824
		21-39090	21-31 TASK 817
		21-39092	21-31 TASK 825
		21-39390	21-31 TASK 815
		21-39490	21-31 TASK 816
		23-41020	23-93 TASK 803
		23-41040	23-93 TASK 803
		23-41080	23-93 TASK 803
		23-41200	23-93 TASK 801
		23-41310	23-93 TASK 801
		23-41430	23-93 TASK 801
		23-41470	23-93 TASK 801
		23-41780	23-93 TASK 803
		23-41830	23-93 TASK 803
		23-42020	23-93 TASK 804
		23-42040	23-93 TASK 804
		23-42080	23-93 TASK 804
		23-42200	23-93 TASK 802
		23-42310	23-93 TASK 802

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
213 480 42	Maintenance memo shows on the MAT: CABIN PRESSURE (R).	(continued)	
		23-42430	23-93 TASK 802
		23-42470	23-93 TASK 802
		23-42780	23-93 TASK 804
		23-42830	23-93 TASK 804
		23-43020	21-31 TASK 811
		23-43040	36-10 TASK 801
		23-43080	49-10 TASK 805
		23-43200	36-10 TASK 801
		23-43310	21-31 TASK 807
		23-43430	36-10 TASK 801
		23-43470	36-10 TASK 801
		23-43780	36-10 TASK 801
		23-43830	36-10 TASK 801
		23-45010	23-93 TASK 881
		23-46010	23-93 TASK 806
		23-47010	23-93 TASK 801
		23-47020	23-93 TASK 802
		23-48010	23-93 TASK 803
		23-48020	23-93 TASK 804
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878
		23-92010	23-93 TASK 879
		23-92020	23-93 TASK 880
		36-13002	36-13 TASK 811
		36-19402	36-13 TASK 805
		36-19602	36-13 TASK 807
213 611 00	Outflow valve position indication on EICAS display: indication blank.		21-31 TASK 822
213 612 00	Cabin altitude indication on EICAS display: indication blank.		21-31 TASK 822
213 613 00	Cabin rate-of-climb indication on EICAS display: indication blank.		21-31 TASK 822

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
213 614 00	Cabin differential pressure indication on EICAS display: indication blank.		21-31 TASK 822
214 001 45	CARGO HEAT AFT (EICAS ADVISORY)	21-11043	21-26 TASK 829
		21-11044	21-26 TASK 830
		21-11143	21-26 TASK 825
		21-11144	21-26 TASK 826
		21-12011	21-44 TASK 801
		21-12014	21-44 TASK 817
		21-12021	21-44 TASK 802
		21-12031	21-44 TASK 804
		21-13174	21-44 TASK 813
		21-13175	21-44 TASK 815
		21-16205	21-25 TASK 823
		21-18891	21-00 TASK 806
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11787	24-32 TASK 817
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-11805	24-08 TASK 801
		24-11806	24-08 TASK 801
		24-12056	24-32 TASK 820
		24-12057	24-08 TASK 836
		24-12122	24-08 TASK 835
		24-12800	24-08 TASK 805
		24-12801	24-08 TASK 805
		24-12810	24-08 TASK 802
		24-12811	24-08 TASK 802
		24-18801	24-09 TASK 806
		24-18802	24-09 TASK 807
		24-78841	24-08 TASK 860
		24-78842	24-08 TASK 862
		24-78861	24-08 TASK 861
		24-78862	24-08 TASK 863

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214 001 45	CARGO HEAT AFT (EICAS ADVISORY)	(continued)	
		31-14051	31-09 TASK 821
		31-14052	31-09 TASK 822
		31-14055	31-09 TASK 825
		31-14057	31-09 TASK 827
		31-17438	31-09 TASK 836
		31-17472	31-10 TASK 859
		31-17473	31-10 TASK 860
		31-17500	31-10 TASK 869
		31-17501	31-10 TASK 870
		31-17640	31-10 TASK 815
		31-17669	31-10 TASK 866
		31-17701	31-10 TASK 863
		31-17702	31-10 TASK 864
		31-17703	31-10 TASK 865
		31-17933	31-07 TASK 823
		31-17935	31-07 TASK 825
		31-18801	31-08 TASK 810
		31-18803	31-08 TASK 812
		31-18841	31-08 TASK 814
		31-18863	31-08 TASK 816
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69491	31-42 TASK 851
		31-69492	31-42 TASK 851
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69691	31-42 TASK 878

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214 001 45	CARGO HEAT AFT (EICAS ADVISORY)	(continued) 31-69692	31-42 TASK 878
214 002 00	CARGO HEAT BULK (EICAS ADVISORY)	21-11043 21-11044 21-11143 21-11144 21-12012 21-12015 21-12022 21-12032 21-12123 21-12133 21-16205 21-18892 23-81004 23-81006 24-11787 24-11790 24-11793 24-11795 24-11796 24-12056 24-12057 24-12122 24-12800 24-12801 24-12810 24-12811 24-18801 24-18802 24-78841 24-78842 24-78861 24-78862 31-14053 31-14054	21-26 TASK 829 21-26 TASK 830 21-26 TASK 825 21-26 TASK 826 21-44 TASK 808 21-44 TASK 818 21-44 TASK 809 21-44 TASK 810 21-44 TASK 814 21-44 TASK 816 21-25 TASK 823 21-00 TASK 804 23-91 TASK 804 23-91 TASK 806 24-32 TASK 817 24-08 TASK 833 24-08 TASK 834 24-08 TASK 804 24-08 TASK 804 24-32 TASK 820 24-08 TASK 836 24-08 TASK 835 24-08 TASK 805 24-08 TASK 805 24-08 TASK 802 24-08 TASK 802 24-09 TASK 806 24-09 TASK 807 24-08 TASK 860 24-08 TASK 862 24-08 TASK 861 24-08 TASK 863 31-09 TASK 823 31-09 TASK 824

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
214 002 00	CARGO HEAT BULK (EICAS ADVISORY)	(continued)	
		31-14056	31-09 TASK 826
		31-14058	31-09 TASK 827
		31-17437	31-09 TASK 835
		31-17472	31-10 TASK 859
		31-17473	31-10 TASK 860
		31-17500	31-10 TASK 869
		31-17501	31-10 TASK 870
		31-17639	31-10 TASK 814
		31-17669	31-10 TASK 866
		31-17701	31-10 TASK 863
		31-17702	31-10 TASK 864
		31-17703	31-10 TASK 865
		31-17934	31-07 TASK 824
		31-17936	31-07 TASK 826
		31-18802	31-08 TASK 811
		31-18804	31-08 TASK 813
		31-18842	31-08 TASK 814
		31-18864	31-08 TASK 817
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69493	31-42 TASK 851
		31-69494	31-42 TASK 851
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69693	31-42 TASK 878
		31-69694	31-42 TASK 878

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
214 011 45	CARGO HEAT VALVE AFT (EICAS STATUS)	21-12021	21-44 TASK 802
		21-12031	21-44 TASK 804
		21-13174	21-44 TASK 813
		21-13175	21-44 TASK 815
		24-11805	24-08 TASK 801
		24-11806	24-08 TASK 801
214 012 00	CARGO HEAT VLV BULK (EICAS STATUS)	21-12022	21-44 TASK 809
		21-12032	21-44 TASK 810
		21-12123	21-44 TASK 814
		21-12133	21-44 TASK 816
		24-12810	24-08 TASK 802
		24-12811	24-08 TASK 802
214 021 45	CARGO TEMP SNSR AFT (EICAS STATUS)	21-12011	21-44 TASK 801
214 022 00	CARGO TEMP SNSR BULK (EICAS STATUS)	21-12012	21-44 TASK 808
214 051 44	CARGO A/C FWD (EICAS ADVISORY)	21-16121	21-28 TASK 801
		21-16192	21-28 TASK 803
		21-18891	21-00 TASK 806
		21-18892	21-00 TASK 804
		21-20020	21-61 TASK 887
		21-22120	21-61 TASK 891
		21-22220	21-61 TASK 892
		21-22320	21-61 TASK 889
		21-22420	21-61 TASK 890
		21-22500	21-61 TASK 876
		21-22501	21-61 TASK 877
		21-22502	21-61 TASK 878
		21-22503	21-61 TASK 878
		21-25011	21-61 TASK 868
		21-25012	21-61 TASK 868
		21-25013	21-61 TASK 868
		21-25014	21-61 TASK 868
		21-28801	21-61 TASK 868
		21-28802	21-61 TASK 868
		21-28841	21-61 TASK 801
		21-28842	21-61 TASK 817
		21-28861	21-61 TASK 818

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214 051 44	CARGO A/C FWD (EICAS ADVISORY)	(continued)	
		21-28862	21-61 TASK 819
		21-29401	21-61 TASK 801
		21-29402	21-61 TASK 817
		21-29601	21-61 TASK 818
		21-29602	21-61 TASK 819
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11784	24-51 TASK 836
		24-11785	24-51 TASK 836
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-12125	24-51 TASK 841
		24-12126	24-51 TASK 841
		24-18801	24-09 TASK 806
		24-78841	24-08 TASK 860
		24-78861	24-08 TASK 861
		31-14051	31-09 TASK 821
		31-14052	31-09 TASK 822
		31-14053	31-09 TASK 823
		31-14054	31-09 TASK 824
		31-14055	31-09 TASK 825
		31-14056	31-09 TASK 826
		31-14057	31-09 TASK 827
		31-14058	31-09 TASK 827
		31-17437	31-09 TASK 835
		31-17438	31-09 TASK 836
		31-17472	31-10 TASK 859
		31-17473	31-10 TASK 860
		31-17639	31-10 TASK 814
		31-17640	31-10 TASK 815
		31-17701	31-10 TASK 863
		31-17702	31-10 TASK 864
		31-17933	31-07 TASK 823

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214 051 44	CARGO A/C FWD (EICAS ADVISORY)	(continued)	
		31-17934	31-07 TASK 824
		31-17935	31-07 TASK 825
		31-17936	31-07 TASK 826
		31-18801	31-08 TASK 810
		31-18802	31-08 TASK 811
		31-18803	31-08 TASK 812
		31-18804	31-08 TASK 813
		31-18841	31-08 TASK 814
		31-18842	31-08 TASK 814
		31-18863	31-08 TASK 816
		31-18864	31-08 TASK 817
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69403	31-42 TASK 826
		31-69404	31-42 TASK 826
		31-69405	31-42 TASK 826
		31-69406	31-42 TASK 826
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69603	31-42 TASK 858
		31-69604	31-42 TASK 858
		31-69605	31-42 TASK 858
		31-69606	31-42 TASK 858
214 052 44	CARGO A/C SELECT FWD (EICAS STATUS)	21-29469	21-61 TASK 815
		21-29470	21-61 TASK 839
		21-29473	21-61 TASK 838
		21-29474	21-61 TASK 839

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
214 052 44	CARGO A/C SELECT FWD (EICAS STATUS)	(continued)	
		21-29669	21-61 TASK 838
		21-29670	21-61 TASK 839
		21-29673	21-61 TASK 838
		21-29674	21-61 TASK 839
		23-41001	23-93 TASK 819
		23-41002	23-93 TASK 844
		23-41250	23-93 TASK 801
		23-41490	23-93 TASK 801
		23-41500	23-93 TASK 801
		23-41520	23-93 TASK 803
		23-41850	23-93 TASK 803
		23-41860	23-93 TASK 803
		23-41980	23-93 TASK 801
		23-41990	23-93 TASK 803
		23-42001	23-93 TASK 841
		23-42002	23-93 TASK 845
		23-42250	23-93 TASK 802
		23-42490	23-93 TASK 802
		23-42500	23-93 TASK 802
		23-42520	23-93 TASK 804
		23-42850	23-93 TASK 804
		23-42860	23-93 TASK 804
		23-42980	23-93 TASK 802
		23-42990	23-93 TASK 804
		23-43250	21-61 TASK 805
		23-43490	21-51 TASK 807
		23-43500	21-62 TASK 803
		23-43520	21-25 TASK 803
		23-43850	21-51 TASK 821
		23-43860	21-62 TASK 805
		23-43980	21-25 TASK 804
		23-43990	21-61 TASK 888
		23-45010	23-93 TASK 881
		23-46010	23-93 TASK 806
		23-47010	23-93 TASK 801

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
214 052 44	CARGO A/C SELECT FWD (EICAS STATUS)	(continued)	
		23-47020	23-93 TASK 802
		23-48010	23-93 TASK 803
		23-48020	23-93 TASK 804
		23-48801	23-93 TASK 881
		23-48802	23-93 TASK 806
		23-48841	23-93 TASK 819
		23-48842	23-93 TASK 841
		23-48861	23-93 TASK 844
		23-48862	23-93 TASK 845
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878
		23-92010	23-93 TASK 879
		23-92020	23-93 TASK 880
		24-12056	24-32 TASK 820
		24-13815	24-61 TASK 806
214 053 44	CARGO A/C SOV FWD (EICAS STATUS)	21-16121	21-28 TASK 801
		21-16192	21-28 TASK 803
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-18801	24-09 TASK 806
		24-78841	24-08 TASK 860
		24-78861	24-08 TASK 861
		31-17472	31-10 TASK 859
		31-17473	31-10 TASK 860
		31-17701	31-10 TASK 863
		31-17702	31-10 TASK 864
214 054 44	CARGO DUCT SNSRS FWD (EICAS STATUS)	21-22320	21-61 TASK 889
		21-22420	21-61 TASK 890

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
214 055 44	CARGO EXH FAN FWD (EICAS STATUS)	21-16152	21-26 TASK 834
		21-16392	21-26 TASK 833
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-18801	24-09 TASK 806
		24-78841	24-08 TASK 860
		24-78861	24-08 TASK 861
		31-17472	31-10 TASK 859
		31-17473	31-10 TASK 860
		31-17701	31-10 TASK 863
		31-17702	31-10 TASK 864
214 056 44	CARGO TEMP SNSRS FWD (EICAS STATUS)	21-22120	21-61 TASK 891
		21-22220	21-61 TASK 892
214 057 44	CARGO TRIM VALVE FWD (EICAS STATUS)	21-20020	21-61 TASK 887
214 061 00	EQUIP DIVERT VALVE (EICAS STATUS)	21-16141	21-27 TASK 859
		21-16182	21-27 TASK 875
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-18801	24-09 TASK 806
		24-78841	24-08 TASK 860
		24-78861	24-08 TASK 861
		31-17472	31-10 TASK 859
		31-17473	31-10 TASK 860
		31-17701	31-10 TASK 863
		31-17702	31-10 TASK 864
214 062 00	EQUIP INBOARD VALVE (EICAS STATUS)	21-16131	21-27 TASK 861
		21-16172	21-27 TASK 876

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
214 062 00	EQUIP INBOARD VALVE (EICAS STATUS)	(continued) 23-81004 23-81006 24-11790 24-11793 24-11795 24-11796 24-18801 24-78841 24-78861 31-17472 31-17473 31-17701 31-17702	23-91 TASK 804 23-91 TASK 806 24-08 TASK 833 24-08 TASK 834 24-08 TASK 804 24-08 TASK 804 24-09 TASK 806 24-08 TASK 860 24-08 TASK 861 31-10 TASK 859 31-10 TASK 860 31-10 TASK 863 31-10 TASK 864
214 611 31	Foot heater problem - captain's.		21-45 TASK 818
214 611 32	Foot heater problem - first officer's.		21-45 TASK 818
214 621 31	Shoulder heater problem - captain's.		21-45 TASK 819
214 621 32	Shoulder heater problem - first officer's.		21-45 TASK 819
214 631 00	Flight crew rest (main deck): heater problem.		21-41 TASK 806
215 001 41	PACK L (EICAS ADVISORY)	21-21191 21-23001 21-23013 21-23041 21-23081 21-23082 21-23101 21-23201 21-23301 21-23411 21-23421 21-23431 21-23491 21-24001 21-24101 21-24821 21-24901	21-52 TASK 816 21-51 TASK 802 21-51 TASK 811 21-51 TASK 803 21-51 TASK 823 21-51 TASK 824 21-52 TASK 808 21-52 TASK 814 21-52 TASK 815 21-52 TASK 806 21-52 TASK 830 21-52 TASK 805 21-52 TASK 817 21-51 TASK 806 21-51 TASK 817 21-52 TASK 818 21-52 TASK 811

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 001 41	PACK L (EICAS ADVISORY)	(continued)	
		21-24911	21-52 TASK 813
		21-25501	21-61 TASK 883
		21-25502	21-61 TASK 883
		21-25506	21-61 TASK 883
		21-25507	21-61 TASK 883
		21-29429	21-61 TASK 812
		21-29433	21-61 TASK 838
		21-29629	21-61 TASK 838
		21-29633	21-61 TASK 838
		21-29911	21-51 TASK 804
		21-50009	21-52 TASK 855
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11787	24-32 TASK 817
		24-12051	24-32 TASK 819
		24-13814	24-33 TASK 817
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
215 001 42	PACK R (EICAS ADVISORY)	21-21192	21-52 TASK 842
		21-23002	21-51 TASK 810
		21-23014	21-51 TASK 812
		21-23042	21-51 TASK 813
		21-23081	21-51 TASK 823
		21-23082	21-51 TASK 824
		21-23102	21-52 TASK 839
		21-23202	21-52 TASK 836
		21-23302	21-52 TASK 837

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 001 42	PACK R (EICAS ADVISORY)	(continued)	
		21-23412	21-52 TASK 829
		21-23422	21-52 TASK 831
		21-23432	21-52 TASK 828
		21-23492	21-52 TASK 843
		21-24002	21-51 TASK 816
		21-24102	21-51 TASK 818
		21-24822	21-52 TASK 818
		21-24902	21-52 TASK 835
		21-24912	21-52 TASK 841
		21-25503	21-61 TASK 883
		21-25504	21-61 TASK 883
		21-25508	21-61 TASK 883
		21-25509	21-61 TASK 883
		21-29430	21-61 TASK 839
		21-29434	21-61 TASK 839
		21-29630	21-61 TASK 839
		21-29634	21-61 TASK 839
		21-29912	21-51 TASK 814
		21-50016	21-52 TASK 856
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-12051	24-32 TASK 819
		24-12056	24-32 TASK 820
		24-12808	24-08 TASK 802
		24-12809	24-08 TASK 802
		24-13814	24-33 TASK 817
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 001 42	PACK R (EICAS ADVISORY)	(continued) 36-19602	36-13 TASK 807
215 002 41	PACK L (EICAS STATUS)	21-21191 21-22801 21-23001 21-23003 21-23011 21-23013 21-23041 21-23081 21-23082 21-23101 21-23491 21-24001 21-24101 21-24821 21-24911 21-29401 21-29429 21-29433 21-29463 21-29469 21-29473 21-29601 21-29629 21-29633 21-29663 21-29669 21-29673 21-29911 21-50009 23-41001 23-41002 23-41250 23-41490 23-41500	21-52 TASK 816 21-51 TASK 801 21-51 TASK 802 21-51 TASK 827 21-51 TASK 811 21-51 TASK 811 21-51 TASK 803 21-51 TASK 823 21-51 TASK 824 21-52 TASK 808 21-52 TASK 817 21-51 TASK 806 21-51 TASK 817 21-52 TASK 818 21-52 TASK 813 21-61 TASK 801 21-61 TASK 812 21-61 TASK 838 21-61 TASK 899 21-61 TASK 815 21-61 TASK 838 21-61 TASK 818 21-61 TASK 838 21-61 TASK 838 21-61 TASK 903 21-61 TASK 838 21-61 TASK 838 21-51 TASK 804 21-52 TASK 855 23-93 TASK 819 23-93 TASK 844 23-93 TASK 801 23-93 TASK 801 23-93 TASK 801

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 002 41	PACK L (EICAS STATUS)	(continued)	
		23-41520	23-93 TASK 803
		23-41980	23-93 TASK 801
		23-41990	23-93 TASK 803
		23-42001	23-93 TASK 841
		23-42002	23-93 TASK 845
		23-42250	23-93 TASK 802
		23-42490	23-93 TASK 802
		23-42500	23-93 TASK 802
		23-42520	23-93 TASK 804
		23-42980	23-93 TASK 802
		23-42990	23-93 TASK 804
		23-43250	21-61 TASK 805
		23-43490	21-51 TASK 807
		23-43500	21-62 TASK 803
		23-43520	21-25 TASK 803
		23-43980	21-25 TASK 804
		23-43990	21-61 TASK 888
		23-45010	23-93 TASK 881
		23-46010	23-93 TASK 806
		23-47010	23-93 TASK 801
		23-47020	23-93 TASK 802
		23-48010	23-93 TASK 803
		23-48020	23-93 TASK 804
		23-48801	23-93 TASK 881
		23-48802	23-93 TASK 806
		23-48841	23-93 TASK 819
		23-48842	23-93 TASK 841
		23-48861	23-93 TASK 844
		23-48862	23-93 TASK 845
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878
		23-92010	23-93 TASK 879
		23-92020	23-93 TASK 880

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 002 41	PACK L (EICAS STATUS)	(continued)	
		24-11787	24-32 TASK 817
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-12051	24-32 TASK 819
		24-12056	24-32 TASK 820
		24-13814	24-33 TASK 817
		24-13815	24-61 TASK 806
		24-18801	24-09 TASK 806
		24-78841	24-08 TASK 860
		24-78861	24-08 TASK 861
		36-10480	36-21 TASK 805
		36-13001	36-13 TASK 810
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
		NONE	21-51 TASK 834
215 002 42	PACK R (EICAS STATUS)	21-16205	21-25 TASK 823
		21-21192	21-52 TASK 842
		21-22802	21-51 TASK 809
		21-23002	21-51 TASK 810
		21-23004	21-51 TASK 828
		21-23011	21-51 TASK 811
		21-23012	21-51 TASK 812
		21-23013	21-51 TASK 811
		21-23014	21-51 TASK 812
		21-23042	21-51 TASK 813

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 002 42	PACK R (EICAS STATUS)	(continued)	
		21-23081	21-51 TASK 823
		21-23082	21-51 TASK 824
		21-23102	21-52 TASK 839
		21-23492	21-52 TASK 843
		21-24002	21-51 TASK 816
		21-24102	21-51 TASK 818
		21-24822	21-52 TASK 818
		21-24912	21-52 TASK 841
		21-29402	21-61 TASK 817
		21-29430	21-61 TASK 839
		21-29434	21-61 TASK 839
		21-29468	21-61 TASK 902
		21-29470	21-61 TASK 839
		21-29474	21-61 TASK 839
		21-29602	21-61 TASK 819
		21-29630	21-61 TASK 839
		21-29634	21-61 TASK 839
		21-29668	21-61 TASK 906
		21-29670	21-61 TASK 839
		21-29674	21-61 TASK 839
		21-29912	21-51 TASK 814
		21-50016	21-52 TASK 856
		23-41001	23-93 TASK 819
		23-41002	23-93 TASK 844
		23-41250	23-93 TASK 801
		23-41520	23-93 TASK 803
		23-41850	23-93 TASK 803
		23-41860	23-93 TASK 803
		23-41980	23-93 TASK 801
		23-41990	23-93 TASK 803
		23-42001	23-93 TASK 841
		23-42002	23-93 TASK 845
		23-42250	23-93 TASK 802
		23-42520	23-93 TASK 804
		23-42850	23-93 TASK 804

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 002 42	PACK R (EICAS STATUS)	(continued)	
		23-42860	23-93 TASK 804
		23-42980	23-93 TASK 802
		23-42990	23-93 TASK 804
		23-43250	21-61 TASK 805
		23-43520	21-25 TASK 803
		23-43850	21-51 TASK 821
		23-43860	21-62 TASK 805
		23-43980	21-25 TASK 804
		23-43990	21-61 TASK 888
		23-45010	23-93 TASK 881
		23-46010	23-93 TASK 806
		23-47010	23-93 TASK 801
		23-47020	23-93 TASK 802
		23-48010	23-93 TASK 803
		23-48020	23-93 TASK 804
		23-48801	23-93 TASK 881
		23-48802	23-93 TASK 806
		23-48841	23-93 TASK 819
		23-48842	23-93 TASK 841
		23-48861	23-93 TASK 844
		23-48862	23-93 TASK 845
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878
		23-92010	23-93 TASK 879
		23-92020	23-93 TASK 880
		24-12051	24-32 TASK 819
		24-12056	24-32 TASK 820
		24-12057	24-08 TASK 836
		24-12122	24-08 TASK 835
		24-12800	24-08 TASK 805
		24-12801	24-08 TASK 805
		24-12808	24-08 TASK 802
		24-12809	24-08 TASK 802

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215 002 42	PACK R (EICAS STATUS)	(continued)	
		24-13814	24-33 TASK 817
		24-13815	24-61 TASK 806
		24-18802	24-09 TASK 807
		24-78842	24-08 TASK 862
		24-78862	24-08 TASK 863
		36-10490	36-21 TASK 801
		36-13002	36-13 TASK 811
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
		NONE	21-51 TASK 834
215 003 00	PACK L+R (EICAS CAUTION)		21-98 TASK 801
215 021 41	PACK FCV L (EICAS STATUS)	21-23001	21-51 TASK 802
		21-23003	21-51 TASK 827
		21-23011	21-51 TASK 811
		21-24001	21-51 TASK 806
		21-24101	21-51 TASK 817
		21-24301	21-51 TASK 829
		21-24303	21-51 TASK 831
		21-25501	21-61 TASK 883
		21-25502	21-61 TASK 883
		21-25506	21-61 TASK 883
		21-25507	21-61 TASK 883
		21-29429	21-61 TASK 812
		21-29433	21-61 TASK 838
		21-29629	21-61 TASK 838
		21-29633	21-61 TASK 838
		23-81004	23-91 TASK 804

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 021 41	PACK FCV L (EICAS STATUS)	(continued)	
		23-81006	23-91 TASK 806
		24-11787	24-32 TASK 817
		24-12051	24-32 TASK 819
		24-13814	24-33 TASK 817
		36-13001	36-13 TASK 810
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
215 021 42	PACK FCV R (EICAS STATUS)	21-23002	21-51 TASK 810
		21-23004	21-51 TASK 828
		21-23012	21-51 TASK 812
		21-24002	21-51 TASK 816
		21-24102	21-51 TASK 818
		21-24302	21-51 TASK 830
		21-24304	21-51 TASK 832
		21-25503	21-61 TASK 883
		21-25504	21-61 TASK 883
		21-25508	21-61 TASK 883
		21-25509	21-61 TASK 883
		21-29430	21-61 TASK 839
		21-29434	21-61 TASK 839
		21-29630	21-61 TASK 839
		21-29634	21-61 TASK 839
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-12051	24-32 TASK 819
		24-12056	24-32 TASK 820
		24-13814	24-33 TASK 817

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 021 42	PACK FCV R (EICAS STATUS)	(continued)	
		36-13002	36-13 TASK 811
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
215 031 41	PACK MODE L (EICAS ADVISORY)	21-21111	21-52 TASK 802
		21-24400	21-25 TASK 805
		21-24600	21-25 TASK 807
		21-24821	21-52 TASK 818
		21-24901	21-52 TASK 811
		21-24911	21-52 TASK 813
		21-25110	21-61 TASK 882
		21-25111	21-61 TASK 882
		21-29011	21-52 TASK 803
		21-29021	21-52 TASK 823
		21-29463	21-61 TASK 899
		21-29663	21-61 TASK 903
		21-50009	21-52 TASK 855
		21-50011	21-25 TASK 819
		21-50012	21-25 TASK 818
		21-50014	21-61 TASK 897
		21-50015	21-61 TASK 898
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11787	24-32 TASK 817
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804

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215 031 41	PACK MODE L (EICAS ADVISORY)	(continued)	
		24-11805	24-08 TASK 801
		24-11806	24-08 TASK 801
		24-18801	24-09 TASK 806
		24-78841	24-08 TASK 860
		24-78861	24-08 TASK 861
215 031 42	PACK MODE R (EICAS ADVISORY)	21-12035	21-25 TASK 820
		21-16205	21-25 TASK 823
		21-21112	21-52 TASK 821
		21-24500	21-25 TASK 806
		21-24700	21-25 TASK 808
		21-24822	21-52 TASK 818
		21-24902	21-52 TASK 835
		21-24912	21-52 TASK 841
		21-25212	21-61 TASK 882
		21-25213	21-61 TASK 882
		21-29012	21-52 TASK 822
		21-29022	21-52 TASK 824
		21-29468	21-61 TASK 902
		21-29668	21-61 TASK 906
		21-50016	21-52 TASK 856
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-12056	24-32 TASK 820
		24-12057	24-08 TASK 836
		24-12122	24-08 TASK 835
		24-12800	24-08 TASK 805
		24-12801	24-08 TASK 805
		24-12806	24-08 TASK 845
		24-12808	24-08 TASK 802
		24-12809	24-08 TASK 802
		24-12810	24-08 TASK 802
		24-12811	24-08 TASK 802
		24-18802	24-09 TASK 807
		24-78842	24-08 TASK 862
		24-78862	24-08 TASK 863

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 036 41	PACK ACM L (EICAS STATUS)	21-24821	21-52 TASK 818
215 036 42	PACK ACM R (EICAS STATUS)	21-24822	21-52 TASK 818
215 041 41	ECON COOL VALVE L (EICAS STATUS)	21-24901	21-52 TASK 811
		21-24911	21-52 TASK 813
		21-50009	21-52 TASK 855
		24-11787	24-32 TASK 817
215 041 42	ECON COOL VALVE R (EICAS STATUS)	21-24902	21-52 TASK 835
		21-24912	21-52 TASK 841
		21-50016	21-52 TASK 856
		24-12056	24-32 TASK 820
		24-12808	24-08 TASK 802
		24-12809	24-08 TASK 802
215 051 41	CMPRSR TEMP SENSOR L (EICAS STATUS)	21-23411	21-52 TASK 806
		21-23421	21-52 TASK 830
		21-23431	21-52 TASK 805
		21-23441	21-52 TASK 850
215 051 42	CMPRSR TEMP SENSOR R (EICAS STATUS)	21-23412	21-52 TASK 829
		21-23422	21-52 TASK 831
		21-23432	21-52 TASK 828
		21-23442	21-52 TASK 850
215 052 41	COND TEMP SENSOR L (EICAS STATUS)	21-23401	21-52 TASK 809
		21-29011	21-52 TASK 803
		21-29021	21-52 TASK 823
215 052 42	COND TEMP SENSOR R (EICAS STATUS)	21-23402	21-52 TASK 833
		21-29012	21-52 TASK 822
		21-29022	21-52 TASK 824
215 053 41	PACK OUT TEMP SNSR L (EICAS STATUS)	21-21001	21-52 TASK 838
		21-21101	21-52 TASK 801
		21-21111	21-52 TASK 802
215 053 42	PACK OUT TEMP SNSR R (EICAS STATUS)	21-21002	21-52 TASK 819
		21-21102	21-52 TASK 820
		21-21112	21-52 TASK 821
215 061 41	RAM AIR INLET DOOR L (EICAS STATUS)	21-23201	21-52 TASK 814
215 061 42	RAM AIR INLET DOOR R (EICAS STATUS)	21-23202	21-52 TASK 836
215 062 41	RAM AIR EXIT DOOR L (EICAS STATUS)	21-23301	21-52 TASK 815

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 062 42	RAM AIR EXIT DOOR R (EICAS STATUS)	21-23302	21-52 TASK 837
215 071 41	PACK FCV LWR L (EICAS STATUS)	21-23001	21-51 TASK 802
		21-23011	21-51 TASK 811
		21-24001	21-51 TASK 806
		21-24303	21-51 TASK 831
		21-25501	21-61 TASK 883
		21-25502	21-61 TASK 883
		21-25506	21-61 TASK 883
		21-25507	21-61 TASK 883
		21-29429	21-61 TASK 812
		21-29433	21-61 TASK 838
		21-29629	21-61 TASK 838
		21-29633	21-61 TASK 838
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11787	24-32 TASK 817
		24-12051	24-32 TASK 819
		24-13814	24-33 TASK 817
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
215 071 42	PACK FCV LWR R (EICAS STATUS)	21-23002	21-51 TASK 810
		21-23012	21-51 TASK 812
		21-24002	21-51 TASK 816
		21-24304	21-51 TASK 832
		21-25503	21-61 TASK 883
		21-25504	21-61 TASK 883
		21-25508	21-61 TASK 883
		21-25509	21-61 TASK 883

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215 071 42	PACK FCV LWR R (EICAS STATUS)	(continued)	
		21-29430	21-61 TASK 839
		21-29434	21-61 TASK 839
		21-29630	21-61 TASK 839
		21-29634	21-61 TASK 839
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-12051	24-32 TASK 819
		24-12056	24-32 TASK 820
		24-13814	24-33 TASK 817
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
215 072 41	PACK FCV UPR L (EICAS STATUS)	21-23001	21-51 TASK 802
		21-23011	21-51 TASK 811
		21-24101	21-51 TASK 817
		21-24301	21-51 TASK 829
		21-25501	21-61 TASK 883
		21-25502	21-61 TASK 883
		21-25506	21-61 TASK 883
		21-25507	21-61 TASK 883
		21-29429	21-61 TASK 812
		21-29433	21-61 TASK 838
		21-29629	21-61 TASK 838
		21-29633	21-61 TASK 838
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11787	24-32 TASK 817
		24-12051	24-32 TASK 819

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 072 41	PACK FCV UPR L (EICAS STATUS)	(continued)	
		24-13814	24-33 TASK 817
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
215 072 42	PACK FCV UPR R (EICAS STATUS)	21-23002	21-51 TASK 810
		21-23012	21-51 TASK 812
		21-24102	21-51 TASK 818
		21-24302	21-51 TASK 830
		21-25503	21-61 TASK 883
		21-25504	21-61 TASK 883
		21-25508	21-61 TASK 883
		21-25509	21-61 TASK 883
		21-29430	21-61 TASK 839
		21-29434	21-61 TASK 839
		21-29630	21-61 TASK 839
		21-29634	21-61 TASK 839
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-12051	24-32 TASK 819
		24-12056	24-32 TASK 820
		24-13814	24-33 TASK 817
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
215 072 42	PACK FCV UPR R (EICAS STATUS)	(continued) 36-19402 36-19601 36-19602	36-13 TASK 805 36-13 TASK 806 36-13 TASK 807
215 611 41	PACK L switch: OFF light does not come on when switch set to off.		21-51 TASK 825
215 611 42	PACK R switch: OFF light does not come on when switch set to off.		21-51 TASK 826
215 811 00	PACK FLOW MASS indications on Air Conditioning maintenance page: indications for left and right packs differ by more than 10 kg/min when both packs are operating.		21-51 TASK 833
216 001 41	CABIN TEMP CTRL L (EICAS STATUS)	21-22500 21-22501 21-25011 21-25012 21-25013 21-25014 21-25031 21-28801 21-28841 21-28861 21-29401 21-29450 21-29601 21-29650 23-81004 23-81006 24-11784 24-11785 31-54013 31-54014 31-54121 31-54122 31-58013 31-58014 31-58121	21-61 TASK 876 21-61 TASK 877 21-61 TASK 868 21-61 TASK 868 21-61 TASK 868 21-61 TASK 868 21-61 TASK 810 21-61 TASK 868 21-61 TASK 801 21-61 TASK 818 21-61 TASK 801 21-61 TASK 839 21-61 TASK 818 21-61 TASK 839 23-91 TASK 804 23-91 TASK 806 24-51 TASK 836 24-51 TASK 836 31-43 TASK 868 31-43 TASK 869 31-41 TASK 838 31-41 TASK 839 31-43 TASK 872 31-43 TASK 873 31-41 TASK 856

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216 001 41	CABIN TEMP CTRL L (EICAS STATUS)	(continued)	
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69403	31-42 TASK 826
		31-69404	31-42 TASK 826
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69603	31-42 TASK 858
		31-69604	31-42 TASK 858
216 001 42	CABIN TEMP CTRL R (EICAS STATUS)	21-22502	21-61 TASK 878
		21-22503	21-61 TASK 878
		21-25011	21-61 TASK 868
		21-25012	21-61 TASK 868
		21-25013	21-61 TASK 868
		21-25014	21-61 TASK 868
		21-25032	21-61 TASK 840
		21-28802	21-61 TASK 868
		21-28842	21-61 TASK 817
		21-28862	21-61 TASK 819
		21-29402	21-61 TASK 817
		21-29449	21-61 TASK 813
		21-29602	21-61 TASK 819
		21-29649	21-61 TASK 838
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-12125	24-51 TASK 841
		24-12126	24-51 TASK 841
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 001 42	CABIN TEMP CTRL R (EICAS STATUS)	(continued)	
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69405	31-42 TASK 826
		31-69406	31-42 TASK 826
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69605	31-42 TASK 858
		31-69606	31-42 TASK 858
216 031 41	TRIM AIR L (EICAS ADVISORY)	21-20001	21-61 TASK 804
		21-20002	21-61 TASK 841
		21-20004	21-61 TASK 841
		21-20006	21-61 TASK 841
		21-20017	21-98 TASK 801
		21-20018	21-98 TASK 801
		21-20019	21-98 TASK 801
		21-22301	21-61 TASK 854
		21-22302	21-61 TASK 856
		21-22304	21-61 TASK 860
		21-22306	21-61 TASK 864
		21-22319	21-98 TASK 801
		21-22401	21-61 TASK 855
		21-22402	21-61 TASK 857
		21-22404	21-61 TASK 861
		21-22406	21-61 TASK 865
		21-22419	21-98 TASK 801
		21-23015	21-51 TASK 811
		21-24201	21-62 TASK 802
		21-25011	21-61 TASK 868
		21-25013	21-61 TASK 868
		21-28060	21-61 TASK 880
		21-29469	21-61 TASK 815
		21-29473	21-61 TASK 838
		21-29669	21-61 TASK 838
		21-29673	21-61 TASK 838
		21-50013	21-61 TASK 896

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 031 41	TRIM AIR L (EICAS ADVISORY)	(continued)	
		23-41001	23-93 TASK 819
		23-41002	23-93 TASK 844
		23-42001	23-93 TASK 841
		23-42002	23-93 TASK 845
		23-47010	23-93 TASK 801
		23-47020	23-93 TASK 802
		23-48801	23-93 TASK 881
		23-48802	23-93 TASK 806
		23-48841	23-93 TASK 819
		23-48842	23-93 TASK 841
		23-48861	23-93 TASK 844
		23-48862	23-93 TASK 845
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878
		24-11787	24-32 TASK 817
		24-11805	24-08 TASK 801
		24-11806	24-08 TASK 801
216 031 42	TRIM AIR R (EICAS ADVISORY)	24-12056	24-32 TASK 820
		24-13815	24-61 TASK 806
		21-20003	21-61 TASK 842
		21-20005	21-61 TASK 842
		21-20007	21-61 TASK 842
		21-22303	21-61 TASK 858
		21-22305	21-61 TASK 862
		21-22307	21-61 TASK 866
		21-22403	21-61 TASK 859
		21-22405	21-61 TASK 863
		21-22407	21-61 TASK 867
		21-23016	21-51 TASK 812
		21-24202	21-62 TASK 807
		21-25012	21-61 TASK 868
		21-25014	21-61 TASK 868
		21-29470	21-61 TASK 839

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216 031 42	TRIM AIR R (EICAS ADVISORY)	(continued)	
		21-29474	21-61 TASK 839
		21-29670	21-61 TASK 839
		21-29674	21-61 TASK 839
		23-41001	23-93 TASK 819
		23-41002	23-93 TASK 844
		23-42001	23-93 TASK 841
		23-42002	23-93 TASK 845
		23-47010	23-93 TASK 801
		23-47020	23-93 TASK 802
		23-48801	23-93 TASK 881
		23-48802	23-93 TASK 806
		23-48841	23-93 TASK 819
		23-48842	23-93 TASK 841
		23-48861	23-93 TASK 844
		23-48862	23-93 TASK 845
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878
		24-12056	24-32 TASK 820
		24-13815	24-61 TASK 806
216 032 41	TRIM AIR L (EICAS STATUS)	21-20001	21-61 TASK 804
		21-20002	21-61 TASK 841
		21-20004	21-61 TASK 841
		21-20006	21-61 TASK 841
		21-22001	21-62 TASK 801
		21-22301	21-61 TASK 854
		21-22302	21-61 TASK 856
		21-22304	21-61 TASK 860
		21-22306	21-61 TASK 864
		21-22319	21-98 TASK 801
		21-22401	21-61 TASK 855
		21-22402	21-61 TASK 857
		21-22404	21-61 TASK 861
		21-22406	21-61 TASK 865

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216 032 41	TRIM AIR L (EICAS STATUS)	(continued)	
		21-22419	21-98 TASK 801
		21-23015	21-51 TASK 811
		21-23041	21-51 TASK 803
		21-24201	21-62 TASK 802
		21-24400	21-25 TASK 805
		21-24600	21-25 TASK 807
		21-25110	21-61 TASK 882
		21-25111	21-61 TASK 882
		21-28060	21-61 TASK 880
		21-29463	21-61 TASK 899
		21-29469	21-61 TASK 815
		21-29473	21-61 TASK 838
		21-29663	21-61 TASK 903
		21-29669	21-61 TASK 838
		21-29673	21-61 TASK 838
		21-50009	21-52 TASK 855
		21-50011	21-25 TASK 819
		21-50012	21-25 TASK 818
		21-50013	21-61 TASK 896
		21-50014	21-61 TASK 897
		21-50015	21-61 TASK 898
		23-41001	23-93 TASK 819
		23-41002	23-93 TASK 844
		23-41250	23-93 TASK 801
		23-41490	23-93 TASK 801
		23-41500	23-93 TASK 801
		23-41520	23-93 TASK 803
		23-41980	23-93 TASK 801
		23-41990	23-93 TASK 803
		23-42001	23-93 TASK 841
		23-42002	23-93 TASK 845
		23-42250	23-93 TASK 802
		23-42490	23-93 TASK 802
		23-42500	23-93 TASK 802
		23-42520	23-93 TASK 804

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216 032 41	TRIM AIR L (EICAS STATUS)	(continued)	
		23-42980	23-93 TASK 802
		23-42990	23-93 TASK 804
		23-43250	21-61 TASK 805
		23-43490	21-51 TASK 807
		23-43500	21-62 TASK 803
		23-43520	21-25 TASK 803
		23-43980	21-25 TASK 804
		23-43990	21-61 TASK 888
		23-45010	23-93 TASK 881
		23-46010	23-93 TASK 806
		23-47010	23-93 TASK 801
		23-47020	23-93 TASK 802
		23-48010	23-93 TASK 803
		23-48020	23-93 TASK 804
		23-48801	23-93 TASK 881
		23-48802	23-93 TASK 806
		23-48841	23-93 TASK 819
		23-48842	23-93 TASK 841
		23-48861	23-93 TASK 844
		23-48862	23-93 TASK 845
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878
		23-92010	23-93 TASK 879
		23-92020	23-93 TASK 880
		24-11787	24-32 TASK 817
		24-11790	24-08 TASK 833
		24-11793	24-08 TASK 834
		24-11795	24-08 TASK 804
		24-11796	24-08 TASK 804
		24-11805	24-08 TASK 801
		24-11806	24-08 TASK 801
		24-12056	24-32 TASK 820
		24-13815	24-61 TASK 806

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216 032 41	TRIM AIR L (EICAS STATUS)	(continued)	
		24-18801	24-09 TASK 806
		24-78841	24-08 TASK 860
		24-78861	24-08 TASK 861
		36-13001	36-13 TASK 810
		36-19401	36-13 TASK 804
		36-19601	36-13 TASK 806
216 032 42	TRIM AIR R (EICAS STATUS)	21-12035	21-25 TASK 820
		21-16205	21-25 TASK 823
		21-20003	21-61 TASK 842
		21-20005	21-61 TASK 842
		21-20007	21-61 TASK 842
		21-22002	21-62 TASK 806
		21-22303	21-61 TASK 858
		21-22305	21-61 TASK 862
		21-22307	21-61 TASK 866
		21-22403	21-61 TASK 859
		21-22405	21-61 TASK 863
		21-22407	21-61 TASK 867
		21-23016	21-51 TASK 812
		21-23042	21-51 TASK 813
		21-24202	21-62 TASK 807
		21-24500	21-25 TASK 806
		21-24700	21-25 TASK 808
		21-25212	21-61 TASK 882
		21-25213	21-61 TASK 882
		21-29468	21-61 TASK 902
		21-29470	21-61 TASK 839
		21-29474	21-61 TASK 839
		21-29668	21-61 TASK 906
		21-29670	21-61 TASK 839
		21-29674	21-61 TASK 839
		21-50016	21-52 TASK 856
		23-41001	23-93 TASK 819
		23-41002	23-93 TASK 844
		23-41250	23-93 TASK 801

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 032 42	TRIM AIR R (EICAS STATUS)	(continued)	
		23-41520	23-93 TASK 803
		23-41850	23-93 TASK 803
		23-41860	23-93 TASK 803
		23-41980	23-93 TASK 801
		23-41990	23-93 TASK 803
		23-42001	23-93 TASK 841
		23-42002	23-93 TASK 845
		23-42250	23-93 TASK 802
		23-42520	23-93 TASK 804
		23-42850	23-93 TASK 804
		23-42860	23-93 TASK 804
		23-42980	23-93 TASK 802
		23-42990	23-93 TASK 804
		23-43250	21-61 TASK 805
		23-43520	21-25 TASK 803
		23-43850	21-51 TASK 821
		23-43860	21-62 TASK 805
		23-43980	21-25 TASK 804
		23-43990	21-61 TASK 888
		23-45010	23-93 TASK 881
		23-46010	23-93 TASK 806
		23-47010	23-93 TASK 801
		23-47020	23-93 TASK 802
		23-48010	23-93 TASK 803
		23-48020	23-93 TASK 804
		23-48801	23-93 TASK 881
		23-48802	23-93 TASK 806
		23-48841	23-93 TASK 819
		23-48842	23-93 TASK 841
		23-48861	23-93 TASK 844
		23-48862	23-93 TASK 845
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 032 42	TRIM AIR R (EICAS STATUS)	(continued)	
		23-92010	23-93 TASK 879
		23-92020	23-93 TASK 880
		24-12056	24-32 TASK 820
		24-12057	24-08 TASK 836
		24-12122	24-08 TASK 835
		24-12800	24-08 TASK 805
		24-12801	24-08 TASK 805
		24-12806	24-08 TASK 845
		24-12808	24-08 TASK 802
		24-12809	24-08 TASK 802
		24-12810	24-08 TASK 802
		24-12811	24-08 TASK 802
		24-13815	24-61 TASK 806
		24-18802	24-09 TASK 807
		24-78842	24-08 TASK 862
		24-78862	24-08 TASK 863
		36-13002	36-13 TASK 811
		36-19402	36-13 TASK 805
		36-19602	36-13 TASK 807
216 041 41	TRIM AIR PRSOV L (EICAS STATUS)	21-24201	21-62 TASK 802
		21-25501	21-61 TASK 883
		21-25502	21-61 TASK 883
		21-25506	21-61 TASK 883
		21-25507	21-61 TASK 883
		21-29429	21-61 TASK 812
		21-29433	21-61 TASK 838
		21-29629	21-61 TASK 838
		21-29633	21-61 TASK 838
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-11787	24-32 TASK 817
		24-12051	24-32 TASK 819
		24-13814	24-33 TASK 817
		36-13001	36-13 TASK 810
		36-18801	36-13 TASK 803

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 041 41	TRIM AIR PRSOV L (EICAS STATUS)	(continued)	
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807
216 041 42	TRIM AIR PRSOV R (EICAS STATUS)	21-24202	21-62 TASK 807
		21-25503	21-61 TASK 883
		21-25504	21-61 TASK 883
		21-25508	21-61 TASK 883
		21-25509	21-61 TASK 883
		21-29430	21-61 TASK 839
		21-29434	21-61 TASK 839
		21-29630	21-61 TASK 839
		21-29634	21-61 TASK 839
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-12051	24-32 TASK 819
		24-12056	24-32 TASK 820
		24-13814	24-33 TASK 817
		36-13002	36-13 TASK 811
		36-18801	36-13 TASK 803
		36-18802	36-13 TASK 803
		36-18841	36-13 TASK 804
		36-18842	36-13 TASK 805
		36-18861	36-13 TASK 806
		36-18862	36-13 TASK 807
		36-19401	36-13 TASK 804
		36-19402	36-13 TASK 805
		36-19601	36-13 TASK 806
		36-19602	36-13 TASK 807

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 481 01	Maintenance memo shows on the MAT: CTC (LEFT CH 1).	21-21001	21-52 TASK 838
		21-21002	21-52 TASK 819
		21-21101	21-52 TASK 801
		21-21102	21-52 TASK 820
		21-22101	21-61 TASK 844
		21-22102	21-61 TASK 845
		21-22103	21-61 TASK 846
		21-22104	21-61 TASK 848
		21-22105	21-61 TASK 850
		21-22106	21-61 TASK 852
		21-22107	21-61 TASK 853
		21-22117	21-98 TASK 801
		21-22118	21-98 TASK 801
		21-22119	21-98 TASK 801
		21-22192	21-61 TASK 843
		21-22201	21-61 TASK 843
		21-22202	21-98 TASK 801
		21-22203	21-61 TASK 847
		21-22204	21-61 TASK 849
		21-22205	21-61 TASK 851
		21-22206	21-98 TASK 801
		21-22207	21-98 TASK 801
		21-22217	21-98 TASK 801
		21-22218	21-98 TASK 801
		21-22219	21-98 TASK 801
		21-22301	21-61 TASK 854
		21-22302	21-61 TASK 856
		21-22303	21-61 TASK 858
		21-22304	21-61 TASK 860
		21-22305	21-61 TASK 862
		21-22306	21-61 TASK 864
		21-22307	21-61 TASK 866
		21-22319	21-98 TASK 801
		21-22401	21-61 TASK 855
		21-22402	21-61 TASK 857

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 481 01	Maintenance memo shows on the MAT: CTC (LEFT CH 1).	(continued)	
		21-22403	21-61 TASK 859
		21-22404	21-61 TASK 861
		21-22405	21-61 TASK 863
		21-22406	21-61 TASK 865
		21-22407	21-61 TASK 867
		21-22419	21-98 TASK 801
		21-22801	21-51 TASK 801
		21-22802	21-51 TASK 809
		21-23001	21-51 TASK 802
		21-23002	21-51 TASK 810
		21-23011	21-51 TASK 811
		21-23012	21-51 TASK 812
		21-23013	21-51 TASK 811
		21-23014	21-51 TASK 812
		21-23041	21-51 TASK 803
		21-23042	21-51 TASK 813
		21-23101	21-52 TASK 808
		21-23102	21-52 TASK 839
		21-23411	21-52 TASK 806
		21-23412	21-52 TASK 829
		21-23421	21-52 TASK 830
		21-23422	21-52 TASK 831
		21-25011	21-61 TASK 868
		21-25012	21-61 TASK 868
		21-25013	21-61 TASK 868
		21-28011	21-52 TASK 804
		21-28012	21-52 TASK 825
		21-28021	21-52 TASK 826
		21-28022	21-52 TASK 827
		21-29011	21-52 TASK 803
		21-29012	21-52 TASK 822
		21-29021	21-52 TASK 823
		21-29022	21-52 TASK 824
		24-11787	24-32 TASK 817

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 481 02	Maintenance memo shows on the MAT: CTC (LEFT CH 2).	21-21001	21-52 TASK 838
		21-21002	21-52 TASK 819
		21-21101	21-52 TASK 801
		21-21102	21-52 TASK 820
		21-22101	21-61 TASK 844
		21-22102	21-61 TASK 845
		21-22103	21-61 TASK 846
		21-22104	21-61 TASK 848
		21-22105	21-61 TASK 850
		21-22106	21-61 TASK 852
		21-22107	21-61 TASK 853
		21-22117	21-98 TASK 801
		21-22118	21-98 TASK 801
		21-22119	21-98 TASK 801
		21-22192	21-61 TASK 843
		21-22201	21-61 TASK 843
		21-22202	21-98 TASK 801
		21-22203	21-61 TASK 847
		21-22204	21-61 TASK 849
		21-22205	21-61 TASK 851
		21-22206	21-98 TASK 801
		21-22207	21-98 TASK 801
		21-22217	21-98 TASK 801
		21-22218	21-98 TASK 801
		21-22219	21-98 TASK 801
		21-22301	21-61 TASK 854
		21-22302	21-61 TASK 856
		21-22303	21-61 TASK 858
		21-22304	21-61 TASK 860
		21-22305	21-61 TASK 862
		21-22306	21-61 TASK 864
		21-22307	21-61 TASK 866
		21-22319	21-98 TASK 801
		21-22401	21-61 TASK 855
		21-22402	21-61 TASK 857

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 481 02	Maintenance memo shows on the MAT: CTC (LEFT CH 2).	(continued)	
		21-22403	21-61 TASK 859
		21-22404	21-61 TASK 861
		21-22405	21-61 TASK 863
		21-22406	21-61 TASK 865
		21-22407	21-61 TASK 867
		21-22419	21-98 TASK 801
		21-22801	21-51 TASK 801
		21-22802	21-51 TASK 809
		21-23001	21-51 TASK 802
		21-23002	21-51 TASK 810
		21-23011	21-51 TASK 811
		21-23012	21-51 TASK 812
		21-23013	21-51 TASK 811
		21-23014	21-51 TASK 812
		21-23041	21-51 TASK 803
		21-23042	21-51 TASK 813
		21-23101	21-52 TASK 808
		21-23102	21-52 TASK 839
		21-23411	21-52 TASK 806
		21-23412	21-52 TASK 829
		21-23421	21-52 TASK 830
		21-23422	21-52 TASK 831
		21-25011	21-61 TASK 868
		21-25012	21-61 TASK 868
		21-25013	21-61 TASK 868
		21-28011	21-52 TASK 804
		21-28012	21-52 TASK 825
		21-28021	21-52 TASK 826
		21-28022	21-52 TASK 827
		21-29011	21-52 TASK 803
		21-29012	21-52 TASK 822
		21-29021	21-52 TASK 823
		21-29022	21-52 TASK 824
		24-11787	24-32 TASK 817

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 482 01	Maintenance memo shows on the MAT: CTC (RIGHT CH 1).	21-21001	21-52 TASK 838
		21-21002	21-52 TASK 819
		21-21101	21-52 TASK 801
		21-21102	21-52 TASK 820
		21-22101	21-61 TASK 844
		21-22102	21-61 TASK 845
		21-22103	21-61 TASK 846
		21-22104	21-61 TASK 848
		21-22105	21-61 TASK 850
		21-22106	21-61 TASK 852
		21-22107	21-61 TASK 853
		21-22117	21-98 TASK 801
		21-22118	21-98 TASK 801
		21-22119	21-98 TASK 801
		21-22120	21-61 TASK 891
		21-22192	21-61 TASK 843
		21-22201	21-61 TASK 843
		21-22202	21-98 TASK 801
		21-22203	21-61 TASK 847
		21-22204	21-61 TASK 849
		21-22205	21-61 TASK 851
		21-22206	21-98 TASK 801
		21-22207	21-98 TASK 801
		21-22217	21-98 TASK 801
		21-22218	21-98 TASK 801
		21-22219	21-98 TASK 801
		21-22220	21-61 TASK 892
		21-22301	21-61 TASK 854
		21-22302	21-61 TASK 856
		21-22303	21-61 TASK 858
		21-22304	21-61 TASK 860
		21-22305	21-61 TASK 862
		21-22306	21-61 TASK 864
		21-22307	21-61 TASK 866
		21-22319	21-98 TASK 801

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 482 01	Maintenance memo shows on the MAT: CTC (RIGHT CH 1).	(continued)	
		21-22320	21-61 TASK 889
		21-22401	21-61 TASK 855
		21-22402	21-61 TASK 857
		21-22403	21-61 TASK 859
		21-22404	21-61 TASK 861
		21-22405	21-61 TASK 863
		21-22406	21-61 TASK 865
		21-22407	21-61 TASK 867
		21-22419	21-98 TASK 801
		21-22420	21-61 TASK 890
		21-22801	21-51 TASK 801
		21-22802	21-51 TASK 809
		21-23001	21-51 TASK 802
		21-23002	21-51 TASK 810
		21-23011	21-51 TASK 811
		21-23012	21-51 TASK 812
		21-23013	21-51 TASK 811
		21-23014	21-51 TASK 812
		21-23041	21-51 TASK 803
		21-23042	21-51 TASK 813
		21-23101	21-52 TASK 808
		21-23102	21-52 TASK 839
		21-23411	21-52 TASK 806
		21-23412	21-52 TASK 829
		21-23421	21-52 TASK 830
		21-23422	21-52 TASK 831
		21-25011	21-61 TASK 868
		21-25012	21-61 TASK 868
		21-25014	21-61 TASK 868
		21-28011	21-52 TASK 804
		21-28012	21-52 TASK 825
		21-28021	21-52 TASK 826
		21-28022	21-52 TASK 827
		21-29011	21-52 TASK 803

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 482 01	Maintenance memo shows on the MAT: CTC (RIGHT CH 1).	(continued)	
		21-29012	21-52 TASK 822
		21-29021	21-52 TASK 823
		21-29022	21-52 TASK 824
		24-12056	24-32 TASK 820
216 482 02	Maintenance memo shows on the MAT: CTC (RIGHT CH 2).	21-21001	21-52 TASK 838
		21-21002	21-52 TASK 819
		21-21101	21-52 TASK 801
		21-21102	21-52 TASK 820
		21-22101	21-61 TASK 844
		21-22102	21-61 TASK 845
		21-22103	21-61 TASK 846
		21-22104	21-61 TASK 848
		21-22105	21-61 TASK 850
		21-22106	21-61 TASK 852
		21-22107	21-61 TASK 853
		21-22117	21-98 TASK 801
		21-22118	21-98 TASK 801
		21-22119	21-98 TASK 801
		21-22120	21-61 TASK 891
		21-22192	21-61 TASK 843
		21-22201	21-61 TASK 843
		21-22202	21-98 TASK 801
		21-22203	21-61 TASK 847
		21-22204	21-61 TASK 849
		21-22205	21-61 TASK 851
		21-22206	21-98 TASK 801
		21-22207	21-98 TASK 801
		21-22217	21-98 TASK 801
		21-22218	21-98 TASK 801
		21-22219	21-98 TASK 801
		21-22220	21-61 TASK 892
		21-22301	21-61 TASK 854
		21-22302	21-61 TASK 856

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 482 02	Maintenance memo shows on the MAT: CTC (RIGHT CH 2).	(continued)	
		21-22303	21-61 TASK 858
		21-22304	21-61 TASK 860
		21-22305	21-61 TASK 862
		21-22306	21-61 TASK 864
		21-22307	21-61 TASK 866
		21-22319	21-98 TASK 801
		21-22320	21-61 TASK 889
		21-22401	21-61 TASK 855
		21-22402	21-61 TASK 857
		21-22403	21-61 TASK 859
		21-22404	21-61 TASK 861
		21-22405	21-61 TASK 863
		21-22406	21-61 TASK 865
		21-22407	21-61 TASK 867
		21-22419	21-98 TASK 801
		21-22420	21-61 TASK 890
		21-22801	21-51 TASK 801
		21-22802	21-51 TASK 809
		21-23001	21-51 TASK 802
		21-23002	21-51 TASK 810
		21-23011	21-51 TASK 811
		21-23012	21-51 TASK 812
		21-23013	21-51 TASK 811
		21-23014	21-51 TASK 812
		21-23041	21-51 TASK 803
		21-23042	21-51 TASK 813
		21-23101	21-52 TASK 808
		21-23102	21-52 TASK 839
		21-23411	21-52 TASK 806
		21-23412	21-52 TASK 829
		21-23421	21-52 TASK 830
		21-23422	21-52 TASK 831
		21-25011	21-61 TASK 868
		21-25012	21-61 TASK 868

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
216 482 02	Maintenance memo shows on the MAT: CTC (RIGHT CH 2).	(continued) 21-25014 21-28011 21-28012 21-28021 21-28022 21-29011 21-29012 21-29021 21-29022 24-12056	 21-61 TASK 868 21-52 TASK 804 21-52 TASK 825 21-52 TASK 826 21-52 TASK 827 21-52 TASK 803 21-52 TASK 822 21-52 TASK 823 21-52 TASK 824 24-32 TASK 820
216 511 00	CTC-related ground test on MAT: CTC-related test prevented because of recirc fan problem.		21-25 TASK 816
216 512 00	CTC-related ground test on MAT: CTC-related test prevented because of pack problem.		21-52 TASK 846
216 612 00	Air synoptic: target temperature indication is blank - F/D.		21-61 TASK 804
216 613 01	Air synoptic: target temperature indication is blank - zone A.		21-61 TASK 841
216 613 02	Air synoptic: target temperature indication is blank - zone B.		21-61 TASK 842
216 613 03	Air synoptic: target temperature indication is blank - zone C.		21-61 TASK 841
216 613 04	Air synoptic: target temperature indication is blank - zone D.		21-61 TASK 842
216 613 05	Air synoptic: target temperature indication is blank - zone E.		21-61 TASK 841
216 613 06	Air synoptic: target temperature indication is blank - zone F.		21-61 TASK 842
216 614 00	Air synoptic: target temperature indication is blank - cargo forward zone.		21-61 TASK 887

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-11013	Bulk Cargo Ventilation Fan does not follow command (on or off) or is overheated.	21-26 TASK 822
21-11024	Relay (CHILLER EXH CRWN S/O VLV) in P110 is not in commanded position.	21-26 TASK 818
21-11025	Relay (CHILLER EXH LOWER S/O VLV) in P110 is not in commanded position.	21-26 TASK 820
21-11026	Chiller Boost Fan does not follow command (on or off) or is overheated.	21-26 TASK 817
21-11043	Lavatory/Galley Ventilation Fan (left) does not follow command (on or off) or is overheated.	21-26 TASK 829
21-11044	Lavatory/Galley Ventilation Fan (right) does not follow command (on or off) or is overheated.	21-26 TASK 830
21-11113	Relay (BULK CGO VENT FAN) in P210 is not in commanded position.	21-26 TASK 823
21-11122	Relay (CHILLER BOOST FAN) in P210 is not in commanded position.	21-26 TASK 824
21-11143	Contactor (LAV/GALLEY FAN L) in P100 is not in commanded position.	21-26 TASK 825
21-11144	Contactor (LAV/GALLEY FAN R) in P200 is not in commanded position.	21-26 TASK 826
21-12011	Cargo Compartment Temp Sensor (aft) signal is out of range.	21-44 TASK 801
21-12012	Cargo Compartment Temp Sensor (bulk) signal is out of range.	21-44 TASK 808
21-12013	Cargo Compartment Temp Sensor (forward) signal is out of range.	21-43 TASK 803
21-12014	Relay (Aft Cargo Overheat) in P39 is latched.	21-44 TASK 817
21-12015	Relay (Bulk Cargo Overheat) in P39 is latched.	21-44 TASK 818
21-12021	Cargo Heat Shutoff Valve (aft) is not in commanded position.	21-44 TASK 802
21-12022	Cargo Heat Shutoff Valve (bulk) is not in commanded position.	21-44 TASK 809
21-12031	Cargo Heat Temp Control Valve (aft) is not in commanded position.	21-44 TASK 804
21-12032	Cargo Heat Temp Control Valve (bulk) is not in commanded position.	21-44 TASK 810
21-12035	Relay (AFT UPR RECIRC FAN) in P210 is not in commanded position.	21-25 TASK 820
21-12123	Relay (BULK CGO HT SOV) in P210 is not in commanded position.	21-44 TASK 814
21-12133	Relay (BULK CGO HT TCV) in P210 is not in commanded position.	21-44 TASK 816
21-12135	Relay (IFE Seat switch) in P210 is not in commanded position.	21-27 TASK 885

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21-12136	Relay (GND SVCE SEC 1) in P210 is not in commanded position.	21-27 TASK 887
21-12139	Relay (GND SVCE SEC 2) in P210 is not in commanded position.	21-27 TASK 889
21-12140	Relay (CABIN/UTILSwitch) in P210 is not in commanded position.	21-27 TASK 891
21-13013	Door Area Heater (left 1) does not follow command (on or off).	21-45 TASK 833
21-13014	Door Area Heater (right 1) does not follow command (on or off).	21-45 TASK 834
21-13021	Door Area Heater (left 2) does not follow command (on or off).	21-45 TASK 810
21-13023	Door Area Heater (right 2) does not follow command (on or off).	21-45 TASK 835
21-13024	Door Area Heater (left 2) does not follow command (on or off).	21-45 TASK 853
21-13053	Relay (FWD CARGO HEAT) in P210 is not in commanded position.	21-43 TASK 805
21-13054	Cargo Heater (forward) does not follow command (on or off).	21-43 TASK 804
21-13073	Door Area Heater (left 4) does not follow command (on or off).	21-45 TASK 838
21-13074	Door Area Heater (right 4) does not follow command (on or off).	21-45 TASK 839
21-13083	Relay (L DR 3,4,5 HEAT) is not in commanded position.	21-45 TASK 831
21-13084	Relay (R DR 3, 4, 5 HEAT) in P210 is not in commanded position.	21-45 TASK 832
21-13113	Relay (DR HEAT R1 & R2) in P210 is not in commanded position.	21-45 TASK 830
21-13153	Relay (F/O FT & SHLDR HTR) in P210 is not in commanded position.	21-45 TASK 846
21-13174	Relay (AFT CGO HT SOV) in P110 is not in commanded position.	21-44 TASK 813
21-13175	Relay (AFT CGO HT TCV) in P110 is not in commanded position.	21-44 TASK 815
21-13176	Relay (DR HEAT L1 & L2) in P110 is not in commanded position.	21-45 TASK 829
21-13177	Relay (CAPT FT & SHLDR HTR) in P110 is not in commanded position.	21-45 TASK 845
21-13178	Relay (FWD GALY HT) in P110 is not in commanded position.	21-45 TASK 842
21-13179	Relay (AFT GALY HT) in P110 is not in commanded position.	21-45 TASK 843
21-13180	Relay (AFT GALY HTR 2) in P110 is not in commanded position.	21-45 TASK 844
21-13333	Door Area Heater (left 5) does not follow command (on or off).	21-45 TASK 840
21-13334	Door Area Heater (right 5) does not follow command (on or off).	21-45 TASK 841
21-13343	Door Area Heater (left 3) does not follow command (on or off).	21-45 TASK 836
21-13344	Door Area Heater (right 3) does not follow command (on or off).	21-45 TASK 837

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-14011	Equip Cooling Controller (left) is failed.	21-27 TASK 833
21-14012	Equip Cooling Controller (right) is failed.	21-27 TASK 834
21-14023	Equip Cooling Supply Fan (left) does not follow command (on or off) or is overheated.	21-27 TASK 880
21-14024	Equip Cooling Supply Fan (right) does not follow command (on or off) or is overheated.	21-27 TASK 881
21-14031	Equip Cooling Override Valve motor does not follow command.	21-27 TASK 832
21-14041	Equip Cooling Low Flow Sensor (Equip Bay) signal is out of range.	21-27 TASK 802
21-14042	Equip Cooling Low Flow Sensor (F/D) signal is out of range.	21-27 TASK 819
21-14051	Equip Cooling Duct Pressure Sensor (E4) signal is out of range.	21-27 TASK 801
21-14052	Equip Cooling Duct Pressure Sensor (E5) signal is out of range.	21-27 TASK 818
21-14061	Equip Cooling Duct Pressure Sensor (F/D) signal is out of range.	21-27 TASK 801
21-14062	Equip Cooling Duct Pressure Sensor (VSCF) signal is out of range.	21-27 TASK 818
21-14073	Equip Cooling Supply Fan Contactor (left) is not in commanded position.	21-27 TASK 870
21-14074	Equip Cooling Supply Fan ELCU (right) is not in commanded position.	21-27 TASK 871
21-14081	Equip Cooling Supply Air temperature is high.	21-27 TASK 821
21-14091	Equip Cooling Ovrd Vlv Motor Select Relay is not in commanded position.	21-27 TASK 803
21-14101	Equip Cooling Ovrd Vlv L Motor Relay is not in commanded position.	21-27 TASK 804
21-14102	Equip Cooling Ovrd Vlv R Motor Relay is not in commanded position.	21-27 TASK 820
21-14111	E4 Duct has low air pressure.	21-27 TASK 811
21-14112	E5 Duct has low air pressure.	21-27 TASK 812
21-14121	F/D Duct has low air pressure.	21-27 TASK 813
21-14122	VSCF Duct has low air pressure.	21-27 TASK 810
21-14131	Equipment Cooling Supply Airflow is low.	21-27 TASK 822
21-14132	Flight Deck Equip Cooling Airflow is low.	21-27 TASK 823
21-15012	Equip Cooling Ventilation Fan does not follow command (on or off) or is overheated.	21-27 TASK 868
21-15021	Forward Cargo Heat Valve is not in commanded position.	21-27 TASK 815
21-15031	Equip Cooling Vent Valve is not in commanded position.	21-27 TASK 816

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21-15130	Contactora (EQPT CLG VENT FAN) in P100 is not in commanded position.	21-27 TASK 867
21-15132	Relay (EE COOLING FWD CGO HT VLV CNTL) in P110 is not in commanded position.	21-27 TASK 864
21-15133	Relay (EE COOLING VENT CNTL) in P110 is not in commanded position.	21-27 TASK 865
21-15135	P100 Power Panel Controller EQPT CLG vent function is disabled.	21-27 TASK 877
21-15136	P100 Power Panel Controller EQPT CLG supply fan L function is disabled.	21-27 TASK 878
21-15137	P100 Power Panel Controller EQPT CLG supply fan R function is disabled.	21-27 TASK 879
21-16013	Equip Cooling SATCOM Bkup Fan (left) does not follow command (on or off) or is overheated.	21-27 TASK 869
21-16014	Equip Cooling SATCOM Bkup Fan (right) does not follow command (on or off) or is overheated.	21-27 TASK 883
21-16121	Forward Cargo A/C Shutoff Valve is not in commanded position.	21-28 TASK 801
21-16131	Equipment Cooling Inboard Valve is not in commanded position.	21-27 TASK 861
21-16141	Equipment Cooling Divert Valve is not in commanded position.	21-27 TASK 859
21-16152	Forward Cargo Exhaust Fan does not follow command (on or off) or is overheated.	21-26 TASK 834
21-16172	Relay (EQUIP INBOARD VALVE) in P210 is not in commanded position.	21-27 TASK 876
21-16182	Relay (EQUIP DIVERT VALVE) in P210 is not in commanded position.	21-27 TASK 875
21-16192	Relay (CARGO A/C SOV) in P210 is not in commanded position.	21-28 TASK 803
21-16203	Contactora (R LWR RECIRC FAN) in P200 is not in commanded position.	21-25 TASK 822
21-16205*	P200 Power Panel Controller R LWR RECIRC fan function is disabled.	21-25 TASK 823
21-16301	IFE Equip Cooling Fan does not follow command (on or off) or is overheated.	21-27 TASK 856
21-16331	IFE Cooling Smoke Detector signal does not follow test command.	21-27 TASK 858
21-16341	IFE Equip Cooling and IFE equipment were shut down due to smoke signal.	21-27 TASK 858

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21-16392	Relay (FWD CGO EXHAUST FAN) in P110 is not in commanded position.	21-26 TASK 833
21-16393	Relay (L SATCOM BACKUP COOLING FAN) P110 is not in commanded position.	21-27 TASK 866
21-16394	Relay (IFE CLG FAN) in P110 is not in commanded position.	21-27 TASK 874
21-16395	Relay (IFE CLG OVBD S/O VLV) in P110 is not in commanded position.	21-27 TASK 872
21-16396	Relay (IFE CLG MIX MNFLD S/O VLV) in P210 is not in commanded position.	21-27 TASK 873
21-17011	Equip Cooling Controller (left) signals are invalid.	21-27 TASK 836
21-17012	Equip Cooling Controller (right) signals are invalid.	21-27 TASK 837
21-17021	ECSMC (left) has no input from Equip Cooling Controller (left) on serial bus.	21-27 TASK 842
21-17022	ECSMC (right) has no input from Equip Cooling Controller (right) on serial bus.	21-27 TASK 843
21-17031	Equip Cooling Controller (left) has no output on any bus.	21-27 TASK 838
21-17032	Equip Cooling Controller (right) has no output on any bus.	21-27 TASK 839
21-17111	Low Flow signals from Equip Cooling Controller (left channel A) and ECSMC (left) do not agree.	21-27 TASK 846
21-17112	Low Flow signals from Equip Cooling Controller (right channel A) and ECSMC (right) do not agree.	21-27 TASK 847
21-17121	Low Flow signals from Equip Cooling Controller (left channel B) and ECSMC (left) do not agree.	21-27 TASK 846
21-17122	Low Flow signals from Equip Cooling Controller (right channel B) and ECSMC (right) do not agree.	21-27 TASK 847
21-17131	Low Flow signals from Equip Cooling Controller (left) and ECSMC (left) do not agree.	21-27 TASK 845
21-17132	Low Flow signals from Equip Cooling Controller (right) and ECSMC (right) do not agree.	21-27 TASK 844
21-17211	PSEU nose gear not compressed signals from Equip Cooling Controller (left channel A) and ECSMC (left) do not agree.	21-27 TASK 849
21-17212	PSEU nose gear not compressed signals from Equip Cooling Controller (right channel A) and ECSMC (right) do not agree.	21-27 TASK 851
21-17221	PSEU nose gear not compressed signals from Equip Cooling Controller (left channel B) and ECSMC (left) do not agree.	21-27 TASK 849
21-17222	PSEU nose gear not compressed signals from Equip Cooling Controller (right channel B) and ECSMC (right) do not agree.	21-27 TASK 851
21-17231	PSEU nose gear not compressed signals from Equip Cooling Controller (left) and ECSMC (left) do not agree.	21-27 TASK 848

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-17232	PSEU nose gear not compressed signals from Equip Cooling Controller (right) and ECSMC (right) do not agree.	21-27 TASK 850
21-17311	Equip Cooling Controller (left) has false takeover fault.	21-27 TASK 836
21-17312	Equip Cooling Controller (right) has false takeover fault.	21-27 TASK 837
21-17321	Equip Cooling Controller (left) has a fault.	21-27 TASK 836
21-17322	Equip Cooling Controller (right) has a fault.	21-27 TASK 837
21-17411	Equip Cooling Controller (right) has no input from Equip Cooling Controller (left) on serial bus.	21-27 TASK 841
21-17412	Equip Cooling Controller (left) has no input from Equip Cooling Controller (right) on serial bus.	21-27 TASK 840
21-17421	Equip Cooling Controller (left) has no input from Equip Cooling Controller (right) on serial bus.	21-27 TASK 840
21-17422	Equip Cooling Controller (right) has no input from Equip Cooling Controller (left) on serial bus.	21-27 TASK 841
21-17511	Equip Cooling Controller (left) does not follow ECSMC (left) commands.	21-27 TASK 836
21-17512	Equip Cooling Controller (right) does not follow ECSMC (right) commands.	21-27 TASK 837
21-18111	Signals from Air/Ground System and PSEU 1 do not agree.	21-27 TASK 826
21-18121	Signals from Air/Ground System and PSEU 2 do not agree.	21-27 TASK 827
21-18891	ECSMC (left) has no output on ECS ARINC 429 Bus.	21-00 TASK 806
21-18892	ECSMC (right) has no output on ECS ARINC 429 Bus.	21-00 TASK 804
21-19903	ECSMC (left) has no input from ARINC Signal Gateway (left), LSCF on ASG Global Bus.	21-00 TASK 805
21-19904	ECSMC (right) has no input from ARINC Signal Gateway (left), RSCF on ASG Global Bus.	21-00 TASK 802
21-19905	ECSMC (left) has no input from ARINC Signal Gateway (right), LSCF on ASG Global Bus.	21-00 TASK 801
21-19906	ECSMC (right) has no input from ARINC Signal Gateway (right), RSCF on ASG Global Bus.	21-00 TASK 803
21-20001	Zone Trim Modulating Valve for Flight Deck motor is not in commanded position.	21-61 TASK 804
21-20002	Zone Trim Modulating Valve for Zone A motor is not in commanded position.	21-61 TASK 841
21-20003	Zone Trim Modulating Valve for Zone B motor is not in commanded position.	21-61 TASK 842
21-20004	Zone Trim Modulating Valve for Zone C motor is not in commanded position.	21-61 TASK 841

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-20005	Zone Trim Modulating Valve for Zone D motor is not in commanded position.	21-61 TASK 842
21-20006	Zone Trim Modulating Valve for Zone E motor is not in commanded position.	21-61 TASK 841
21-20007	Zone Trim Modulating Valve for Zone F motor is not in commanded position.	21-61 TASK 842
21-20017	Zone Trim Modulating Valve for Crew Rest 1 motor is not in commanded position.	21-98 TASK 801
21-20018	Zone Trim Modulating Valve for Crew Rest 2 motor is not in commanded position.	21-98 TASK 801
21-20019	Zone Trim Modulating Valve for Crew Rest 3 motor is not in commanded position.	21-98 TASK 801
21-20020	Zone Trim Modulating Valve for Fwd Cargo motor is not in commanded position.	21-61 TASK 887
21-21001	Turbine Inlet Temperature Sensor (L Pack) signal is out of range.	21-52 TASK 838
21-21002	Turbine Inlet Temperature Sensor (R Pack) signal is out of range.	21-52 TASK 819
21-21101	Pack Discharge Temp Sensor (L Pack, CTC) signal is out of range.	21-52 TASK 801
21-21102	Pack Discharge Temp Sensor (R Pack, CTC) signal is out of range.	21-52 TASK 820
21-21111	Pack Disch Temp Sensor (L Pack, ASCPC) signal is out of range.	21-52 TASK 802
21-21112	Pack Disch Temp Sensor (R Pack, ASCPC) signal is out of range.	21-52 TASK 821
21-21155	Main Deck Crew Rest Exhaust Valve is not in commanded position.	21-98 TASK 801
21-21191	Air Conditioning Pack (Left) discharge temperature is too high.	21-52 TASK 816
21-21192	Air Conditioning Pack (Right) discharge temperature is too high.	21-52 TASK 842
21-22001	Trim Air Pressure Sensor (Left) signal is out of range.	21-62 TASK 801
21-22002	Trim Air Pressure Sensor (Right) signal is out of range.	21-62 TASK 806
21-22101	Zone Air Temperature Snsr 1 (Flight Deck) signal is out of range.	21-61 TASK 844
21-22102	Zone Air Temperature Sensor 1 (Zone A) signal is out of range.	21-61 TASK 845
21-22103	Zone Air Temperature Sensor 1 (Zone B) signal is out of range.	21-61 TASK 846
21-22104	Zone Air Temperature Sensor 1 (Zone C) signal is out of range.	21-61 TASK 848
21-22105	Zone Air Temperature Sensor 1 (Zone D) signal is out of range.	21-61 TASK 850

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21-22106	Zone Air Temperature Sensor 1 (Zone E) signal is out of range.	21-61 TASK 852
21-22107	Zone Air Temperature Sensor 1 (Zone F) signal is out of range.	21-61 TASK 853
21-22117	Zone Air Temperature Snsr 1 (Crew Rest 1) signal is out of range.	21-98 TASK 801
21-22118	Zone Air Temperature Snsr 1 (Crew Rest 2) signal is out of range.	21-98 TASK 801
21-22119	Zone Air Temperature Snsr 1 (Crew Rest 3) signal is out of range.	21-98 TASK 801
21-22120	Zone Air Temperature Sensor 1 (Fwd Cargo) signal is out of range.	21-61 TASK 891
21-22192	Zone Air Temp Snsr for Flight Deck (R CTC) signal is out of range.	21-61 TASK 843
21-22201	Zone Air Temperature Snsr 2 (Flight Deck) signal is out of range.	21-61 TASK 843
21-22202	Zone Air Temperature Sensor 2 (Zone A) signal is out of range.	21-98 TASK 801
21-22203	Zone Air Temperature Sensor 2 (Zone B) signal is out of range.	21-61 TASK 847
21-22204	Zone Air Temperature Sensor 2 (Zone C) signal is out of range.	21-61 TASK 849
21-22205	Zone Air Temperature Sensor 2 (Zone D) signal is out of range.	21-61 TASK 851
21-22206	Zone Air Temperature Sensor 2 (Zone E) signal is out of range.	21-98 TASK 801
21-22207	Zone Air Temperature Sensor 2 (Zone F) signal is out of range.	21-98 TASK 801
21-22217	Zone Air Temperature Snsr 2 (Crew Rest 1) signal is out of range.	21-98 TASK 801
21-22218	Zone Air Temperature Snsr 2 (Crew Rest 2) signal is out of range.	21-98 TASK 801
21-22219	Zone Air Temperature Snsr 2 (Crew Rest 3) signal is out of range.	21-98 TASK 801
21-22220	Zone Air Temperature Sensor 2 (Fwd Cargo) signal is out of range.	21-61 TASK 892
21-22301	Zone Duct Temperature Snsr 1 (Flight Deck) signal is out of range.	21-61 TASK 854
21-22302	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 1 (Zone A) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 1 (Zone A) signal is out of range.	21-61 TASK 856

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21-22303	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 1 (Zone B) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 1 (Zone B) signal is out of range.	21-61 TASK 858
21-22304	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 1 (Zone C) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 1 (Zone C) signal is out of range.	21-61 TASK 860
21-22305	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 1 (Zone D) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 1 (Zone D) signal is out of range.	21-61 TASK 862
21-22306	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 1 (Zone E) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 1 (Zone E) signal is out of range.	21-61 TASK 864
21-22307	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 1 (Zone F) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 1 (Zone F) signal is out of range.	21-61 TASK 866

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21-22319	Zone Duct Temperature Snr 1 (OHAR) signal is out of range.	21-98 TASK 801
21-22320	Zone Duct Temperature Sensor 1 (Fwd Cargo) signal is out of range.	21-61 TASK 889
21-22400	Zone Duct Temperature (Flight Deck) signals from channel 1 and channel 2 do not agree.	21-61 TASK 886
21-22401	Zone Duct Temperature Snr 2 (Flight Deck) signal is out of range.	21-61 TASK 855
21-22402	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 2 (Zone A) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 2 (Zone A) signal is out of range.	21-61 TASK 857
21-22403	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 2 (Zone B) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 2 (Zone B) signal is out of range.	21-61 TASK 859
21-22404	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 2 (Zone C) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 2 (Zone C) signal is out of range.	21-61 TASK 861
21-22405	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 2 (Zone D) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 2 (Zone D) signal is out of range.	21-61 TASK 863

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21-22406	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 2 (Zone E) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 2 (Zone E) signal is out of range.	21-61 TASK 865
21-22407	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Zone Duct Temperature Sensor 2 (Zone F) signal is out of range. AIMS-2, CMCF LDI 3114-BCG-00W-16; Zone Duct Temperature Sensor/CH 2 (Zone F) signal is out of range.	21-61 TASK 867
21-22419	Zone Duct Temperature Snsr 2 (OHAR) signal is out of range.	21-98 TASK 801
21-22420	Zone Duct Temperature Sensor 2 (Fwd Cargo) signal is out of range.	21-61 TASK 890
21-22500	Cabin Temperature Controller (L Chan1) has an ARINC 629 fault..	21-61 TASK 876
21-22501	Cabin Temperature Controller (L Chan2) has an ARINC 629 fault..	21-61 TASK 877
21-22502	Cabin Temperature Controller (R Chan1) has an ARINC 629 fault..	21-61 TASK 878
21-22503	Cabin Temperature Controller (R Chan2) has an ARINC 629 fault..	21-61 TASK 878
21-22801	Pri Heat Exchanger Inlet Temp Snsr (L Pack) signal is out of range.	21-51 TASK 801
21-22802	Pri Heat Exchanger Inlet Temp Snsr (R Pack) signal is out of range.	21-51 TASK 809
21-22901	Pri Heat Exchanger Outlet Temp Snsr (L Pack) signal is out of range.	21-52 TASK 807
21-22902	Pri Heat Exchanger Outlet Temp Snsr (R Pack) signal is out of range.	21-52 TASK 832
21-23001	Diff Press Sensor (L Flow Sensor, CTC) signal is out of range.	21-51 TASK 802
21-23002	Diff Press Sensor (R Flow Sensor, CTC) signal is out of range.	21-51 TASK 810
21-23003	Left Pack Flow Diff Press Sensor signals from Cabin Temperature Controller (L) and Air Supply & Cabin Pressure Controller (L) do not agree.	21-51 TASK 827

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-23004	Right Pack Flow Diff Press Sensor signals from Cabin Temperature Controller (R) and Air Supply & Cabin Pressure Controller (R) do not agree.	21-51 TASK 828
21-23011	FCV Inlet Delta Pressure Sensor 1 signal is out of range or has no power.	21-51 TASK 811
21-23012	FCV Inlet Delta Pressure Sensor 1 signal is out of range or has no power.	21-51 TASK 812
21-23013	FCV Inlet Pressure Sensor signal is out of range or has no power.	21-51 TASK 811
21-23014	FCV Inlet Pressure Sensor signal is out of range or has no power.	21-51 TASK 812
21-23015	Trim Air Pressure Sensor (Left) signal is out of range or has no power.	21-51 TASK 811
21-23016	Trim Air Pressure Sensor (Right) signal is out of range or has no power.	21-51 TASK 812
21-23040	Flow control could not be transferred between upper and lower Flow Control Valves. Test could not be completed. Flow Control Valve operation has not been fully tested..	21-51 TASK 822
21-23041	Pressure Sensor (L Flow Sensor) signal is out of range.	21-51 TASK 803
21-23042	Pressure Sensor (R Flow Sensor) signal is out of range.	21-51 TASK 813
21-23050	Economy cooling valve function could not be tested..	21-52 TASK 849
21-23060	Trim pressure was out of range required to perform trim pressure test. Test could not be fully completed. Trim PRSOV operation has not been tested..	21-62 TASK 809
21-23070	Pack flow was out of range required to perform FCV test. Test could not be fully completed. Flow Control Valve operation was not tested..	21-51 TASK 822
21-23080	Trim system control was not returned to the original channel within the required time..	21-61 TASK 881
21-23081	Upper Flow Control Valve is not in control or is failed prior to test.	21-51 TASK 823
21-23082	Lower Flow Control Valve is not in control or is failed prior to test..	21-51 TASK 824
21-23090	Pack control was not returned to the original channel within the required time..	21-52 TASK 845
21-23101	Sec Heat Exchanger Outlet Temp Snsr (L Pack) signal is out of range.	21-52 TASK 808
21-23102	Sec Heat Exchanger Outlet Temp Snsr (R Pack) signal is out of range.	21-52 TASK 839
21-23201	Ram Air Inlet Actuator (L Pack) AC motor is not in commanded position.	21-52 TASK 814

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21-23202	Ram Air Inlet Actuator (R Pack) AC motor is not in commanded position.	21-52 TASK 836
21-23301	Ram Air Exhaust Actuator (L Pack) AC motor is not in commanded position.	21-52 TASK 815
21-23302	Ram Air Exhaust Actuator (R Pack) AC motor is not in commanded position.	21-52 TASK 837
21-23401	Low Limit Valve (L Pack) AC motor is not in commanded position.	21-52 TASK 809
21-23402	Low Limit Valve (R Pack) AC motor is not in commanded position.	21-52 TASK 833
21-23411	Compressor Disch Temp Snsr (L Pack, CTC Ch1) signal is out of range.	21-52 TASK 806
21-23412	Compressor Disch Temp Snsr (R Pack, CTC Ch1) signal is out of range.	21-52 TASK 829
21-23421	Compressor Disch Temp Snsr (L Pack, CTC Ch2) signal is out of range.	21-52 TASK 830
21-23422	Compressor Disch Temp Snsr (R Pack, CTC Ch2) signal is out of range.	21-52 TASK 831
21-23431	Compressor Disch Temp Snsr (L Pack, ASCPC) signal is out of range.	21-52 TASK 805
21-23432	Compressor Disch Temp Snsr (R Pack, ASCPC) signal is out of range.	21-52 TASK 828
21-23441	Compressor Disch Temp Sensor signals from Air Supply & Cabin Pressure Controller (L) and Cabin Temperature Controller (Left) do not agree.	21-52 TASK 850
21-23442	Compressor Disch Temp Sensor signals from Air Supply & Cabin Pressure Controller (R) and Cabin Temperature Controller (Right) do not agree.	21-52 TASK 850
21-23491	Air Cycle Machine (L Pack) compressor discharge temperature is too high.	21-52 TASK 817
21-23492	Air Cycle Machine (R Pack) compressor discharge temperature is too high.	21-52 TASK 843
21-23501	Second Stage Turbine Bypass Valve (L Pack) AC motor is not in commanded position.	21-52 TASK 810
21-23502	Second Stage Turbine Bypass Valve (R Pack) AC motor is not in commanded position.	21-52 TASK 834
21-24001	Lower Flow Control And SOV (L Pack) torque motor is not in commanded position.	21-51 TASK 806
21-24002	Lower Flow Control And SOV (R Pack) torque motor is not in commanded position.	21-51 TASK 816

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-24101	Upper Flow Control And SOV (L Pack) torque motor is not in commanded position.	21-51 TASK 817
21-24102	Upper Flow Control And SOV (R Pack) torque motor is not in commanded position.	21-51 TASK 818
21-24201	Trim Air Pressure Regulating And SOV (Left) torque motor is not in commanded position.	21-62 TASK 802
21-24202	Trim Air Pressure Regulating And SOV (Right) torque motor is not in commanded position.	21-62 TASK 807
21-24301	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; Flow Control Valve Proximity switch is failed. AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3114-BCG-00W-16; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Upper Flow Control Valve (L Pack) Proximity switch is failed.	21-51 TASK 829
21-24302	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; Flow Control Valve Proximity switch is failed. AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3114-BCG-00W-16; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Upper Flow Control Valve (R Pack) Proximity switch is failed.	21-51 TASK 830
21-24303	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; Flow Control Valve Proximity switch is failed. AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3114-BCG-00W-16; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Lower Flow Control Valve (L Pack) Proximity switch is failed.	21-51 TASK 831
21-24304	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; Flow Control Valve Proximity switch is failed. AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3114-BCG-00W-16; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Lower Flow Control Valve (R Pack) Proximity switch is failed.	21-51 TASK 832
21-24400	Upper Recirculation Fan (Fwd) motor does not follow command or is overheated.	21-25 TASK 805
21-24401	Relay (FWD UPR RECIRC FAN RLY) in P110 or fan does not follow Upper Recirculation Fan (FWD) command..	21-25 TASK 813

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-24500	Upper Recirculation Fan (Aft) motor does not follow command or is overheated.	21-25 TASK 806
21-24501	Relay (AFT UPR RECIRC FAN RLY) in P210 or fan does not follow Uper Recirculation Fan (aft) command..	21-25 TASK 814
21-24600	Lower Recirculation Fan (Left) motor does not follow command or is overheated.	21-25 TASK 807
21-24601	Relay (L LWR RECIRC FAN RLY) in P110 or fan does not follow Lower Recirculation Fan (Left) command..	21-25 TASK 809
21-24700	Lower Recirculation Fan (Right) motor does not follow command or is overheated.	21-25 TASK 808
21-24701	Relay (R LWR RECIRC FAN RLY) in P210 or fan does not follow Lower Recirculation Fan (Right) command.	21-25 TASK 812
21-24821	Air Cycle Machine (L Pack) does not cool.	21-52 TASK 818
21-24822	Air Cycle Machine (R Pack) does not cool.	21-52 TASK 818
21-24901	Economy Cooling Valve (L Pack) is not in commanded position.	21-52 TASK 811
21-24902	Economy Cooling Valve (R Pack) is not in commanded position.	21-52 TASK 835
21-24911	Economy Cooling Valve relay (K21009) is not in commanded position (P110).	21-52 TASK 813
21-24912	Economy Cooling Check Valve relay (K21008) is not in commanded position (P210).	21-52 TASK 841
21-25011	Cabin Temperature Controller (Left) has an internal fault, no power, or incompatible software.	21-61 TASK 868
21-25012	Cabin Temperature Controller (Right) has an internal fault, no power, or incompatible software.	21-61 TASK 868
21-25013	Cabin Temperature Controller (Left) has an internal fault, no power, or incompatible software.	21-61 TASK 868
21-25014	Cabin Temperature Controller (Right) has an internal fault, no power, or incompatible software.	21-61 TASK 868
21-25031	Cabin Temperature Controller (Left) has incorrect software configuration.	21-61 TASK 810
21-25032	Cabin Temperature Controller (Right) has incorrect software configuration.	21-61 TASK 840
21-25110	Cabin Temperature Controller (L Chan1) is using default data from the ELMS P110 panel.	21-61 TASK 882
21-25111	Cabin Temperature Controller (L Chan2) is using default data from the ELMS P110 panel.	21-61 TASK 882
21-25112	Cabin Temperature Controller (R Chan1) is using default data from the ELMS P110 panel.	21-61 TASK 882

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-25113	Cabin Temperature Controller (R Chan2) is using default data from the ELMS P110 panel.	21-61 TASK 882
21-25210	Cabin Temperature Controller (L Chan1) is using default data from the ELMS P210 panel.	21-61 TASK 882
21-25211	Cabin Temperature Controller (L Chan2) is using default data from the ELMS P210 panel.	21-61 TASK 882
21-25212	Cabin Temperature Controller (R Chan1) is using default data from the ELMS P210 panel.	21-61 TASK 882
21-25213	Cabin Temperature Controller (R Chan2) is using default data from the ELMS P210 panel.	21-61 TASK 882
21-25501	Cabin Temperature Controller (L Chan1) is using default signal from ASCPC-L.	21-61 TASK 883
21-25502	Cabin Temperature Controller (L Chan2) is using default signal from ASCPC-L.	21-61 TASK 883
21-25503	Cabin Temperature Controller (R Chan1) is using default signal from ASCPC-L.	21-61 TASK 883
21-25504	Cabin Temperature Controller (R Chan2) is using default signal from ASCPC-L.	21-61 TASK 883
21-25506	Cabin Temperature Controller (L Chan1) is using default signal from ASCPC-R.	21-61 TASK 883
21-25507	Cabin Temperature Controller (L Chan2) is using default signal from ASCPC-R.	21-61 TASK 883
21-25508	Cabin Temperature Controller (R Chan1) is using default signal from ASCPC-R.	21-61 TASK 883
21-25509	Cabin Temperature Controller (R Chan2) is using default signal from ASCPC-R.	21-61 TASK 883
21-25511	Cabin Temperature Controller (L Chan1) is using default data from left Cardfile.	21-61 TASK 884
21-25512	Cabin Temperature Controller (L Chan2) is using default data from left Cardfile.	21-61 TASK 884
21-25513	Cabin Temperature Controller (R Chan1) is using default data from left Cardfile.	21-61 TASK 884
21-25514	Cabin Temperature Controller (R Chan2) is using default data from left Cardfile.	21-61 TASK 884
21-25516	Cabin Temperature Controller (L Chan1) is using default data from the right Cardfile.	21-61 TASK 884
21-25517	Cabin Temperature Controller (L Chan2) is using default data from the right Cardfile.	21-61 TASK 884
21-25518	Cabin Temperature Controller (R Chan1) is using default data from the right Cardfile.	21-61 TASK 884

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-25519	Cabin Temperature Controller (R Chan2) is using default data from the right Cardfile.	21-61 TASK 884
21-27112	Zone Temperature Selector 1 (R CTC Ch1) signal is out of range.	21-61 TASK 837
21-27211	Zone Temperature Selector 2 (L CTC Ch1) signal is out of range.	21-61 TASK 834
21-27212	Zone Temperature Selector 2 (R CTC Ch1) signal is out of range.	21-61 TASK 835
21-27221	Zone Temperature Selector 2 (L CTC Ch2) signal is out of range.	21-61 TASK 834
21-27222	Zone Temperature Selector 2 (R CTC Ch2) signal is out of range.	21-61 TASK 835
21-28011	Mix Manifold Temp Sensor (L CTC Ch1) signal is out of range.	21-52 TASK 804
21-28012	Mix Manifold Temp Sensor (R CTC Ch1) signal is out of range.	21-52 TASK 825
21-28021	Mix Manifold Temp Sensor (L CTC Ch2) signal is out of range.	21-52 TASK 826
21-28022	Mix Manifold Temp Sensor (R CTC Ch2) signal is out of range.	21-52 TASK 827
21-28060	Flight Deck Temp Control (auto) is inoperative.	21-61 TASK 880
21-28801	Cabin Temperature Controller (Left) has no output on any bus.	21-61 TASK 868
21-28802	Cabin Temperature Controller (Right) has no output on any bus.	21-61 TASK 868
21-28841	Cabin Temperature Controller (Left) has no output on System ARINC 629 Bus (left).	21-61 TASK 801
21-28842	Cabin Temperature Controller (Right) has no output on System ARINC 629 Bus (left).	21-61 TASK 817
21-28861	Cabin Temperature Controller (Left) has no output on System ARINC 629 Bus (right).	21-61 TASK 818
21-28862	Cabin Temperature Controller (Right) has no output on System ARINC 629 Bus (right).	21-61 TASK 819
21-29011	Condenser Inlet Temp Snsr (L Pack, CTC Ch1) signal is out of range.	21-52 TASK 803
21-29012	Condenser Inlet Temp Snsr (R Pack, CTC Ch1) signal is out of range.	21-52 TASK 822
21-29021	Condenser Inlet Temp Snsr (L Pack, CTC Ch2) signal is out of range.	21-52 TASK 823
21-29022	Condenser Inlet Temp Snsr (R Pack, CTC Ch2) signal is out of range.	21-52 TASK 824

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-29401	AIMS-2, CMCF LDI 3114-BCG-00W-16; Cabin Temperature Controller (Left) has no input from Any LRU on System ARINC 629 Bus (left). AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Cabin Temperature Controller (Left) has no input from any LRU on System ARINC 629 Bus (left).	21-61 TASK 801
21-29402	AIMS-2, CMCF LDI 3114-BCG-00W-16; Cabin Temperature Controller (Right) has no input from Any LRU on System ARINC 629 Bus (left). AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Cabin Temperature Controller (Right) has no input from any LRU on System ARINC 629 Bus (left).	21-61 TASK 817
21-29405	Cabin Temperature Controller (L Chan1) has no input from Left AIMS on System ARINC 629 Bus (left).	21-61 TASK 802
21-29406	Cabin Temperature Controller (R Chan2) has no input from Left AIMS on System ARINC 629 Bus (left).	21-61 TASK 820
21-29409	Cabin Temperature Controller (L Chan1) has no input from Right AIMS on System ARINC 629 Bus (left).	21-61 TASK 821
21-29410	Cabin Temperature Controller (R Chan2) has no input from Right AIMS on System ARINC 629 Bus (left).	21-61 TASK 822
21-29421	Cabin Temperature Controller (L Chan1) has no input from APU Controller (APUC) on System ARINC 629 Bus (left).	21-61 TASK 811
21-29422	Cabin Temperature Controller (R Chan2) has no input from APU Controller (APUC) on System ARINC 629 Bus (left).	21-61 TASK 839
21-29429	Cabin Temperature Controller (L Chan1) has no input from Air Supply Cabin Pressure Controller (L) on System ARINC 629 Bus (left).	21-61 TASK 812
21-29430	Cabin Temperature Controller (R Chan2) has no input from Air Supply Cabin Pressure Controller (L) on System ARINC 629 Bus (left).	21-61 TASK 839
21-29433	Cabin Temperature Controller (L Chan1) has no input from Air Supply Cabin Pressure Controller (R) on System ARINC 629 Bus (left).	21-61 TASK 838
21-29434	Cabin Temperature Controller (R Chan2) has no input from Air Supply Cabin Pressure Controller (R) on System ARINC 629 Bus (left).	21-61 TASK 839

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21-29437	Cabin Temperature Controller (L Chan1) has no input from ARINC Signal Gateway (left), LSCF on System ARINC 629 Bus (left).	21-61 TASK 803
21-29438	Cabin Temperature Controller (R Chan2) has no input from ARINC Signal Gateway (left), LSCF on System ARINC 629 Bus (left).	21-61 TASK 827
21-29441	Cabin Temperature Controller (L Chan1) has no input from ARINC Signal Gateway (left), RSCF on System ARINC 629 Bus (left).	21-61 TASK 828
21-29442	Cabin Temperature Controller (R Chan2) has no input from ARINC Signal Gateway (left), RSCF on System ARINC 629 Bus (left).	21-61 TASK 829
21-29449	Cabin Temperature Controller (L Chan1) has no input from Cabin Temperature Controller (Right) on System ARINC 629 Bus (left).	21-61 TASK 813
21-29450	Cabin Temperature Controller (R Chan2) has no input from Cabin Temperature Controller (Left) on System ARINC 629 Bus (left).	21-61 TASK 839
21-29463	Cabin Temperature Controller (L Chan1) has no input from ELMS P110 Electronics Unit on System ARINC 629 Bus (left).	21-61 TASK 899
21-29464	Cabin Temperature Controller (R Chan2) has no input from ELMS P110 Electronics Unit on System ARINC 629 Bus (left).	21-61 TASK 900
21-29467	Cabin Temperature Controller (L Chan1) has no input from ELMS P210 Electronics Unit on System ARINC 629 Bus (left).	21-61 TASK 901
21-29468	Cabin Temperature Controller (R Chan2) has no input from ELMS P210 Electronics Unit on System ARINC 629 Bus (left).	21-61 TASK 902
21-29469	Cabin Temperature Controller (L Chan1) has no input from Overhead Panel Bus Controller (L) on System ARINC 629 Bus (left).	21-61 TASK 815
21-29470	Cabin Temperature Controller (R Chan2) has no input from Overhead Panel Bus Controller (L) on System ARINC 629 Bus (left).	21-61 TASK 839
21-29473	Cabin Temperature Controller (L Chan1) has no input from Overhead Panel Bus Controller (R) on System ARINC 629 Bus (left).	21-61 TASK 838
21-29474	Cabin Temperature Controller (R Chan2) has no input from Overhead Panel Bus Controller (R) on System ARINC 629 Bus (left).	21-61 TASK 839
21-29477	Cabin Temperature Controller (L Chan1) has no input from Pass. Address/Cabin Interphone Controller on System ARINC 629 Bus (left).	21-61 TASK 816

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-29478	Cabin Temperature Controller (R Chan2) has no input from Pass. Address/Cabin Interphone Controller on System ARINC 629 Bus (left).	21-61 TASK 839
21-29601	Cabin Temperature Controller (Left) has no input from any LRU on System ARINC 629 Bus (right).	21-61 TASK 818
21-29602	Cabin Temperature Controller (Right) has no input from any LRU on System ARINC 629 Bus (right).	21-61 TASK 819
21-29605	Cabin Temperature Controller (L Chan2) has no input from Left AIMS on System ARINC 629 Bus (right).	21-61 TASK 823
21-29606	Cabin Temperature Controller (R Chan1) has no input from Left AIMS on System ARINC 629 Bus (right).	21-61 TASK 824
21-29609	Cabin Temperature Controller (L Chan2) has no input from Right AIMS on System ARINC 629 Bus (right).	21-61 TASK 825
21-29610	Cabin Temperature Controller (R Chan1) has no input from Right AIMS on System ARINC 629 Bus (right).	21-61 TASK 826
21-29621	Cabin Temperature Controller (L Chan2) has no input from APU Controller (APUC) on System ARINC 629 Bus (right).	21-61 TASK 838
21-29622	Cabin Temperature Controller (R Chan1) has no input from APU Controller (APUC) on System ARINC 629 Bus (right).	21-61 TASK 839
21-29629	Cabin Temperature Controller (L Chan2) has no input from Air Supply Cabin Pressure Controller (L) on System ARINC 629 Bus (right).	21-61 TASK 838
21-29630	Cabin Temperature Controller (R Chan1) has no input from Air Supply Cabin Pressure Controller (L) on System ARINC 629 Bus (right).	21-61 TASK 839
21-29633	Cabin Temperature Controller (L Chan2) has no input from Air Supply Cabin Pressure Controller (R) on System ARINC 629 Bus (right).	21-61 TASK 838
21-29634	Cabin Temperature Controller (R Chan1) has no input from Air Supply Cabin Pressure Controller (R) on System ARINC 629 Bus (right).	21-61 TASK 839
21-29637	Cabin Temperature Controller (L Chan2) has no input from ARINC Signal Gateway (right), LSCF on System ARINC 629 Bus (right).	21-61 TASK 830
21-29638	Cabin Temperature Controller (R Chan1) has no input from ARINC Signal Gateway (right), LSCF on System ARINC 629 Bus (right).	21-61 TASK 831
21-29641	Cabin Temperature Controller (L Chan2) has no input from ARINC Signal Gateway (right), RSCF on System ARINC 629 Bus (right).	21-61 TASK 832

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-29642	Cabin Temperature Controller (R Chan1) has no input from ARINC Signal Gateway (right), RSCF on System ARINC 629 Bus (right).	21-61 TASK 833
21-29645	Cabin Temperature Controller (L Chan2) has no input from Cabin System Management Unit on System ARINC 629 Bus (right).	21-61 TASK 838
21-29646	Cabin Temperature Controller (R Chan1) has no input from Cabin System Management Unit on System ARINC 629 Bus (right).	21-61 TASK 839
21-29649	Cabin Temperature Controller (L Chan2) has no input from Cabin Temperature Controller (Right) on System ARINC 629 Bus (right).	21-61 TASK 838
21-29650	Cabin Temperature Controller (R Chan1) has no input from Cabin Temperature Controller (Left) on System ARINC 629 Bus (right).	21-61 TASK 839
21-29663	Cabin Temperature Controller (L Chan2) has no input from ELMS P110 Electronics Unit on System ARINC 629 Bus (right).	21-61 TASK 903
21-29664	Cabin Temperature Controller (R Chan1) has no input from ELMS P110 Electronics Unit on System ARINC 629 Bus (right).	21-61 TASK 904
21-29667	Cabin Temperature Controller (L Chan2) has no input from ELMS P210 Electronics Unit on System ARINC 629 Bus (right).	21-61 TASK 905
21-29668	Cabin Temperature Controller (R Chan1) has no input from ELMS P210 Electronics Unit on System ARINC 629 Bus (right).	21-61 TASK 906
21-29669	Cabin Temperature Controller (L Chan2) has no input from Overhead Panel Bus Controller (L) on System ARINC 629 Bus (right).	21-61 TASK 838
21-29670	Cabin Temperature Controller (R Chan1) has no input from Overhead Panel Bus Controller (L) on System ARINC 629 Bus (right).	21-61 TASK 839
21-29673	Cabin Temperature Controller (L Chan2) has no input from Overhead Panel Bus Controller (R) on System ARINC 629 Bus (right).	21-61 TASK 838
21-29674	Cabin Temperature Controller (R Chan1) has no input from Overhead Panel Bus Controller (R) on System ARINC 629 Bus (right).	21-61 TASK 839
21-29911	Diff Press Sensor (L Pack, ASCPC) signal is out of range.	21-51 TASK 804
21-29912	Diff Press Sensor (R Pack, ASCPC) signal is out of range.	21-51 TASK 814
21-30010	Relay (MID Upper Rest Exhaust Valve) in P210 is not in commanded position.	21-98 TASK 801
21-30011	MID Upper Rest Exhaust Valve is not in commanded position.	21-98 TASK 801

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-30012	Relay (MID Upper Rest Supply Shutoff Valve) in P210 is not in commanded position.	21-98 TASK 801
21-30013	MID Upper Rest Supply Shut Off Valve is not in commanded position.	21-98 TASK 801
21-30032	Relay (MID Upper Rest Exhaust Valve) in P210 is not in commanded position.	21-98 TASK 801
21-30033	MID Upper Rest Exhaust Valve is not in commanded position.	21-98 TASK 801
21-30034	Relay (MID Upper Rest Supply Shutoff Valve) in P210 is not in commanded position.	21-98 TASK 801
21-30035	MID Upper Rest Supply Shut Off Valve is not in commanded position.	21-98 TASK 801
21-38010	Outflow Valve Control Unit (aft) position signals from Outflow Valve Control Unit (aft) and OPBC - Overhead panel bus controller do not agree.	21-31 TASK 813
21-38020	Outflow Valve Control Unit (fwd) position signals from Outflow Valve Control Unit (fwd) and OPBC - Overhead panel bus controller do not agree.	21-31 TASK 812
21-38310	Air ground signals from Weight-On-Wheels Card-(left) and Weight-On-Wheels Card-(right) do not agree.	32-09 TASK 828
21-39010	Outflow Valve (aft) is not in commanded position.	21-31 TASK 803
21-39020	Outflow Valve (fwd) is not in commanded position.	21-31 TASK 804
21-39030	Outflow Valve Motor (aft, left) control circuit is open or shorted.	21-31 TASK 801
21-39040	Outflow Valve Motor (aft, right) control circuit is open or shorted.	21-31 TASK 808
21-39050	Outflow Valve Motor (fwd, left) circuit is open or shorted.	21-31 TASK 809
21-39060	Outflow Valve Motor (fwd, right) circuit is open or shorted.	21-31 TASK 810
21-39071	Remote Cabin Pressure Sensor signal is out of range.	21-31 TASK 823
21-39080	Outflow Valve Control Unit (aft) or ECU (L, aft) motor control circuit is open or shorted.	21-31 TASK 806
21-39082	Outflow Valve Control Unit (aft) or ECU (R, aft) motor control circuit is open or shorted.	21-31 TASK 824
21-39090	Outflow Valve Control Unit (fwd) or ECU (L, fwd) motor control circuit is open or shorted.	21-31 TASK 817
21-39092	Outflow Valve Control Unit (FWD) or ECU (R, fwd) motor control circuit is open or shorted.	21-31 TASK 825
21-39190	Outflow VCU (fwd) or ECU (L, fwd) has no output on ARINC 429 Bus or output is incorrect.	21-31 TASK 805
21-39290	Outflow Valve Control Unit (aft) or ECU (L, aft) has no output on ARINC 429 Bus or output is incorrect.	21-31 TASK 814

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

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MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
21-39390	Outflow Valve Control Unit (fwd) or ECU (R , fwd) has no output on ARINC 429 Bus or output is incorrect.	21-31 TASK 815
21-39490	Outflow Valve Control Unit (aft) or ECU (R, aft) has no output on ARINC 429 Bus or output is incorrect.	21-31 TASK 816
21-50009	Relay (L ECONO COOLING VLV CNTL) in P110 is not in commanded position.	21-52 TASK 855
21-50011	Relay (FWD UPR RECIRC FAN) in P110 is not in commanded position.	21-25 TASK 819
21-50012	Relay (L LWR RECIRC FAN) in P110 is not in commanded position.	21-25 TASK 818
21-50013	Relay (AUTO/MAN CONT F/D TRIM) in P110 is not in commanded position.	21-61 TASK 896
21-50014	Relay (FLTDC TRIM MOD VLV OPEN) in P110 is not in commanded position.	21-61 TASK 897
21-50015	Relay (FLTDC TRIM MOD VLV CLOSE) in P110 is not in commanded position.	21-61 TASK 898
21-50016	Relay (R ECONO COOL VLV) in P210 is not in commanded position.	21-52 TASK 856
21-50018	Relay(R SATCOM BACKPU COOLING FAN) in P210 is not in commanded position.	21-27 TASK 882

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

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801. ECSMC-L No Input from ASG-R on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-19905.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the left ECS miscellaneous card (ECSMC-L), A14, in the left systems cardfile (LSCF), P85.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right ARINC signal gateway (ASG-R) card, A15, in the LSCF, P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the ASG-R card to the ECSMC-L card:
 - (a) Remove the ASG-R card, A15 from the LSCF, P85. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Remove the ECSMC-L card, A14 from the LSCF, P85. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (c) Do a wiring check between these pins of connector XA15 and connector XA14 at the LSCF, P85 (SSM 21-00-11):

XA12	XA14
pin 67	pin 115
pin 70	pin 118

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ECSMC-L card, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

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- 3) Re-install the ASG-R card, A15. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

802. ECSMC-R No Input from ASG-L on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-19904.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the right ECS miscellaneous card (ECSMC-R), A14, in the right systems cardfile (RSCF), P84.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left ARINC signal gateway (ASG-L) card, A12, in the RSCF, P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the ASG-L card to the ECSMC-R card:
 - (a) Remove the ASG-L card, A12 from the RSCF, P84. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Remove the right ECSMC card, A14 from the RSCF, P84. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (c) Do a wiring check between these pins of connector XA12 and connector XA14 at the RSCF, P84 (SSM 21-00-12):

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XA12	XA14
pin 67	pin 151
pin 70	pin 154

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the ECSMC-R card, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Re-install the ASG-L card, A12. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

———— END OF TASK ————

803. ECSMC-R No Input from ASG-R on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-19906.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the right ECS miscellaneous card (ECSMC-R), A14, in the right systems cardfile (RSCF), P84.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right ARINC signal gateway (ASG-R) card, A15, in the RSCF, P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the ASG-R card to the ECSMC-R card:

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- (a) Remove the ASG-R card, A15 from the RSCF, P84. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
- (b) Remove the ECSMC-R card, A14 from the RSCF, P84. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
- (c) Do a wiring check between these pins of connector XA15 and connector XA14 at the RSCF, P84 (SSM 21-00-12):

XA12	XA14
pin 67	pin 115
pin 70	pin 118

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ECSMC-R card, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Re-install the ASG-R card, A15. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

804. ECSMC-R No Output on ECS 429 Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-18892.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the right ECS miscellaneous card (ECSMC-R), A14, in the right systems cardfile (RSCF), P84.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Look at the EXTENDED MAINTENANCE, EXISTING FAULTS display on the MAT.

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- (a) Look for an ATA 31 maintenance message related to the linear/monitor.
NOTE: The linear/monitor supplies power to the ECS Miscellaneous Card.
- (b) Do these steps for each maintenance message that you find:
- 1) Find the message in the FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) If the MAT shows NOT ACTIVE for the ECSMC maintenance message (or if the message does not show), you corrected the fault.
 - 4) If the MAT shows ACTIVE for the ECSMC maintenance message, then continue.
- (3) Do this check of the wiring from the left ARINC signal gateway card (ASG-L) to the ECSMC-R card:
- (a) Remove the ASG-L card, A12 from the RSCF, P84. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Remove the ECSMC-R card, A14 from the RSCF, P84. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (c) Do a wiring check between these pins of connector XA12 and connector XA14 at the RSCF, P84 (SSM 21-00-12):

XA12	XA14
pin 28	pin 134
pin 32	pin 137

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ECSMC-R card, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Re-install the ASG-L card, A12. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
- (4) Do this check of the wiring from the right ARINC signal gateway card (ASG-R) to the ECSMC-R card:
- (a) Re-install the ASG-L card, A12. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - (b) Remove the ASG-R card, A15 from the RSCF, P84. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (c) Do a wiring check between these pins of connector XA15 and connector XA14 at the RSCF, P84 (SSM 21-00-12):

XA15	XA14
pin 28	pin 134
pin 32	pin 137

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.

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- 2) Re-install the ECSMC-R card, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- 3) Re-install the ASG-R card, A15. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the E5 pressure transducer, M21584:
 - (a) Disconnect electrical connector, DM21584 from the E5 pressure transducer, M21584.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message do the steps that follow:
 - 1) Replace the E5 pressure transducer. To replace the pressure transducer, These are the tasks:
Equipment Cooling Duct Pressure Sensors Removal, AMM TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM TASK 21-27-08-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message, re-install the connector DM21584.
 - (d) Do a wiring check between these pins of connector DM21586 and connector DP8405 at the P84 systems cardfile:

DM21584	DP8405
pin 3	pin 19
pin 4	pin 20
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the VSCF pressure transducer, M21585:
 - (a) Disconnect electrical connector, DM21585 from the VSCF pressure transducer, M21585.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message do the steps that follow:
 - 1) Replace the VSCF pressure transducer. To replace the pressure transducer, These are the tasks:
Equipment Cooling Duct Pressure Sensors Removal, AMM TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM TASK 21-27-08-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- (c) If the MAT shows ACTIVE for the maintenance message, re-install the connector DM21585.
- (d) Do a wiring check between these pins of connector DM21585 and connector DP8405 at the P84 systems cardfile:

DM21585	DP8405
pin 3	pin 21
pin 4	pin 22

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (7) Do a check for voltage to the right equipment cooling controller, M21207:
 - (a) Disconnect electrical connector, DM21207A from the right equipment cooling controller.
 - (b) Do a check for 28 VDC from pin 20 of electrical connector DM21207A.
 - (c) If there is less than 18 VDC from pin 20, do this step:
 - 1) Repair the wiring between pin 20 of connector DM21207A and this circuit breaker:

Right Power Management Panel, P210

Row	Col	Number	Name
P	9	C21636	R EQPT CLG CTRL

- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

805. ECSMC-L No Input from ASG-L on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-19903.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the left ECS miscellaneous card (ECSMC-L), A14, in the left systems cardfile (LSCF), P85.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

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ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left ARINC signal gateway (ASG-L) card, A12, in the LSCF, P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the ASG-L card to the ECSMC-L card:
 - (a) Remove the ASG-L card, A12 from the LSCF, P85. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Remove the ECSMC-L card, A14 from the LSCF, P85. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (c) Do a wiring check between these pins of connector XA12 and connector XA14 at the LSCF, P85 (SSM 21-00-11):

XA12	XA14
pin 67	pin 151
pin 70	pin 154

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ECSMC-L card, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Re-install the ASG-L card, A12. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

806. ECSMC-L No Output on ECS 429 Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-18891.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

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C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the left ECS miscellaneous card (ECSMC-L), A14, in the left systems cardfile (LSCF), P85.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Look at the EXTENDED MAINTENANCE, EXISTING FAULTS display on the MAT.
 - (a) Look for an ATA 31 maintenance message related to the linear/monitor.

NOTE: The linear/monitor supplies power to the ECS Miscellaneous Card.
 - (b) Do these steps for each maintenance message that you find:
 - 1) Find the message in the FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) If the MAT shows NOT ACTIVE for the ECSMC maintenance message (or if the message does not show), you corrected the fault.
 - 4) If the MAT shows ACTIVE for the ECSMC maintenance message, then continue.
- (3) Do this check of the wiring from the left ARINC signal gateway card (ASG-L) to the ECSMC-L card:
 - (a) Remove the ASG-L card, A12 from the LSCF, P85. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Remove the ECSMC-L card, A14 from the LSCF, P85. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (c) Do a wiring check between these pins of connector XA12 and connector XA14 at the LSCF, P85 (SSM 21-00-11):

XA12	XA14
pin 28	pin 134
pin 32	pin 137

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ECSMC-L card, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Re-install the ASG-L card, A12. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.

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- (4) Do this check of the wiring from the right ARINC signal gateway card (ASG-R) to the ECSMC-L card:

- (a) Re-install the ASG-L card, A12. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- (b) Remove the ASG-R card, A15 from the LSCF, P85. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
- (c) Do a wiring check between these pins of connector XA15 and connector XA14 at the LSCF, P85 (SSM 21-00-11):

XA15	XA14
pin 28	pin 134
pin 32	pin 137

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ECSMC-L card, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Re-install the ASG-R card, A15. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the E4 pressure transducer, M21586:
- (a) Disconnect electrical connector, DM21586 from the E4 pressure transducer, M21586.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message do the steps that follow:
 - 1) Replace the E4 pressure transducer. To replace the pressure transducer, These are the tasks:
Equipment Cooling Duct Pressure Sensors Removal, AMM TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM TASK 21-27-08-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message, re-install the connector DM21586.
 - (d) Do a wiring check between these pins of connector DM21586 and connector DP8505 at the P85 systems cardfile:

DM21586	DP8505
pin 3	pin 19
pin 4	pin 20

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.

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- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the flight deck pressure transducer, M21587:
 - (a) Disconnect electrical connector, DM21587 from the flight deck pressure transducer, M21587.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message do the steps that follow:
 - 1) Replace the flight deck pressure transducer. To replace the pressure transducer, These are the tasks:
Equipment Cooling Duct Pressure Sensors Removal, AMM
TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM
TASK 21-27-08-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message, re-install the connector DM21586.
 - (d) Do a wiring check between these pins of connector DM21587 and connector DP8505 at the P85 systems cardfile:

DM21587	DP8505
pin 3	pin 21
pin 4	pin 22

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (7) Do a check for voltage to the left equipment cooling controller, M21104:
 - (a) Disconnect electrical connector, DM21104B from the left equipment cooling controller.
 - (b) Do a check for 28 VDC from pin 8 of electrical connector DM21104B.
 - (c) If there is less than 18 VDC from pin 8, do this step:
 - 1) Repair the wiring between pin 8 of connector DM21104B and this circuit breaker:

Standby Power Management Panel, P310

Row	Col	Number	Name
H	8	C21637	L EQPT CLG CTRL

- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

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807. Air Synoptic Page Duct Pressure Problems - Fault Isolation

A. Fluctuating and/or Low Duct Pressure (ATA 36 - Pneumatics) Fault Isolation Procedure

- (1) Fluctuating duct pressure is caused by a PRSOV (during TAKEOFF and CLIMB power up to 25,000 feet) or an HPSOV (during DESCENT, HOLD or APPROACH power) that is not regulating pressure correctly. The most likely problem will be a loose and/or damaged sense line, bad PRSOVC, HPFAC or a sticky PRSOV, HPSOV.

NOTE: The operation of the pressure sensors are comparison tested with each other. If there are no maintenance messages for the pressure sensors, they are OK.

- (2) Make sure there are no maintenance messages for ATA 36 that could cause the problem.
- (3) Examine the sense lines to the PRSOV/HPSOV and PRSOVC/HPFAC. Make sure they are not loose or damaged.
- (4) Look at the PRSOV/HPSOV.
- (5) If the PRSOV/HPSOV is not fully closed, replace the PRSOV or HPSOV based on the applicable flight condition (TAKEOFF, DESCENT etc).
 - (a) If the PRSOV is not fully closed,
These are the tasks:
PRSOV Removal, AMM TASK 36-11-09-000-803-002,
PRSOV Installation, AMM TASK 36-11-09-400-803-002.
 - (b) If the HPSOV is not fully closed,
These are the tasks:
HPSOV Removal, AMM TASK 36-11-07-000-808-004,
HPSOV Installation, AMM TASK 36-11-07-400-808-004.
 - (c) If the problem continues, replace the PRSOVC or HPFAC based on the applicable flight condition (TAKEOFF, DESCENT etc).
 - 1) If you replace the PRSOVC,
These are the tasks:
PRSOVC Removal, AMM TASK 36-11-18-000-802-002,
PRSOVC Installation, AMM TASK 36-11-18-400-802-002.
 - 2) If you replace the HPFAC,
These are the tasks:
HPFAC Removal, AMM TASK 36-11-08-000-802-002,
HPFAC Installation, AMM TASK 36-11-08-400-802-002.
- (6) If the PRSOV/HPSOV is fully closed, do this task: Engine Air Supply Valves Operational Test, AMM TASK 36-10-00-700-802
 - (a) Make sure there is no sense line leakage. Repair the sense line if it is necessary.
 - (b) Make sure the operation of the PRSOV and HPSOV is smooth (not sticky). Replace the PRSOV or HPSOV if it is necessary.

———— **END OF TASK** ————

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808. Smoke or Fumes in the Cabin, Source Unknown - Fault Isolation

A. General



DO NOT REPLACE PARTS UNTIL YOU IDENTIFY, AND REMOVE THE SOURCE OF THE FUMES. THE FUMES CAN CAUSE THE CONTAMINATION OF A NEW PART. THEN THE NEW PART WILL BE THE SOURCE OF THE FUMES.

- (1) To troubleshoot for cabin fumes or smoke, look for obvious sources inside the cabin and then work to the outside. Start with newly leaking fluids from the engine cowling, APU compressors, and APU drain masts.
- (2) Smoke or fumes can be caused by an internal APU/engine failures which can release oil into the pneumatic and/or air conditioning systems. Another source of smoke or fumes is oil, glycol or hydraulic fluid being ingested into the inlet of the APU or engines. Contamination that is ingested by the APU or engines can enter the pneumatic and/or air conditioning systems.
- (3) Additional sources of smoke or fumes can be:
 - Recirculation fans
 - Gasper fans
 - Equipment cooling fans
 - Chiller boost fans
 - F/D boost fans
 - F/D heaters
 - Door heaters
 - Lav/galley vent fans
 - IFE cooling fans
 - Connexions fans
 - Materials in the cargo compartments
 - Ground carts
 - Fuel leaks that have entered the ducts of the air conditioning system
 - Hydraulic fluid from the reservoir pressurization module tubing
- (4) Odors in the cabin after an engine has been overhauled or the compressor has been washed are not uncommon. These conditions are not considered a fault. Put the airplane "on watch" as necessary.
- (5) Odors in the cabin can occur again after the correction of a problem with a bleed air source (APU, engines). Additional flights or the replacement of cooling pack components, ozone converters, trim air mufflers, the heat exchanger, or the condenser/reheater may be necessary to remove all the contamination.
- (6) Faults in different systems make fumes with different smells. The table that follows has descriptions of the fumes from different systems to help you isolate the fault.

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FUMES	DESCRIPTION	FAULT ISOLATION TASK(S)
OIL	SWEAT, LOCKER ROOM, DIRTY SOCK, RANCID CHEESE, WET DOG, BURNING RUBBER, SOUR MILK, (FRESH OIL) SWEET, MILD IRRITATION TO EYES	Check the APU, Left and Right Engine for Oil Contamination, Check the Cooling Packs for Oil Contamination, Check the Ozone Converter for odor, If present, work upstream to find the source of the contamination
HYDRAULIC FLUID	STRONG IRRITATION TO EYES, PUNGENT, ACRID	Check the Hydraulic Reservoir Pressurization Module tubing and Check Valves for Hydraulic Oil Residue
FUEL	(BURNED FUEL) KEROSENE, (UNBURNED FUEL) ACRID, BITTER	Check the engines as cause of Oil/Fuel Fumes/Smoke in Cabin (FIM 71-05)
ELECTRICAL FAULTS	ACRID, BURNING RUBBER, SULFUR	Check the Cabin Equipment, Check Recirculation Fans and Cargo Compartments, Check F/D heaters and door heaters, Check Light Ballasts and Galley Equipment, Check Humidifier (if installed)
OTHER	COOKED CHICKEN (BIRD STRIKE), BURNING RESIN, ACRID ODOR THAT IRRITATES NOSE AND THROAT, HOT MUSTY SMELL, HAZE IN FLIGHT WITH NO SMELL	Check the Engines for evidence of Bird Strike, Check Trim Valve operation for zone that is source of complaint. Check under Aft Cargo Floor for dripped fluids or dust around the APU Bleed Duct, Check that fumes are not being ingested into bleed air from an external source. Check cargo floors above and below and behind cargo sidewalls for dust or lint and for unwanted materials spilled or left behind

- (7) Do not do this procedure with the crew or passengers on the airplane. This procedure can generate smoke in the airplane.

B. Evaluation Using the Bleed Air Sampling Tool Kit (J21009)

NOTE: This procedure should be performed only if you are using the air sampler, SPL-11153 (part number J21009). The air sampler, SPL-11153 was designed to provide access to the high pressure bleed air via the airplane pneumatic ground port. Smoke and/or burning order (SBO) events may not be confirmed to bleed system sources. The air sampler, SPL-11153 is designed specifically to assist with the isolation of engine and APU oil odor sources.

- (1) Install the air sampler, SPL-11153, to the pneumatic ground air connector.
- (2) Make sure that electrical power is supplied to the airplane Supply Electrical Power, AMM TASK 24-22-00-860-805.
- (3) Make sure these switches on the pilot's overhead panel, P5, which follow are set to the indicated positions:
 - (a) On the BLEED AIR module:
 - 1) APU, L ENG, and R ENG switch-lights are set to OFF
 - 2) L ISLN, C ISLN and R ISLN switch-lights are set to CLOSED
 - (b) On the AIR CONDITIONING module:
 - 1) L PACK and R PACK switch-lights are set to OFF
 - 2) L TRIM AIR and R TRIM AIR switch-lights are set to OFF
 - 3) UPPER RECIRC FANS and LOWER RECIRC FANS switch-lights are set to OFF
 - (c) On the ANTI-ICE module:

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- 1) WING, L ENGINE, and R ENGINE switches are set to OFF
- (d) On the CARGO TEMP SELECT module of the Maintenance Panel, P61:
 - 1) CARGO HEAT AFT and CARGO HEAT BULK selectors are set to OFF
- (4) To supply bleed air using the APU, do these steps:
 - (a) Start the APU and let the APU operation become stable (APU Starting and Operation, AMM TASK 49-11-00-860-804)
 - (b) On the BLEED AIR module of the Overhead Panel, P5, set switches that follow to the indicated positions:
 - 1) Put the L, C and R ISLN valve switches to the AUTO position.
 - 2) Put the APU switch to the AUTO position.
- (5) To supply bleed air using the engines, do these steps:
 - (a) Start the engines (Engine Start (Selection), AMM TASK 71-00-00-800-835-H00).
 - (b) On the BLEED AIR module of the Overhead Panel, P5, set switches that follow to the indicated positions:
 - 1) Put the L, C and R ISLN valve switches to the AUTO position.
 - 2) Put the L ENG, and R ENG switches to the ON position.
- (6) Allow bleed air to run through the air sampler, SPL-11153, for 10 minutes.
- (7) Do these steps to remove bleed air:
 - (a) If you provided bleed air using the APU, do these steps:
 - 1) Put the APU switch, located on the BLEED AIR module of the Overhead Panel, P5, to OFF.
 - 2) Put the L, C and R ISLN valve switches, located on the BLEED AIR module of the Overhead Panel, P5, to the OFF position.
 - 3) Stop the operation of the APU (APU Usual Shutdown, AMM TASK 49-11-00-860-805).
 - (b) If you provided bleed air using the engines, do these steps:
 - 1) Put the L, C and R ISLN valve switches, located on the BLEED AIR module of the Overhead Panel, P5, to the OFF position.
 - 2) Put the L ENG, and R ENG switches, located on the BLEED AIR module of the Overhead Panel, P5, to the OFF position.
 - 3) Stop the operation of the engines (Usual Engine Stop, AMM TASK 71-00-00-800-837-H00).
- (8) Remove the air sampling pad from the air sampler, SPL-11153.
- (9) Extract data from the sample using a spectrometer per supplier instructions.
- (10) Remove the air sampler, SPL-11153, from the airplane.
- (11) Do the Repair Confirmation at the end of this task.

C. Initial Evaluation

- (1) Do a check of the low pressure ground connector.
 - (a) Make sure the check is done less than an hour after the engines are stopped.
 - (b) To get access to the ground air check valve for the left cooling pack, open the left ECS low pressure connection door, 195CL, do this task: Finding an Access Door or Panel on the Fuselage, AMM TASK 06-41-00-800-801

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- (c) To get access to the ground air check valve for the right cooling pack, open the right ECS low pressure connection door, 196CR, do this task: Finding an Access Door or Panel on the Fuselage, AMM TASK 06-41-00-800-801
- (d) Hold the low pressure flapper valve open.
- (e) Use a mirror to look inside the low pressure ground connector for signs of oil contamination.
- (f) Feel the surfaces inside the low pressure ground connector to see if fresh oil is present.
- (g) If oil contamination is found, the probable source is the left engine or APU. The pack must be cleaned. This would rule out E/E cooling and recirculation.
- (2) Do a visual inspection of the drain mast.
 - (a) If nothing is found, then follow the detailed instructions.
- (3) Check the MAT for existing faults for the cabin and IFE equipment.

NOTE: Faults for the cabin and IFE equipment may be related to fumes in the cabin or flight deck.
- (4) Start the APU. To start the APU, do this task: APU Starting and Operation, AMM TASK 49-11-00-860-804
- (5) Start the left and right engines. To start the engines, do this task: Engine Start (Selection), AMM TASK 71-00-00-800-835-H00
- (6) On the BLEED AIR module of the Overhead Panel, P5, set switches that follow to the indicated positions:
 - (a) Put the L, C and R ISLN valve switches to the AUTO position.
 - (b) Put the L ENG, and R ENG switches to the ON position.
 - (c) Put the APU switch to the AUTO position.
- (7) Make sure the hydraulic reservoirs are pressurized. To pressurize the hydraulic reservoirs, do this task: Main Hydraulic System Pressurization, AMM TASK 29-11-00-860-801
- (8) Supply conditioned air with the left and right cooling packs. To supply conditioned air, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803
- (9) Make sure the switches that follow are set to the indicated positions:
 - (a) On the AIR CONDITIONING module of the Overhead Panel, P5:
 - 1) UPPER RECIRC FANS and LOWER RECIRC FANS switch-lights are set to OFF
 - (b) On the ANTI-ICE module of the Overhead Panel, P5:
 - 1) WING, L ENGINE, and R ENGINE switches are set to OFF
 - (c) On the CARGO TEMP SELECT module of the Maintenance Panel, P61:
 - 1) CARGO HEAT AFT and CARGO HEAT BULK selectors are set to OFF
- (10) Operate the cooling packs, APU and engines in each of the configurations shown in the table below.
 - (a) Operate the cooling packs with the trim air ON and the cabin temperatures selected to full Warm (W).
 - (b) Repeat the steps with the trim air OFF and the cabin temperatures selected to full Cold (C).
 - (c) Use the REFERENCE NUMBER table to find the applicable fault isolation procedure to perform when fumes are present.

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APU	L ENG	R ENG	L PACK	R PACK	FUMES	REFERENCE NUMBER(S)
ON	OFF	OFF	ON	OFF	YES	4,1
ON	OFF	OFF	OFF	ON	YES	4,1
OFF	ON	OFF	ON	OFF	YES	4,2
OFF	OFF	ON	OFF	ON	YES	4,3

REFERENCE NUMBER	FAULT ISOLATION TASK TITLE
1	Check the APU Bleed Air for Oil Contamination
2	Check the Left Engine Bleed Air for Oil Contamination
3	Check the Right Engine Bleed Air for Oil Contamination
4	Check the Cooling Packs for Oil Contamination

- (11) If no fumes or smoke appear, then there was an intermittent fault.

NOTE: Occurrences of smoke or fumes in flight are not always repeatable on the ground.

- (a) If no fumes or smoke appear, you may be able to determine the source of the smoke occurrence from the description of the smell and its location from the crew members on the flight.
- (b) If a description of the smell of the fumes is available use the fumes description table in the General section to determine which fault isolation procedure may be applicable.
- (c) If the type of fumes can not be identified, then do the Fault Isolation task from the beginning.
- (12) Stop the cooling packs, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804
- (13) Stop the APU. To stop the APU, do this task: APU Usual Shutdown, AMM TASK 49-11-00-860-805
- (14) Stop the left and right engines. To stop the engines, do this task: Usual Engine Stop, AMM TASK 71-00-00-800-837-H00

D. Fault Isolation Procedure - Check the APU Bleed Air for Oil Contamination

- (1) Do the steps that follow to check the APU for the correct quantity of oil:

- (a) To get access to the APU oil level sight gage:

Open these access panels:

<u>Number</u>	<u>Name/Location</u>

315AL	Auxiliary Power Unit (APU) Access Door, Left

316AR	Auxiliary Power Unit (APU) Access Door, Right

- 1) To open the APU access doors, do this task: APU Access Doors (Open), AMM TASK 49-11-02-010-801.

- (b) Make sure the APU oil level sight gage shows the correct quantity of oil.

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- (c) If the APU oil level is less than FULL, do a check of the maintenance records to see if there is a change in oil consumption averages. do this task: APU Starting and Operation, AMM TASK 49-11-00-860-804

NOTE: Usual oil consumption of an APU is 0.025 pints (12 cc) per hour. Oil consumption more than this rate does not indicate a problem with the APU.

- (2) Check the APU magnetic chip detectors for debris:

- (a) Do this task:

Magnetic Chip Collector Inspection, AMM TASK 49-27-04-200-801

NOTE: Debris in the oil can cause damage to bearings and seals. Damage to seals can cause oil loss and contamination of the pneumatic system. Oil contamination of the pneumatic system can cause smoke and fumes.

- (3) Inspect the APU inlet area and inlet duct:

- (a) Inspect the fuselage exterior near the APU inlet door, and the inside of the APU inlet duct for signs that fluid went into the APU inlet.

- 1) If fluid went into the APU inlet, find the cause of the fluid and correct the problem before you continue.

- (b) Remove the panel to get access to the APU inlet screen. (Figure 301)

- (c) Check the APU inlet screen for damage.

- (4) Do the steps that follow to check the APU:

- (a) Remove the APU check valve. To remove the valve, do this task: APU Check Valve Removal, AMM TASK 49-52-03-000-801.

- (b) Remove the APU surge control valve. To remove the valve, do this task: Surge Control Valve Removal, AMM TASK 49-53-01-000-801.

- (c) Examine the APU check valve and the upstream APU bleed duct for wet oil.

- (d) Examine the APU surge control valve and the upstream duct for wet oil.

- (e) Re-install the APU check valve. To install the valve, do this task: APU Check Valve Installation, AMM TASK 49-52-03-400-801.

- (f) Re-install the APU surge control valve. To install the valve, do this task: Surge Control Valve Installation, AMM TASK 49-53-01-400-801.

- (g) Inspect the APU load compressor for damage. do this task: APU Engine Inspection, AMM TASK 49-21-00-200-801

- (h) Inspect the APU power section compressor for damage. do this task: APU Engine Inspection, AMM TASK 49-21-00-200-801

- (i) Inspect the load compressor oil seal buffer air supply line for evidence of blockage. do this task: Buffer Air Supply Tube Check, AMM TASK 49-52-04-000-801

- (j) Inspect the APU load compressor drain tube for blockage. (Figure 301)

- (5) Supply electrical power with a ground cart. To supply electrical power, do this task: Supply Electrical Power, AMM TASK 24-22-00-860-805

NOTE: Do not operate the APU or the engines to supply electrical power to the airplane.

- (6) Make sure these switches on the pilot's overhead panel, P5, which follow are set to the indicated positions:

- (a) On the BLEED AIR module:

- 1) APU, L ENG, and R ENG switch-lights are set to OFF

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- 2) L ISLN, C ISLN and R ISLN switch-lights are set to CLOSED
- (b) On the AIR CONDITIONING module:
 - 1) L PACK and R PACK switch-lights are set to OFF
 - 2) L TRIM AIR and R TRIM AIR switch-lights are set to OFF
 - 3) UPPER RECIRC FANS and LOWER RECIRC FANS switch-lights are set to OFF
- (c) On the ANTI-ICE module:
 - 1) WING, L ENGINE, and R ENGINE switches are set to OFF
- (7) Make sure these selectors on the Maintenance Panel, P61, which follow are set to the indicated positions:
 - (a) On the CARGO TEMP SELECT module:
 - 1) CARGO HEAT AFT and CARGO HEAT BULK selectors are set to OFF
- (8) Remove one of the high pressure (HP) ground connectors. To remove the HP ground connector, do this task: HP Ground Connector Removal, AMM TASK 36-12-03-000-801.

NOTE: This will permit the initial bleed air, which has more oil contamination, to go out through the HP ground connector duct opening.



DO NOT STAND IN THE AIRSTREAM FROM THE HIGH PRESSURE GROUND CONNECTOR DUCT OPENING WHEN YOU PRESSURIZE THE PNEUMATIC DUCT. THE HOT BLEED AIR CAN CAUSE INJURY TO PERSONS WHEN IT GOES OUT THROUGH THE HIGH PRESSURE GROUND CONNECTOR DUCT OPENING.

- (9) Do the steps which follow to do a check for oil contamination from the APU:

NOTE: The APU bleed air will go out through the high pressure (HP) ground connector duct opening.

 - (a) Start the APU and let the APU operation become stable. To start and operate the APU, do this task: APU Starting and Operation, AMM TASK 49-11-00-860-804.
 - (b) Set the APU switch-light and the L ISLN switch-light, on the BLEED AIR module, to the AUTO position.
 - (c) Set the C and R ISLN switch-lights, on the BLEED AIR module, to the CLOSED position.
 - (d) Operate the APU for 5 minutes.



DO NOT STAND IN AIRSTREAM FROM THE HIGH PRESSURE GROUND CONNECTOR DUCT OPENING WHEN YOU PRESSURIZE THE PNEUMATIC DUCT. THE HOT BLEED AIR CAN CAUSE INJURY TO PERSONS WHEN IT GOES OUT THROUGH THE HIGH PRESSURE GROUND CONNECTOR DUCT OPENING.

- (e) Stand near the HP ground connector and smell if there is contaminated air.

NOTE: You can do a smell check of the bleed air from a different APU if it is necessary to compare the bleed air fumes.
- (f) Look for smoke in the APU bleed air.
- (g) If there is contaminated bleed air from the APU, do the steps that follow:
 - 1) Replace the APU. To replace the APU,
These are the tasks:

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Auxiliary Power Unit Removal (Fishpole Hoist Method), AMM TASK 49-11-01-000-805 or Auxiliary Power Unit Removal (Hydraulic Jack Method), AMM TASK 49-11-01-000-801,

Auxiliary Power Unit Installation (Fishpole Hoist Procedure), AMM TASK 49-11-01-400-805 or Auxiliary Power Unit Installation (Hydraulic Jack Method), AMM TASK 49-11-01-400-801.

- 2) Do the oil contamination removal task, To remove the oil contamination, do this task: Oil Contamination Removal from Air Conditioning and Pneumatic Systems, AMM TASK 21-00-01-100-801.
- 3) If the oil contamination removal task does not remove the fumes it may be necessary to replace components of the affected cooling pack. To replace the components, do the tasks that follow.
 - a) Replace the ozone converter for the oil contaminated cooling pack. To replace the ozone converter,
These are the tasks:
Ozone Converter Removal, AMM TASK 21-73-01-000-801,
Ozone Converter Installation, AMM TASK 21-73-01-400-801.
 - b) Replace the dual heat exchanger for the oil contaminated cooling pack. To replace the heat exchanger,
These are the tasks:
Dual Heat Exchanger Removal, AMM TASK 21-52-01-000-801,
Dual Heat Exchanger Installation, AMM TASK 21-52-01-400-801.
 - c) Replace the condenser/reheater for the oil contaminated cooling pack. To replace the condenser/reheater,
These are the tasks:
Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,
Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.
 - d) If there is smoke or fumes from the left cooling pack replace the flight deck mufflers. To replace the flight deck mufflers,
These are the tasks:
Flight Deck Air Distribution Muffler Removal, AMM TASK 21-22-01-000-801,
Flight Deck Air Distribution Muffler Installation, AMM TASK 21-22-01-400-801.
- 4) Do the Repair Confirmation at the end of this task.
- (h) If there is not contaminated bleed air from the APU, then continue.
- (i) Set the L ISLN switch-light to the CLOSED position and the APU switch-light to the OFF position.
- (j) Stop the operation of the APU, do this task: APU Usual Shutdown, AMM TASK 49-11-00-860-805.
- (10) Install the high pressure (HP) ground connector, do this task: HP Ground Connector Installation, AMM TASK 36-12-03-400-801.

E. Fault Isolation Procedure - Check the Left Engine Bleed Air for Oil Contamination

- (1) Do the steps that follow to check the left engine for the correct quantity of oil:
 - (a) Do the applicable steps from this task:

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Engine Oil Replenishing, AMM TASK 12-13-01-130-803-002

- (b) Make sure the engine has the correct quantity of oil.
- (c) If the oil level is near or over the top of the sight glass, correct the oil level before you continue. Do the task to drain the engine oil (AMM PAGEBLOCK 12-22-01/301 Config 2).

NOTE: Too much oil in the engine(s) can cause smoke or fumes in the pneumatic system.

- (d) If the oil level is less than FULL, do a check of the maintenance records to see if there is a change in oil consumption averages.

NOTE: An increase in oil consumption can be an indication of oil loss and possible contamination of the pneumatic system. This can cause smoke or fumes in the pneumatic system.

- (2) Check the Debris Monitoring System for debris:

- (a) Do this task: Engine Oil System (DMS) (Scheduled Maintenance Task) Inspection, AMM TASK 79-00-00-200-804-H01

NOTE: Debris in the oil can cause damage to bearings and seals. Damage to seals can cause oil loss and contamination of the pneumatic system. Oil contamination of the pneumatic system can cause smoke and fumes.

- (3) Do the steps that follow to do a check of the left engine for damage:

- (a) Examine the area behind the fan blades for large oil stains or puddles of oil.
- (b) Examine the area behind the fan blades for signs of a bird strike.
- (c) Examine the HP and IP bleed valve screens for signs of damage, wet oil, or oil stains.

- (4) Supply electrical power with a ground cart. To supply electrical power, do this task: Supply Electrical Power, AMM TASK 24-22-00-860-805

NOTE: Do not operate the APU or the engines to supply electrical power to the airplane.

- (5) Make sure these switches on the pilot's overhead panel, P5, which follow are set to the indicated positions:

- (a) On the BLEED AIR module:

- 1) APU, L ENG, and R ENG switch-lights are set to OFF
- 2) L ISLN, C ISLN and R ISLN switch-lights are set to CLOSED

- (b) On the AIR CONDITIONING module:

- 1) L PACK and R PACK switch-lights are set to OFF
- 2) L TRIM AIR and R TRIM AIR switch-lights are set to OFF
- 3) UPPER RECIRC FANS and LOWER RECIRC FANS switch-lights are set to OFF

- (c) On the ANTI-ICE module:

- 1) WING, L ENGINE, and R ENGINE switches are set to OFF

- (6) Make sure these selectors on the Maintenance Panel, P61, which follow are set to the indicated positions:

- (a) On the CARGO TEMP SELECT module:

- 1) CARGO HEAT AFT and CARGO HEAT BULK selectors are set to OFF

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- (7) Remove one of the high pressure (HP) ground connectors. To remove the HP ground connector, do this task: HP Ground Connector Removal, AMM TASK 36-12-03-000-801.

NOTE: This will permit the initial bleed air, which has more oil contamination, to go out through the HP ground connector duct opening.



DO NOT STAND IN THE AIRSTREAM FROM THE HIGH PRESSURE GROUND CONNECTOR DUCT OPENING WHEN YOU PRESSURIZE THE PNEUMATIC DUCT. THE HOT BLEED AIR CAN CAUSE INJURY TO PERSONS WHEN IT GOES OUT THROUGH THE HIGH PRESSURE GROUND CONNECTOR DUCT OPENING.

- (8) Do these steps which follow to check for oil contamination from the left engine:

NOTE: The left engine bleed air will go out through the high pressure (HP) ground connector duct opening.

- (a) Start the left engine and let the engine operate at ground idle speed. To start and operate the left engine, do this task: Engine Start (Selection), AMM TASK 71-00-00-800-835-H00.
- (b) Set the L ENG switch-light to the ON position and the three ISLN switch-lights, on the BLEED AIR module, to the CLOSED position.
- (c) Let the engine operate for 2 minutes.



DO NOT STAND IN THE AIRSTREAM FROM THE HIGH PRESSURE GROUND CONNECTOR DUCT OPENING WHEN YOU PRESSURIZE THE PNEUMATIC DUCT. THE HOT BLEED AIR CAN CAUSE INJURY TO PERSONS WHEN IT GOES OUT THROUGH THE HIGH PRESSURE GROUND CONNECTOR DUCT OPENING.

- (d) Stand near the HP ground connector and smell if there is contaminated air.

NOTE: You can do a smell check of the bleed air from the right engine if it is necessary to compare the bleed air fumes.

- (e) If there is contaminated bleed air from the left engine, do the steps that follow:

- 1) Check the left (right) engine as cause of oil/fuel fumes/smoke in the cabin (FIM 71-05).
- 2) Do the oil contamination removal task, To remove the oil contamination, do this task: Oil Contamination Removal from Air Conditioning and Pneumatic Systems, AMM TASK 21-00-01-100-801.
- 3) If the oil contamination removal task does not remove the fumes it may be necessary to replace components of the affected cooling pack. To replace the components, do the tasks that follow.

- a) Replace the ozone converter for the oil contaminated cooling pack. To replace the ozone converter,

These are the tasks:

Ozone Converter Removal, AMM TASK 21-73-01-000-801,

Ozone Converter Installation, AMM TASK 21-73-01-400-801.

- b) Replace the dual heat exchanger for the oil contaminated cooling pack. To replace the heat exchanger,

These are the tasks:

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Dual Heat Exchanger Removal, AMM TASK 21-52-01-000-801,
Dual Heat Exchanger Installation, AMM TASK 21-52-01-400-801.

- c) Replace the condenser/reheater for the oil contaminated cooling pack. To replace the condenser/reheater,

These are the tasks:

Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,

Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.

- d) If there is smoke or fumes from the left cooling pack replace the flight deck mufflers. To replace the flight deck mufflers,

These are the tasks:

Flight Deck Air Distribution Muffler Removal, AMM TASK 21-22-01-000-801,

Flight Deck Air Distribution Muffler Installation, AMM TASK 21-22-01-400-801.

- 4) Do the Repair Confirmation at the end of this task.

- (f) If there is not contaminated bleed air from the left engine, then continue.

- (g) Set the L ENG switch-light to the OFF position.

- (h) Stop the operation of the left engine, do this task: Usual Engine Stop, AMM TASK 71-00-00-800-837-H00.

- (9) Install the high pressure (HP) ground connector, do this task: HP Ground Connector Installation, AMM TASK 36-12-03-400-801.

F. Fault Isolation Procedure - Check the Right Engine Bleed Air for Oil Contamination

- (1) Do the steps that follow to check the left engine for the correct quantity of oil:

- (a) Do this task:

Engine Oil Replenishing, AMM TASK 12-13-01-130-803-002

- (b) Make sure the engine has the correct quantity of oil.

- (c) If the oil level is near or over the top of the sight glass, correct the oil level before you continue. Do the task to drain the engine oil (AMM PAGEBLOCK 12-22-01/301 Config 2).

NOTE: Too much oil in the engine(s) can cause smoke or fumes in the pneumatic system.

- (d) If the oil level is less than FULL, do a check of the maintenance records to see if there is a change in oil consumption averages.

NOTE: An increase in oil consumption can be an indication of oil loss and possible contamination of the pneumatic system. This can cause smoke or fumes in the pneumatic system.

- (2) Check the Debris Monitoring System for debris:

- (a) Do this task: Engine Oil System (DMS) (Scheduled Maintenance Task) Inspection, AMM TASK 79-00-00-200-804-H01

NOTE: Debris in the oil can cause damage to bearings and seals. Damage to seals can cause oil loss and contamination of the pneumatic system. Oil contamination of the pneumatic system can cause smoke and fumes.

- (3) Do the steps that follow to do a check of the right engine for damage:

- (a) Examine the area behind the fan blades for large oil stains or puddles of oil.

- (b) Examine the area behind the fan blades for signs of a bird strike.

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- (c) Examine the HP and IP bleed valve screens for signs of damage, wet oil, or oil stains.
- (4) Supply electrical power with a ground cart. To supply electrical power, do this task: Supply Electrical Power, AMM TASK 24-22-00-860-805
NOTE: Do not operate the APU or the engines to supply electrical power to the airplane.
- (5) Make sure these switches on the pilot's overhead panel, P5, which follow are set to the indicated positions:
 - (a) On the BLEED AIR module:
 - 1) APU, L ENG, and R ENG switch-lights are set to OFF
 - 2) L ISLN, C ISLN and R ISLN switch-lights are set to CLOSED
 - (b) On the AIR CONDITIONING module:
 - 1) L PACK and R PACK switch-lights are set to OFF
 - 2) L TRIM AIR and R TRIM AIR switch-lights are set to OFF
 - 3) UPPER RECIRC FANS and LOWER RECIRC FANS switch-lights are set to OFF
 - (c) On the ANTI-ICE module:
 - 1) WING, L ENGINE, and R ENGINE switches are set to OFF
- (6) Make sure these selectors on the Maintenance Panel, P61, which follow are set to the indicated positions:
 - (a) On the CARGO TEMP SELECT module:
 - 1) CARGO HEAT AFT and CARGO HEAT BULK selectors are set to OFF
- (7) Remove one of the high pressure (HP) ground connectors. To remove the HP ground connector, do this task: HP Ground Connector Removal, AMM TASK 36-12-03-000-801.
NOTE: This will permit the initial bleed air, which has more oil contamination, to go out through the HP ground connector duct opening.



DO NOT STAND IN THE AIRSTREAM FROM THE HIGH PRESSURE GROUND CONNECTOR DUCT OPENING WHEN YOU PRESSURIZE THE PNEUMATIC DUCT. THE HOT BLEED AIR CAN CAUSE INJURY TO PERSONS WHEN IT GOES OUT THROUGH THE HIGH PRESSURE GROUND CONNECTOR DUCT OPENING.

- (8) Do the steps which follow to check for oil contamination from the right engine:
NOTE: The right engine bleed air will go out through the high pressure (HP) ground connector duct opening.
 - (a) Start the right engine and let the engine operate at ground idle speed. To start and operate the right engine, do this task: Engine Start (Selection), AMM TASK 71-00-00-800-835-H00.
 - (b) Set the R ENG switch-light to the ON position and the three ISLN switch-lights to the AUTO position, on the BLEED AIR module.
 - (c) Let the engine operate for 2 minutes.
 - (d) Stand near the HP ground connector and smell if there is contaminated air.
NOTE: You can do a smell check of the bleed air from the left engine if it is necessary to compare the bleed air fumes.
 - (e) If there is contaminated bleed air from the right engine, do the steps that follow:

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- 1) Check the left (right) engine as cause of oil/fuel fumes/smoke in the cabin (FIM 71-05).
- 2) Do the oil contamination removal task, To remove the oil contamination, do this task: Oil Contamination Removal from Air Conditioning and Pneumatic Systems, AMM TASK 21-00-01-100-801.
- 3) If the oil contamination removal task does not remove the fumes it may be necessary to replace components of the affected cooling pack. To replace the components, do the tasks that follow.
 - a) Replace the ozone converter for the oil contaminated cooling pack. To replace the ozone converter,
These are the tasks:
Ozone Converter Removal, AMM TASK 21-73-01-000-801,
Ozone Converter Installation, AMM TASK 21-73-01-400-801.
 - b) Replace the dual heat exchanger for the oil contaminated cooling pack. To replace the heat exchanger,
These are the tasks:
Dual Heat Exchanger Removal, AMM TASK 21-52-01-000-801,
Dual Heat Exchanger Installation, AMM TASK 21-52-01-400-801.
 - c) Replace the condenser/reheater for the oil contaminated cooling pack. To replace the condenser/reheater,
These are the tasks:
Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,
Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.
 - d) If there is smoke or fumes from the left cooling pack replace the flight deck mufflers. To replace the flight deck mufflers,
These are the tasks:
Flight Deck Air Distribution Muffler Removal, AMM TASK 21-22-01-000-801,
Flight Deck Air Distribution Muffler Installation, AMM TASK 21-22-01-400-801.
- 4) Do the Repair Confirmation at the end of this task.
- (f) If there is not contaminated bleed air from the right engine, then continue.
- (g) Set the three ISLN switch-lights to the CLOSED position and the R ENG switch-light to the OFF position.
- (h) Stop the operation of the right engine, do this task: Usual Engine Stop, AMM TASK 71-00-00-800-837-H00.
- (9) Install the high pressure (HP) ground connector, do this task: HP Ground Connector Installation, AMM TASK 36-12-03-400-801.

G. Fault Isolation Procedure - Check the Cooling Packs for Oil Contamination

- (1) Do these steps to check for oil contamination from the conditioned air supplied by the left and right cooling packs with the engines as the pneumatic source:
 - (a) To access the ground air check valve for the left cooling pack, open the left ECS low pressure connection door, 195CL, do this task: Finding an Access Door or Panel on the Fuselage, AMM TASK 06-41-00-800-801

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- (b) To access the ground air check valve for the right cooling pack, open the right ECS low pressure connection door, 196CR, do this task: Finding an Access Door or Panel on the Fuselage, AMM TASK 06-41-00-800-801
- (c) Start the left and right engines and let the engines operate at ground idle speed. To start and operate the engines, do this task: Engine Start (Selection), AMM TASK 71-00-00-800-835-H00.
- (d) Set the L ENG and R ENG switch-lights, on the BLEED AIR module, to the ON position.
- (e) Set the L, C and R ISLN switch-lights, on the BLEED AIR module, to the AUTO position.
- (f) Open the ground air check valve for the left and the right cooling packs.
- (g) Supply conditioned air to the airplane with the left and right cooling packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
- (h) Stand near the left and right ground conditioned air connector and smell if there is contaminated air.

NOTE: You can do a smell check of the conditioned air from a different airplane if it is necessary to compare the conditioned air fumes.

- (i) If you smell contaminated air from a cooling pack, then do the steps that follow:
 - 1) Do the oil contamination removal task, To remove the oil contamination, do this task: Oil Contamination Removal from Air Conditioning and Pneumatic Systems, AMM TASK 21-00-01-100-801.
 - 2) If the oil contamination removal task does not remove the fumes do the steps that follow:
 - a) Replace the ozone converter for the oil contaminated cooling pack. To replace the ozone converter,
These are the tasks:
Ozone Converter Removal, AMM TASK 21-73-01-000-801,
Ozone Converter Installation, AMM TASK 21-73-01-400-801.
 - b) Replace the dual heat exchanger for the oil contaminated cooling pack. To replace the heat exchanger,
These are the tasks:
Dual Heat Exchanger Removal, AMM TASK 21-52-01-000-801,
Dual Heat Exchanger Installation, AMM TASK 21-52-01-400-801.
 - c) Replace the condenser/reheater for the oil contaminated cooling pack. To replace the condenser/reheater,
These are the tasks:
Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,
Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.
 - d) If there is smoke or fumes from the left cooling pack replace the flight deck mufflers. To replace the flight deck mufflers,
These are the tasks:
Flight Deck Air Distribution Muffler Removal, AMM TASK 21-22-01-000-801,
Flight Deck Air Distribution Muffler Installation, AMM TASK 21-22-01-400-801.
 - 3) Do the Repair Confirmation at the end of this task.

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- (j) If you do not smell contaminated air from a cooling pack, then do the step that follows and continue.
 - 1) Close the ground air check valve for the left and the right cooling packs.

H. Fault Isolation Procedure - Check the Hydraulic Reservoir Pressurization Modules

- (1) Make sure each of the three hydraulic reservoirs is depressurized. To depressurize the hydraulic reservoirs, do this task: Main Hydraulic System and the Reservoir Depressurization, AMM TASK 29-11-00-860-807
- (2) Get access to the flight deck or passenger compartment to smell the conditioned air for contamination.
- (3) Do these steps to make sure the center hydraulic reservoir pressurization module is not the source of the smoke or fumes:
 - (a) Start the APU and let the APU operation become stable. To start and operate the APU, do this task: APU Starting and Operation, AMM TASK 49-11-00-860-804.
 - (b) Supply conditioned air to the airplane with the left and right cooling packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (c) Pressurize the center hydraulic system reservoir. To pressurize the center hydraulic reservoir, do this task: Main Hydraulic System Pressurization, AMM TASK 29-11-00-860-801
 - (d) Operate the APU and cooling packs for 5 minutes.
 - (e) Stop the cooling packs, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804
 - (f) Set the BLEED AIR switch for the APU to the OFF position.
 - 1) Wait for approximately 5 minutes.

NOTE: This will permit hydraulic fluid to leak past the check valve if there is a failure.
 - (g) Set the BLEED AIR switch for the APU to the AUTO position.
 - (h) Supply conditioned air to the airplane with the left and right cooling packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (i) If the fumes are present, then there is a problem with the center hydraulic reservoir pressurization module. To replace the center hydraulic reservoir pressurization module, These are the tasks:

Center System Reservoir Pressurization Module and Components Removal, AMM TASK 29-11-26-000-801,

Center System Reservoir Pressurization Module Installation, AMM TASK 29-11-26-400-801.

 - 1) Do the Repair Confirmation at the end of this task.
 - (j) If no fumes are present, then continue.
- (4) Do these steps to make sure the left hydraulic reservoir pressurization module is not the source of the smoke or fumes:
 - (a) Start the APU and let the APU operation become stable. To start and operate the APU, do this task: APU Starting and Operation, AMM TASK 49-11-00-860-804.
 - (b) Supply conditioned air to the airplane with the left and right cooling packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.

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- (c) Pressurize the left hydraulic system reservoir. To pressurize the left hydraulic reservoir, do this task: Main Hydraulic System Pressurization, AMM TASK 29-11-00-860-801
 - (d) Operate the APU and cooling packs for 5 minutes.
 - (e) Stop the cooling packs, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804
 - (f) Set the BLEED AIR switch for the APU to the OFF position.
 - 1) Wait for approximately 5 minutes.
NOTE: This will permit hydraulic fluid to leak past the check valve if there is a failure.
 - (g) Set the BLEED AIR switch for the APU to the AUTO position.
 - (h) Supply conditioned air to the airplane with the left and right cooling packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (i) If the fumes are present, then there is a problem with the left hydraulic reservoir pressurization module. To replace the left hydraulic reservoir pressurization module, These are the tasks:
Left and Right System Reservoir Pressurization Module Removal, AMM TASK 29-11-25-000-801,
Left and Right System Reservoir Pressurization Module Installation, AMM TASK 29-11-25-400-801.
 - 1) Do the Repair Confirmation at the end of this task.
 - (j) If no fumes are present, then continue.
- (5) Do these steps to make sure the right hydraulic reservoir pressurization module is not the source of the smoke or fumes:
- (a) Start the APU and let the APU operation become stable. To start and operate the APU, do this task: APU Starting and Operation, AMM TASK 49-11-00-860-804.
 - (b) Supply conditioned air to the airplane with the left and right cooling packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (c) Pressurize the right hydraulic system reservoir. To pressurize the right hydraulic reservoir, do this task: Main Hydraulic System Pressurization, AMM TASK 29-11-00-860-801
 - (d) Operate the APU and cooling packs for 5 minutes.
 - (e) Stop the cooling packs, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804
 - (f) Set the BLEED AIR switch for the APU to the OFF position.
 - 1) Wait for approximately 5 minutes.
NOTE: This will permit hydraulic fluid to leak past the check valve if there is a failure.
 - (g) Set the BLEED AIR switch for the APU to the AUTO position.
 - (h) Supply conditioned air to the airplane with the left and right cooling packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (i) If the fumes are present, then there is a problem with the right hydraulic reservoir pressurization module. To replace the right hydraulic reservoir pressurization module, These are the tasks:



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Left and Right System Reservoir Pressurization Module Removal, AMM TASK 29-11-25-000-801,

Left and Right System Reservoir Pressurization Module Installation, AMM TASK 29-11-25-400-801.

- 1) Do the Repair Confirmation at the end of this task.
- (j) If no fumes are present, then continue.

I. Fault Isolation Procedure - Check the Flight Deck Equipment

- (1) Do these steps to make sure the F/D equipment is not the source of the smoke or fumes:
 - (a) Operate the F/D equipment, shoulder heaters, and light ballasts.
 - (b) Check the MAT for existing faults for the F/D equipment.
 - (c) Do the applicable fault isolation task(s) for any maintenance message(s) found.
 - (d) Operate the recirculation fans for approximately 3 minutes.
 - (e) If the fumes go away, then you corrected the fault.

J. Fault Isolation Procedure - Check the Cabin Equipment

- (1) Do these steps to make sure the cabin equipment is not the source of the smoke or fumes:
 - (a) Operate the cabin equipment, galley equipment, IFE equipment, door heaters, and light ballasts.
 - (b) Check the Cabin Management System for status messages or faults in the cabin equipment.
 - (c) Check the MAT for existing faults for the cabin and IFE equipment.
 - (d) Do the applicable fault isolation task(s) for any maintenance message(s) found.
 - (e) Operate the recirculation fans for approximately 3 minutes.
 - (f) If the fumes go away, then you corrected the fault.

K. Fault Isolation Procedure - Check Recirculation Fans and Cargo Compartments

- (1) Do these steps to make sure the RECIRC FANS are not the source of the smoke or fumes:
 - (a) Remove conditioned air supplied with the cooling packs. To remove conditioned air, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804
 - (b) Make sure the UPPER and LOWER RECIRC FANS switches are set to the ON position.
 - (c) Operate the recirculation fans for approximately 3 minutes.
 - (d) If the fumes continue, then replace the applicable recirculation fan(s).
 - Forward Upper Recirculation Fan Removal, AMM TASK 21-25-01-000-801,
 - Forward Upper Recirculation Fan Installation, AMM TASK 21-25-01-400-801.
 - Aft Upper Recirculation Fan Removal, AMM TASK 21-25-01-000-802,
 - Aft Upper Recirculation Fan Installation, AMM TASK 21-25-01-400-802.
 - Lower Recirculation Fan Removal, AMM TASK 21-25-07-000-801,
 - Lower Recirculation Fan Installation, AMM TASK 21-25-07-400-801.
 - 1) Operate the recirculation fans for approximately 3 minutes.
 - 2) If the fumes go away, then you corrected the fault.
 - 3) If the fumes continue, then do an inspection of the forward cargo compartment for unwanted materials.

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L. Repair Confirmation

- (1) Start the left and right engines. To start the engines, do this task: Engine Start (Selection), AMM TASK 71-00-00-800-835-H00
- (2) Start the APU. To start the APU, do this task: APU Starting and Operation, AMM TASK 49-11-00-860-804
- (3) Set the BLEED AIR switches, on the P5 panel, to the positions shown:
 - (a) Put the L ENG and R ENG switches to the ON position.
 - (b) Put the APU switch to the AUTO position.
 - (c) Put the L ISLN, C ISLN and R ISLN valve switches to the AUTO position.
- (4) Make sure the hydraulic reservoirs are pressurized. To pressurize the hydraulic reservoirs, do this task: Main Hydraulic System Pressurization, AMM TASK 29-11-00-860-801
- (5) Set the UPPER and LOWER RECIRC FANS switches to the applicable position as follows:
 - (a) If the fault is electrical, set the UPPER and LOWER RECIRC FANS switches to the ON position.
 - (b) If the fault is oil, fuel or hydraulic fluid, set the UPPER and LOWER RECIRC FANS switches to the OFF position.
- (6) Supply conditioned air with the applicable left or right cooling packs. To supply conditioned air, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803
- (7) Let the systems operate for approximately 5 minutes.
 - (a) If no fumes or smoke appear, then you have corrected the fault.

M. Put the airplane back to its usual condition:

- (1) Stop the operation of the left and right cooling packs, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804
- (2) Set the UPPER and LOWER RECIRC FANS switches to the ON position.
- (3) Stop the operation of the APU, do this task: APU Usual Shutdown, AMM TASK 49-11-00-860-805.
- (4) Stop the operation of the left and right engines, do this task: Usual Engine Stop, AMM TASK 71-00-00-800-837-H00.

————— **END OF TASK** —————

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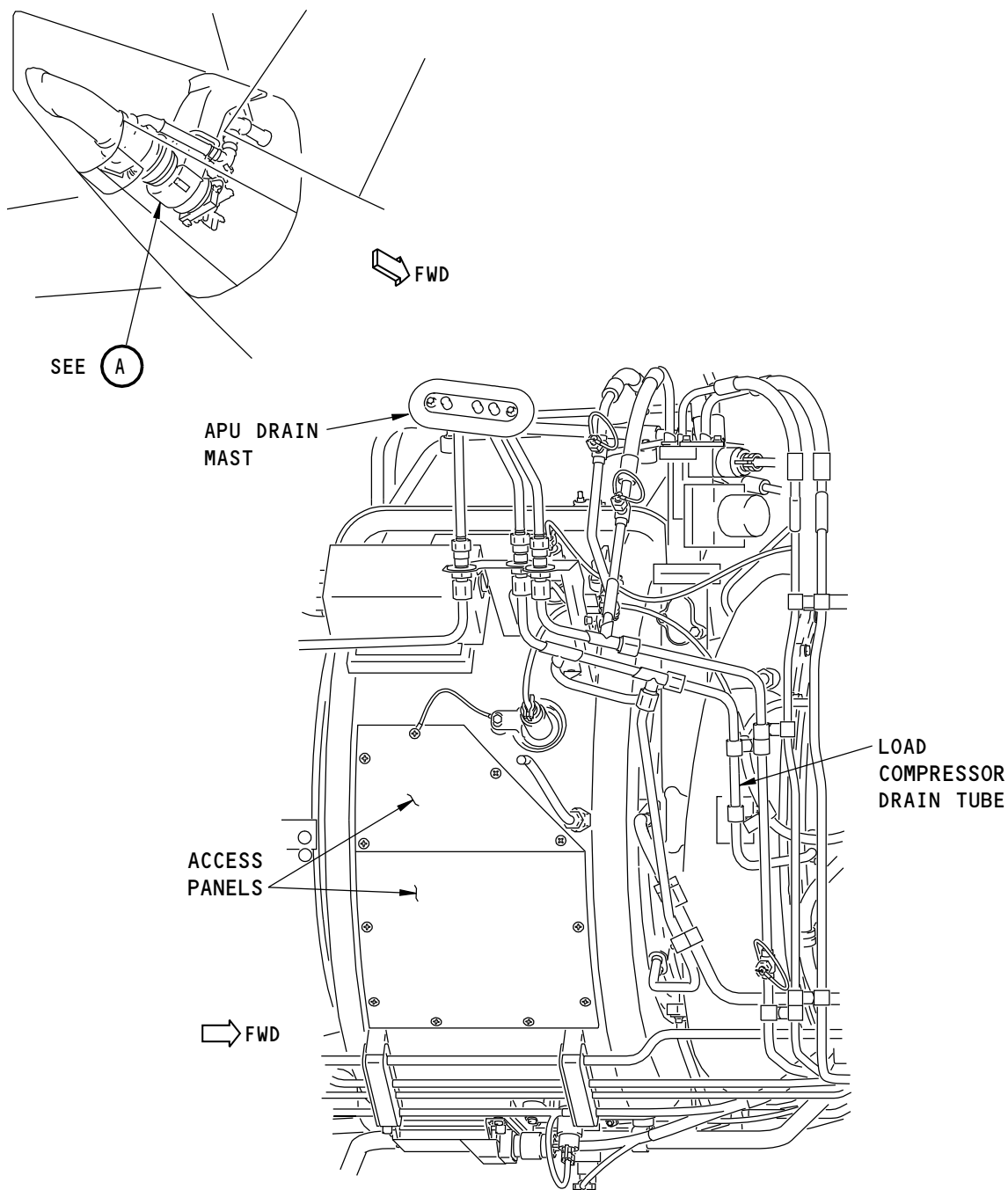
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(BOTTOM VIEW)

A

W40716 S0006690354_V2

APU Load Compressor Drain Tube
Figure 301/21-00-00-990-801

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801. Excessive Noise or Air Flow from Air Outlet - Fault Isolation

A. Initial Evaluation

- (1) Make sure the following systems are operational as necessary:
 - (a) The lavatory/galley ventilation system
 - (b) The equipment cooling system
 - (c) The supplemental heating system
 - (d) The cooling packs are on
 - (e) The pneumatic air supply system.
- (2) Do an inspection of the area where excessive noise or excessive airflow was reported.
 - (a) If the airflow is satisfactory, then there was an intermittent fault.
 - (b) If excessive noise or excessive airflow is found, then do the Fault Isolation Procedure below.

B. Fault Isolation Procedure

- (1) Examine the applicable air outlets:
 - (a) Listen to each air outlet in the applicable area to find the source of the excessive noise or the excessive airflow.
 - 1) If the air outlet is blocked, remove the blockage.
 - 2) If the air outlet is defective, replace the air outlet.
 - 3) If the air outlets are satisfactory, then continue.
- (2) Examine the air supply ducts:
 - (a) Remove the necessary side, ceiling, or floor panel(s) to get access to the air supply duct for the air outlet that makes noise.
 - (b) Listen to each connection of the air supply ducts to find which connection or which duct assembly contains the source of the unwanted noise.
 - 1) If the duct is blocked, remove the blockage.
 - 2) If the duct assembly is defective, repair or replace the duct assembly.
 - 3) If the duct connection has a loose or a defective flow control orifice, replace the orifice. To replace the orifice,
These are the tasks:
Flow Control Orifice Removal, AMM TASK 21-20-01-000-801,
Flow Control Orifice Installation, AMM TASK 21-20-01-400-801.
 - 4) If the air flow is satisfactory, you corrected the fault.

————— **END OF TASK** —————

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801. Gasper Air (Flight Deck) Problems - Fault Isolation

A. Initial Evaluation

- (1) Do this task: Supply Conditioned Air to the Airplane, AMM TASK 21-00-00-800-801.

NOTE: Make sure that all the gasper outlets are open.

- (a) If the airflow from the gasper outlets on the flight deck are not satisfactory, then do the Fault Isolation Procedure below.
- (b) If the airflow is satisfactory, then there was an intermittent fault.

B. Fault Isolation Procedure

- (1) Examine the gasper outlets.
 - (a) If the gasper outlet is not serviceable, then do these steps:
 - 1) Replace the gasper outlet.
 - 2) If the air flow is satisfactory, then you corrected the fault.
 - (b) If the gasper outlet is serviceable, then continue.
- (2) Examine the air distribution ducts for the applicable gasper outlet.
 - (a) If the air distribution ducts for the gasper outlet are disconnected or blocked, then do these steps:
 - 1) Re-connect the ducts or remove the blockage.
 - 2) If the air flow is satisfactory, then you corrected the fault.
- (3) Do this task: Remove Conditioned Air from the Airplane, AMM TASK 21-00-00-800-802.

————— **END OF TASK** —————

802. Flight Deck Low Airflow Problems - Fault Isolation

A. Initial Evaluation

- (1) Do this task: Supply Conditioned Air to the Airplane, AMM TASK 21-00-00-800-801.
 - (a) Make sure the left air conditioning pack is on.
 - (b) Do a check of the airflow from the flight deck air distribution outlets.
 - (c) If the airflow is not satisfactory, then do the Fault Isolation Procedure below.
 - (d) If the airflow is satisfactory, then there was an intermittent fault.

B. Fault Isolation Procedure

- (1) Use the MAT to look for a flight deck trim valve fault:
 - (a) To use the MAT, do this task: How to Use the Central Maintenance Computing System, AMM TASK 45-10-00-740-808.
 - (b) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - 4) 21 Cabin Temperature Control System.
 - (c) Look at the fault summary display.
 - (d) If you find maintenance message 21-20001, Zone Trim Modulating Valve for Flight Deck, then do these steps:

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- 1) Look at the FIM maintenance message index for chapter 21.
 - 2) Find maintenance message 21-20001 and do the specified fault isolation task.
 - 3) Do a check of the airflow from the flight deck air distribution outlets.
 - 4) If the airflow is satisfactory, then you corrected the fault.
- (e) If you do not find maintenance message 21-20001, then continue.
- (2) Examine the air distribution outlets.
- (a) If the airflow is not satisfactory at all air distribution outlets, then do these steps:
- 1) Check the distribution ducts between the mix manifold outlet and the captain's shoulder heater for air leakage or blockage.
NOTE: The flight deck air distribution ducts between the mix manifold and the captain's shoulder heater are located on the left side of the forward cargo compartment and the main equipment center. Reports of low airflow in the flight deck from the vent system is usually caused by blockage in the lower distribution duct orifice screens.
 - 2) If you find air leakage or blockage then do these steps,
 - a) Repair the air leakage or blockage.
<1> If the blockage is in the lower distribution duct orifice screens, replace the air supply flow control orifice.
These are the tasks:
Flow Control Orifice Removal, AMM TASK 21-20-01-000-801,
Flow Control Orifice Installation, AMM TASK 21-20-01-400-801.
 - b) If the air flow is satisfactory, then you corrected the fault.
- (b) If the airflow is not satisfactory at an individual air distribution outlet, then do these steps:
- 1) Examine the air distribution ducts for the applicable outlet.
 - 2) If the air distribution ducts for the outlet are disconnected or blocked, then do these steps:
 - a) Re-connect the ducts or remove the blockage.
 - b) If the airflow is satisfactory, then you corrected the fault.
- (c) If you find ice blockage, do these steps:
- NOTE:** Loss of airflow to the flight deck on the ground and during initial climb can be attributed to extended pack or single pack operation in a hot, humid environment with the cargo doors open. It is possible for the packs to produce a small amount of ice particles (which can accumulate) when set to full cold on the ground.
- 1) Set the left trim system to OFF.
 - a) Alternate: Set the lower recirculation fans to OFF.
 - 2) Move the flight deck temperature selector to the full warm position.
 - a) Wait 10 to 20 minutes for the ice blockage to melt.
 - 3) Set the left trim system to ON.
 - a) Alternate: Set the lower recirculation fans to ON.
- (3) Do this task: Remove Conditioned Air from the Airplane, AMM TASK 21-00-00-800-802.

————— **END OF TASK** —————

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801. Gasper Air (Passenger Cabin) Problems - Fault Isolation

A. Initial Evaluation

- (1) Do this task: Supply Conditioned Air to the Airplane, AMM TASK 21-00-00-800-801.

NOTE: Make sure that all the gasper outlets are open.

- (a) If the airflow from the gasper outlets in the passenger cabin are not satisfactory, then do the Fault Isolation Procedure below.
- (b) If the airflow is satisfactory, then there was an intermittent fault.

B. Fault Isolation Procedure

- (1) Examine the gasper outlets.
- (a) If the gasper outlet is not serviceable, then do these steps:
- 1) Replace the gasper outlet.
 - 2) If the air flow is satisfactory, then you corrected the fault.
- (b) If the gasper outlet is serviceable, then continue.
- (2) Examine the air distribution ducts for the applicable gasper outlet.
- (a) If the air distribution ducts for the gasper outlet are disconnected or blocked, then do these steps:
- 1) Re-connect the ducts or remove the blockage.
 - 2) If the air flow is satisfactory, then you corrected the fault.
- (3) Do this task: Remove Conditioned Air from the Airplane, AMM TASK 21-00-00-800-802.

————— **END OF TASK** —————

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803. Lower Recirculation Fan Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43520.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Push the LOWER RECIRC FANS switch to the ON position.
 - (b) Push the LOWER RECIRC FANS switch to the off position.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON or off position, then do the Fault Isolation Procedure below.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the ON and off positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the lower recirculation fan switch, M21314S5 (WDM 21-25-11).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Push the switch to the ON position.
 - 2) Push the switch to the off position.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON or off position, then continue.
- (2) Do this check of the wiring from the lower recirculation fan switch to the right overhead panel cardfile (OPCF-R):
 - (a) Remove the air conditioning module, M21314, from the P5 panel, but do not disconnect its electrical connectors.
 - (b) Disconnect connector M21314DS5 from the LOWER RECIRC FANS switch.
 - (c) Disconnect connector DM23217L from the OPCF-R, M23217.
 - (d) Do a wiring check between these pins of connector M21314DS5 at pilot's overhead panel, P5, and connector DM23217L, at the maintenance panel, P61 (WDM 21-25-11):

M21314DS5	DM23217L
pin 4	pin A5
pin 6	pin A7
pin 5	pin A6

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M21314DS5 and DM23217L.
 - 3) Re-install the air conditioning module, M21314.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Push the switch to the ON position.

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- b) Push the switch to the off position.
- 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connectors M21314DS5 and DM23217L.
- (h) Re-install the air conditioning module, M21314.
- (3) Replace the OPCF-R chassis, M23217 at the maintenance panel, P61.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,

Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Push the switch to the ON position.
 - 2) Push the switch to the off position.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.

————— **END OF TASK** —————

804. Upper Recirculation Fan Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43980.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Push the UPPER RECIRC FANS switch to the ON position.
 - (b) Push the UPPER RECIRC FANS switch to the off position.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON or off position, then do the Fault Isolation Procedure below.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the ON and off positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the upper recirculation fan switch, M21314S4 (WDM 21-25-21).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Push the switch to the ON position.
 - 2) Push the switch to the off position.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON or off position, then continue.

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- (2) Do this check of the wiring from the upper recirculation fan switch to the left overhead panel cardfile (OPCF-L):
- (a) Remove the air conditioning module, M21314, from the P5 panel, but do not disconnect its electrical connectors, M21314.
 - (b) Disconnect connector M21314DS4 from the upper recirculation fan switch.
 - (c) Disconnect connector DM23117L from the OPCF-L, M23117.
 - (d) Do a wiring check between these pins of connector M21314DS4 at pilot's overhead panel, P5, and connector DM23117L, at the maintenance panel, P61 (WDM 21-25-21):

M21314DS4	DM23117L
pin 4	pin B8
pin 6	pin B10
pin 5	pin B9

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M21314DS4 and DM23117L.
 - 3) Re-install the air conditioning module, M21314.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Push the switch to the ON position.
 - b) Push the switch to the off position.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
 - (g) Re-connect connectors M21314DS4 and DM23117L.
 - (h) Re-install the air conditioning module, M21314.
- (3) Replace the OPCF-L chassis, M23117 at the maintenance panel, P61.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Push the switch to the ON position.
 - 2) Push the switch to the off position.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.

————— **END OF TASK** —————

805. Fwd Upper Recirculation Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24400.

B. Initial Evaluation

- (1) Make sure the UPPER RECIRC FANS switch on the P5 panel is in the ON position.

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- (2) Do a check of this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	21	C21313	FWD UPR RECIRC FAN

- (a) Refer to this wiring diagram:(WDM 21-25-21):
- (b) If the circuit breaker is closed, then do these steps:
- 1) If the MAT shows ACTIVE for the maintenance message, then do this procedure below: Fault Isolation Procedure
 - 2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System
 - a) If the maintenance message shows on the ground test display, then do this procedure below: Fault Isolation Procedure
 - b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.
- (c) If the circuit breaker is open, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Open

C. Fault Isolation Procedure

- (1) Replace the forward upper recirculation fan, B21253.

These are the tasks:

Forward Upper Recirculation Fan Removal, AMM TASK 21-25-01-000-801,

Forward Upper Recirculation Fan Installation, AMM TASK 21-25-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the left ECS miscellaneous card (ECSCMC), A14, in the left systems cardfile (LSCF), P85.

These are the tasks:

ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the ground wiring at the connector for the fan:
- (a) Disconnect connector DB21253 from the fan, B21253.
- (b) Do a continuity check between pins 5 of connector DB21253 and structure ground (WDM 21-25-21).

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- 1) If there is not continuity between pins 5 of connector DB21251 and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21253.
 - c) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pins 5 of connector DB21253 and structure ground, then continue.
- (4) Do this check of the wiring between the left ECSMC and the fan:
- (a) Re-connect connector DB21253.
 - (b) Remove the left ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (c) Do a continuity check between pin 84 of connector XA14 at the LSCF, P85, and structure ground (WDM 21-25-21).
 - (d) If there is not continuity between pin 84 of connector XA14 and structure ground, then do these steps:
 - 1) Repair the wiring between these pins of connector XA14 in the P85 panel, and connector DB21253 at the fan.

XA14	DB21253
pin 84	pin 6

- 2) Re-install the left ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If there is continuity between pin 84 of connector XA14 and structure ground, then continue.
- (f) Re-install the left ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (5) Do this check of the wiring between the forward upper recirculation fan relay, K21585 and the forward upper recirculation fan, B21253:
- (a) Disconnect connector DB21253 from the fan.
 - (b) Remove the relay, K21585 from the P110 panel (WDM 21-25-21).
 - (c) Do a wiring check between these pins of connector DK21585 at the P110 panel and connector DB21253 at the fan, B21253 (WDM 21-25-21):

DK21585	DB21253
pin A1	pin 1
pin B1	pin 2
pin C1	pin 3

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- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21253.
 - 3) Re-install the relay, K21585.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21253.
- (g) Re-install the relay, K21585.
- (6) Do a check of the internal wiring in the P110 panel for the forward upper recirculation fan circuit (WDM 21-25-21).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

D. Fault Isolation Procedure - Circuit Breaker Open

- (1) Examine the terminal connections for the circuit breaker.
 - (a) If you find a problem with the terminal connections for the circuit breaker, then do these steps:
 - 1) Repair the terminal connections for the circuit breaker.
 - 2) Make sure that this circuit breaker is closed:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	21	C21313	FWD UPR RECIRC FAN

- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (b) If you do not find a problem with the terminal connections for the circuit breaker, then continue.
- (2) Replace this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	21	C21313	FWD UPR RECIRC FAN

- (a) Refer to this wiring diagram:(WDM 21-25-21):
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.

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- (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the CB monitor, R21313, and do this check of the wiring:WDM 21-25-21
 - (a) Remove the CB monitor, R21313.
 - (b) Disconnect connector DP441 from the P110 electrical unit, M24400.
 - (c) Check the wiring between terminal A2 of CB21313 and terminal A-L of CB monitor, R21313.
 - (d) Check the wiring between terminal A-M of CB monitor, R21313 and and pin 74 of connector DP441at the P110 electrical unit, M24400.
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DP441 to M24400.
 - 3) Re-install CB monitor R21313.
 - (f) If you do not find a problem with the wiring, install a new CB monitor, R21313.
 - (g) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (h) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (i) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the forward upper recirculation fan, B21253.

These are the tasks:

Forward Upper Recirculation Fan Removal, AMM TASK 21-25-01-000-801,

Forward Upper Recirculation Fan Installation, AMM TASK 21-25-01-400-801.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the wiring between the left power management panel, P110 and the forward upper recirculation fan, B21253:
 - (a) Disconnect connector DB21253 from the fan.
 - (b) Disconnect connector D11027P from the P110 panel (WDM 21-25-21).
 - (c) Do a wiring check between these pins of connector D11027P at the P110 panel and connector DB21253 at the fan, B21253 (WDM 21-25-21):

D11027P	DB21253
pin 13	pin 1
pin 14	pin 2
pin 15	pin 3

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.

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- 2) Re-connect connectors DB21253 and D11027P.
- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connectors DB21253 and D11027P.
- (6) Do a check of the internal wiring in the P110 panel for the forward upper recirculation fan circuit (WDM 21-25-21).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

806. Aft Upper Recirculation Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24500.

B. Initial Evaluation

- (1) Make sure the UPPER RECIRC FANS switch on the P5 panel is in the ON position.
- (2) Do a check of this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C21314	AFT UPR RECIRC FAN

- (a) Refer to this wiring diagram (WDM 21-25-22):
- (b) If the circuit breaker is closed, then do these steps:
 - 1) If the MAT shows ACTIVE for the maintenance message, then do this procedure below: Fault Isolation Procedure
 - 2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System
 - a) If the maintenance message shows on the ground test display, then do this procedure below: Fault Isolation Procedure
 - b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.
- (c) If the circuit breaker is open, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Open

C. Fault Isolation Procedure

- (1) Replace the aft upper recirculation fan, B21254.

These are the tasks:

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Aft Upper Recirculation Fan Removal, AMM TASK 21-25-01-000-802,

Aft Upper Recirculation Fan Installation, AMM TASK 21-25-01-400-802.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the right ECS miscellaneous card (ECSCMC), A14, in the right systems cardfile (RSCF), P84.

These are the tasks:

ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the ground wiring at the connector for the fan:
- (a) Disconnect connector DB21254 from the fan, B21254.
 - (b) Do a continuity check between pins 5 of connector DB21254, and structure ground (WDM 21-25-22).
 - 1) If there is not continuity between pins 5 of connector DB21254 and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21254.
 - c) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pins 5 of connector DB21254 and structure ground, then continue.
- (4) Do this check of the wiring between the right ECSCMC and the fan:
- (a) Re-connect connector DB21254.
 - (b) Remove the right ECSCMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
 - (c) Do a continuity check between pin 84 of connector XA14 at the RSCF, P84, and structure ground (WDM 21-25-22).
 - (d) If there is not continuity between pin 84 of connector XA14 and structure ground, then do these steps:
 - 1) Repair the wiring between these pins of connector XA14 in the P84 panel, and connector DB21254 at the fan.

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XA14

pin 84 pin 6

DB21254

- 2) Re-install the right ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If there is continuity between pin 84 of connector XA14 and structure ground, then continue.
- (f) Re-install the right ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (5) Do this check of the wiring between the aft upper recirculation fan relay, K21586 and the aft upper recirculation fan, B21254:
 - (a) Disconnect connector DB21254 from the fan.
 - (b) Remove the relay, K21586 from the P210 panel (WDM 21-25-22).
 - (c) Do a wiring check between these pins of connector DK21586 at the P210 panel and connector DB21254 at the fan, B21254 (WDM 21-25-22):

DK21586

pin A1 pin 1
pin B1 pin 2
pin C1 pin 3

DB21254

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21254.
 - 3) Re-install the relay, K21586.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21254.
- (g) Re-install the relay, K21586.
- (6) Do a check of the internal wiring in the P210 panel for the aft upper recirculation fan circuit (WDM 21-25-22).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

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D. Fault Isolation Procedure - Circuit Breaker Open

- (1) Examine the terminal connections for the circuit breaker.
 - (a) If you find a problem with the terminal connections for the circuit breaker, then do these steps:
 - 1) Repair the terminal connections for the circuit breaker.
 - 2) Make sure that this circuit breaker is closed:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C21314	AFT UPR RECIRC FAN

- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (b) If you do not find a problem with the terminal connections for the circuit breaker, then continue.
- (2) Replace this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C21314	AFT UPR RECIRC FAN

- (a) Refer to this wiring diagram (WDM 21-25-22):
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the CB monitor, R21314, and do this check of the wiring:WDM 21-25-22
 - (a) Remove the CB monitor, R21314.
 - (b) Disconnect connector DP414 from the P210 electrical unit, M24403.
 - (c) Check the wiring between terminal A2 of CB21314 and terminal A-A of CB monitor, R21314.
 - (d) Check the wiring between terminal A-B of CB monitor, R21314 and and pin 85 of connector DP414 at the P210 electrical unit, M24403.
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DP414 to M24403.
 - 3) Re-install CB monitor R21314.
 - (f) If you do not find a problem with the wiring, install a new CB monitor, R21314.
 - (g) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (h) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (i) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the aft upper recirculation fan, B21254.
These are the tasks:
Forward Upper Recirculation Fan Removal, AMM TASK 21-25-01-000-801,
Forward Upper Recirculation Fan Installation, AMM TASK 21-25-01-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the wiring between the right power management panel, P210 and the aft upper recirculation fan, B21254:
 - (a) Disconnect connector DB21254 from the fan.
 - (b) Disconnect connector D21027P from the P210 panel (WDM 21-25-22).
 - (c) Do a wiring check between these pins of connector D21027P at the P210 panel and connector DB21254 at the fan, B21254 (WDM 21-25-22):

D21027P	DB21254
pin 1	pin 1
pin 2	pin 2
pin 3	pin 3
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DB21254 and D21027P.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-connect connectors DB21254 and D21027P.
- (6) Do a check of the internal wiring in the P210 panel for the aft upper recirculation fan circuit (WDM 21-25-22).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

807. Left Lower Recirculation Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24600.

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B. Initial Evaluation

- (1) Make sure the LOWER RECIRC FANS switch on the P5 panel is in the ON position.
- (2) Make sure the L PACK switch and the R PACK switch are set to the OFF position.

NOTE: The L PACK switch and the R PACK switch are on the Air Conditioning Module in the pilot's overhead panel, P5.

- (3) Do a check of this circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	18	C21315	L LWR RECIRC FAN

- (a) Refer to this wiring diagram (WDM 21-25-11):
- (b) If the circuit breaker is closed, then do these steps:
 - 1) If the MAT shows ACTIVE for the maintenance message, then do this procedure below: Fault Isolation Procedure
 - 2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System
 - a) If the maintenance message shows on the ground test display, then do this procedure below: Fault Isolation Procedure
 - b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.
- (c) If the circuit breaker is open, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Open

C. Fault Isolation Procedure

- (1) Replace the left lower recirculation fan, B21251.

These are the tasks:

Lower Recirculation Fan Removal, AMM TASK 21-25-07-000-801,

Lower Recirculation Fan Installation, AMM TASK 21-25-07-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the left ECS miscellaneous card (ECSCMC), A14, in the left systems cardfile (LSCF), P85.

These are the tasks:

ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.

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- (3) Replace the left lower recirculation fan relay, K21587 in the P110 panel (WDM 21-25-11).
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the left lower recirculation fan current monitor, M24632 in the P110 panel, (WDM 21-25-11).
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE ELMS PANELS BEFORE YOU REMOVE COMPONENTS OF THE PANELS. IF YOU DO NOT REMOVE ELECTRICAL POWER, DAMAGE TO EQUIPMENT CAN OCCUR.

- (5) Do a check of the Signal Interface Unit (SIU) 2, M24505 in the P110 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) on the existing faults display, then you corrected the fault.

NOTE: Wait up to 5 minutes, or until the maintenance message shows, after there is power to the ELMS panel before you read the status of the maintenance message from the MAT.
 - (c) If the maintenance message shows on the existing fault display, then continue.
- (6) Do this check of the ground wiring at the connector for the fan:
 - (a) Disconnect connector DB21251 from the fan, B21251.
 - (b) Do a continuity check between pins 5 of connector DB21251, and structure ground (WDM 21-25-11).
 - 1) If there is not continuity between pins 5 of connector DB21251 and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21251.
 - c) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pins 5 of connector DB21251 and structure ground, then continue.

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- (7) Do this check of the wiring between the left ECSMC and the fan:
- Re-connect connector DB21251.
 - Remove the left ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - Do a continuity check between pin 80 of connector XA14 at the LSCF, P85, and structure ground (WDM 21-25-11).
 - If there is not continuity between pin 80 of connector XA14 and structure ground, then do these steps:
 - Repair the wiring between these pins of connector XA14 in the P85 panel, and connector DB21251 at the fan.

XA14	DB21251
pin 80	pin 6

- Re-install the left ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - If the maintenance message does not show on the ground test display, you corrected the fault.
 - If there is continuity between pin 80 of connector XA14 and structure ground, then continue.
 - Re-install the left ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (8) Do this check of the wiring between the left lower recirculation fan relay, K21587 and the left lower recirculation fan, B21251:
- Disconnect connector DB21251 from the fan.
 - Remove the relay, K21587 from the P110 panel (WDM 21-25-11).
 - Do a wiring check between these pins of connector DK21587 at the P110 panel and connector DB21251 at the fan, B21251 (WDM 21-25-11):

DK21587	DB21251
pin A1	pin 1
pin B1	pin 2
pin C1	pin 3

- If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - Re-connect connector DB21251.
 - Re-install the relay, K21587.
 - Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - If the maintenance message does not show on the ground test display, you corrected the fault.
- If you do not find a problem with the wiring, then continue.

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- (f) Re-connect connector DB21251.
- (g) Re-install the relay, K21587.
- (9) Do a check of the internal wiring in the P110 panel for the left lower recirculation fan circuit (WDM 21-25-11).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

D. Fault Isolation Procedure - Circuit Breaker Open

- (1) Look at the lower left recirculation fan part number.
- (2) If the fan is part number S210W003-3, then replace the fan with a part number S210W003-4 or part number S210W003-8 fan.

NOTE: Part number S210W003-3 is a high capacity fan that is installed in the right hand position. A standard capacity fan must be installed in the left hand position.

- (3) If the fan is part number S210W003-4 and there is a history of opening the circuit breaker, then you can close the circuit breaker or replace the fan with a part number S210W003-8 fan.

NOTE: Fan part number S210W003-4 can cause nuisance circuit breaker opening due to high inrush current. Fan part number S210W003-8 can be installed to reduce the occurrence of nuisance circuit breaker opening.

- (4) If the fan is part number S210W003-8, then continue.
- (5) Examine the terminal connections for the circuit breaker.
 - (a) If you find a problem with the terminal connections for the circuit breaker, then do these steps:
 - 1) Repair the terminal connections for the circuit breaker.
 - 2) Make sure that this circuit breaker is closed:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	18	C21315	L LWR RECIRC FAN

- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (b) If you do not find a problem with the terminal connections for the circuit breaker, then continue.
- (6) Replace this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	18	C21315	L LWR RECIRC FAN

- (a) Refer to this wiring diagram (WDM 21-25-11):

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- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.
- (7) Replace the left lower recirculation fan, B21251.
These are the tasks:
Lower Recirculation Fan Removal, AMM TASK 21-25-07-000-801,
Lower Recirculation Fan Installation, AMM TASK 21-25-07-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (8) Do this check of the wiring between the left power management panel, P110 and the left lower recirculation fan, B21251:
 - (a) Disconnect connector DB21251 from the fan.
 - (b) Disconnect connector D11033P from the P110 panel (WDM 21-25-11).
 - (c) Do a wiring check between these pins of connector D11033P at the P110 panel and connector DB21251 at the fan, B21251 (WDM 21-25-11):

D11033P	DB21251
pin 30	pin 1
pin 29	pin 2
pin 28	pin 3
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DB21251 and D11033P.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connectors DB21251 and D11033P.
- (9) Do a check of the internal wiring in the P110 panel for the left lower recirculation fan circuit (WDM 21-25-11).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

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808. Right Lower Recirculation Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24700.

B. Initial Evaluation

- (1) Do these steps to make sure that the electronic load control unit (ELCU), M21201, for the right lower recirculation fan, B21252, is not latched:
 - (a) Put the LOWER RECIRC FANS switch on the P5 panel in the OFF position.
 - (b) Put the LOWER RECIRC FANS switch on the P5 panel in the ON position.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Determine if the failure of the lower recirculation fan, B21252, was caused by a defective ELCU contactor.

- (a) Do a phase-to-phase resistance check.

- 1) Measure the resistance between these pins (WDM 21-25-12).

DB21252		DB21252
1	.....	2
1	.....	3
2	.....	3

- (b) If the difference between the resistances is not 5% or less, there could be a defective ELCU contactor. Do these steps:

- 1) Examine the fan for one or more of these conditions.

- a) A large quantity of smoke is seen during the failure of the fan.
 - b) The fan has a pungent smell during or after it has failed.
 - c) The fan impeller is locked in one position.
 - d) Examine the bearing capsule through the fan check valve for a dark tacky substance on or around the bearing capsule. Figure 301 (Sheet 1)

- 2) If any of these conditions are observed, replace the electrical load control unit (ELCU), M21201, in the P200 panel for the lower recirculation fan.

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,

ELCU Installation, AMM TASK 24-51-05-400-801.

- (2) Replace the right lower recirculation fan, B21252.

These are the tasks:

Lower Recirculation Fan Removal, AMM TASK 21-25-07-000-801,

Lower Recirculation Fan Installation, AMM TASK 21-25-07-400-801.

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- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the right ECS miscellaneous card (ECSMC), A14, in the right systems cardfile (RSCF), P84.
- These are the tasks:
- ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the right lower recirculation fan ELCU, M21201, in the Right Power Panel, P200 (WDM 21-25-12).
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the power panel controller, M24501, in the P200 panel.
- These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, SYSTEM TEST, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (6) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (7) Do this check of the ground wiring at the connector for the fan:
- (a) Disconnect connector DB21252 from the fan, B21252.



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- (b) Do a continuity check between pins 5 of connector DB21252, and structure ground (WDM 21-25-12).
- 1) If there is not continuity between pins 5 of connector DB21252 and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21252.
 - c) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pins 5 of connector DB21252 and structure ground, then continue.
- (8) Do this check of the wiring between the right ECSMC and the fan:
- (a) Re-connect connector DB21252.
 - (b) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (c) Do a continuity check between pin 80 of connector XA14 at the RSCF, P84, and structure ground (WDM 21-25-12).
 - (d) If there is not continuity between pin 80 of connector XA14 and structure ground, then do these steps:
 - 1) Repair the wiring between these pins of connector XA14 in the P84 panel, and connector DB21252 at the fan.

XA14	DB21252
pin 80	pin 6
 - 2) Re-install the right ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If there is continuity between pin 80 of connector XA14 and structure ground, then continue.
 - (f) Re-install the right ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (9) Do this check of the wiring between the ELCU, M21201, and the fan, B21252:
- (a) Remove the right lower recirculation fan ELCU, M21201, in the Right Power Panel, P200 (WDM 21-25-12).
 - (b) Do a continuity check between these pairs of pins at connector DM21201 in the Right Power Panel, P200.
 - 1) Pin A2 and Pin B2
 - 2) Pin B2 and Pin C2
 - (c) If there is not continuity at each pair of pins of connector DM21201, then do these steps:

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- 1) Disconnect connector DB21252 from the fan, B21252.
- 2) Do a wiring check between these pins of connector DM21201 on the P200 panel and connector DB21261 at the fan, B21252 (WDM 21-25-12):

DM21201	DB21252
pin A2	pin 1
pin B2	pin 2
pin C2	pin 3

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reinstall the ELCU, M21201.
 - c) Reinstall connector DB21252.
 - d) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - e) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If there is continuity between each pair of pins of connector DM21201, then continue.
- (10) Do a check of the internal wiring in the P210 panel for the right lower recirculation fan circuit (WDM 21-25-12).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

809. Left Lower Recirculation Fan Relay or Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24601.

B. Initial Evaluation

- (1) Set the LOWER RECIRC FANS switch on the P5 panel to the ON position.
- (2) Close this circuit breaker:

Left Power Management Panel, P110

Row	Col	Number	Name
A	18	C21315	L LWR RECIRC FAN

- (a) If the circuit breaker opens when you try to close it, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Open.
- (3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System
 - (a) If the maintenance message shows on the ground test display, then do this check:

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- 1) If the circuit breaker is open, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Open.
- 2) If the circuit breaker stayed closed, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Closed.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure - Circuit Breaker Open

- (1) Replace this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	18	C21315	L LWR RECIRC FAN

- (a) Refer to this wiring diagram (WDM 21-25-11):
- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the CB monitor, R21315, and do this check of the wiring: WDM 21-25-11
 - (a) Remove the CB monitor, R21315.
 - (b) Disconnect connector DP441 from the P110 electrical unit, M24400.
 - (c) Check the wiring between terminal A2 of CB21315 and terminal A-E of CB monitor, R21315.
 - (d) Check the wiring between terminal A-F of CB monitor, R21315 and pin 62 of connector DP441 at the P110 electrical unit, M24400.
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DP441 to M24400.
 - 3) Re-install CB monitor R21315.
 - (f) If you do not find a problem with the wiring, install a new CB monitor, R21315.
 - (g) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (h) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (i) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the left lower recirculation fan, B21251.

These are the tasks:

Lower Recirculation Fan Removal, AMM TASK 21-25-07-000-801,
Lower Recirculation Fan Installation, AMM TASK 21-25-07-400-801.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the recirculation fan relay, K21587, in the P110 panel (WDM 21-25-11).
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the wiring between the left lower recirculation fan relay, K21587 and the left lower recirculation fan, B21251:
 - (a) Disconnect connector DB21251 from the fan.
 - (b) Remove the relay, K21587 from the P110 panel (WDM 21-25-11).
 - (c) Do a wiring check between these pins of connector DK21587 at the P110 panel and connector DB21251 at the fan, B21251 (WDM 21-25-11):

DK21587	DB21251
pin A1	pin 1
pin B1	pin 2
pin C1	pin 3

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21251.
 - 3) Re-install the relay, K21587.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-connect connector DB21251.
 - (g) Re-install the relay, K21587.
- (6) Do a check of the internal wiring in the P110 panel for the left lower recirculation fan circuit (WDM 21-25-11).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

D. Fault Isolation Procedure - Circuit Breaker Closed

- (1) Replace this circuit breaker:

Left Power Management Panel, P110

Row	Col	Number	Name
A	18	C21315	L LWR RECIRC FAN

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- (a) Refer to this wiring diagram (WDM 21-25-11):
- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the CB monitor, R21315, and do this check of the wiring: WDM 21-25-11
 - (a) Remove the CB monitor, R21315.
 - (b) Disconnect connector DP441 from the P110 electrical unit, M24400.
 - (c) Check the wiring between terminal A2 of CB21315 and terminal A-E of CB monitor, R21315.
 - (d) Check the wiring between terminal A-F of CB monitor, R21315 and pin 62 of connector DP441 at the P110 electrical unit, M24400.
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DP441 to M24400.
 - 3) Re-install CB monitor R21315.
 - (f) If you do not find a problem with the wiring, install a new CB monitor, R21315.
 - (g) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (h) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (i) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P110 panel for the left lower recirculation fan, B21251 circuit (WDM 21-25-11):
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

812. Right Lower Recirculation Fan Relay or Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24701.

B. Initial Evaluation

- (1) Do these steps to make sure that the electronic load control unit (ELCU), M21201, for the right lower recirculation fan, B21252, is not latched:
 - (a) Put the LOWER RECIRC FANS switch on the P5 panel in the OFF position.
 - (b) Put the LOWER RECIRC FANS switch on the P5 panel in the ON position.

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- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right lower recirculation fan ELCU, M21201, in the Right Power Panel, P200 (WDM 21-25-12).
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the power panel controller, M24501, in the P200 panel.

These are the tasks:

Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, SYSTEM TEST, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P210 panel for the right lower recirculation fan circuit (WDM 21-25-12).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

813. Fwd Upper Recirculation Fan Relay or Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24401.

B. Initial Evaluation

- (1) Set the UPPER RECIRC FANS switch on the P5 panel to the ON position.
- (2) Close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	21	C21313	FWD UPR RECIRC FAN

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- (a) If the circuit breaker opens when you try to close it, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Open.
- (3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System
 - (a) If the maintenance message shows on the ground test display, then do this check:
 - 1) If the circuit breaker is open, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Open.
 - 2) If the circuit breaker stayed closed, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Closed.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure - Circuit Breaker Open

- (1) Replace this circuit breaker:

(WDM 21-25-21)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	21	C21313	FWD UPR RECIRC FAN

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the CB monitor, R21313, and do this check of the wiring:WDM 21-25-21
 - (a) Remove the CB monitor, R21313.
 - (b) Disconnect connector DP441 from the P110 electrical unit, M24400.
 - (c) Check the wiring between terminal A2 of CB21313 and terminal A-L of CB monitor, R21313.
 - (d) Check the wiring between terminal A-M of CB monitor, R21313 and and pin 74 of connector DP441at the P110 electrical unit, M24400.
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DP441 to M24400.
 - 3) Re-install CB monitor R21313.
 - (f) If you do not find a problem with the wiring, install a new CB monitor, R21313.
 - (g) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (h) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (i) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the forward upper recirculation fan, B21253.

These are the tasks:

Forward Upper Recirculation Fan Removal, AMM TASK 21-25-01-000-801,

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Forward Upper Recirculation Fan Installation, AMM TASK 21-25-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the recirculation fan relay, K21585, in the P110 panel (WDM 21-25-21).
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the wiring between the forward upper recirculation fan relay, K21585 and the forward upper recirculation fan, B21253:
 - (a) Disconnect connector DB21253 from the fan.
 - (b) Remove the relay, K21585 from the P110 panel (WDM 21-25-21).
 - (c) Do a wiring check between these pins of connector DK21585 at the P110 panel and connector DB21253 at the fan, B21253 (WDM 21-25-21):

DK21585	DB21253
pin A1	pin 1
pin B1	pin 2
pin C1	pin 3

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21253.
 - 3) Re-install the relay, K21585.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-connect connector DB21253.
 - (g) Re-install the relay, K21585.
- (6) Do a check of the internal wiring in the P110 panel for the forward upper recirculation fan circuit (WDM 21-25-21).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

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D. Fault Isolation Procedure - Circuit Breaker Closed

- (1) Replace this circuit breaker:
(WDM 21-25-21)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	21	C21313	FWD UPR RECIRC FAN

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the internal wiring in the P110 panel for the forward upper recirculation fan, B21253 circuit (WDM 21-25-21).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

814. Aft Upper Recirculation Fan Relay or Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24501.

B. Initial Evaluation

- (1) Set the UPPER RECIRC FANS switch on the P5 panel to the ON position.
- (2) Close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C21314	AFT UPR RECIRC FAN

- (a) If the circuit breaker opens when you try to close it, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Open.
- (3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System
 - (a) If the maintenance message shows on the ground test display, then do this check:
 - 1) If the circuit breaker is open, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Open.
 - 2) If the circuit breaker stayed closed, then do this procedure below: Fault Isolation Procedure - Circuit Breaker Closed.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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C. Fault Isolation Procedure - Circuit Breaker Open

- (1) Replace this circuit breaker:

(WDM 21-25-22)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C21314	AFT UPR RECIRC FAN

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the CB monitor, R21314, and do this check of the wiring:WDM 21-25-22
- (a) Remove the CB monitor, R21314.
- (b) Disconnect connector DP414 from the P210 electrical unit, M24403.
- (c) Check the wiring between terminal A2 of CB21314 and terminal A-A of CB monitor, R21314.
- (d) Check the wiring between terminal A-B of CB monitor, R21314 and and pin 85 of connector DP414 at the P210 electrical unit, M24403.
- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DP414 to M24403.
 - 3) Re-install CB monitor R21314.
- (f) If you do not find a problem with the wiring, install a new CB monitor, R21314.
- (g) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (h) If the maintenance message does not show on the ground test display, you corrected the fault.
- (i) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the aft upper recirculation fan, B21254.
- These are the tasks:
- Aft Upper Recirculation Fan Removal, AMM TASK 21-25-01-000-802,
- Aft Upper Recirculation Fan Installation, AMM TASK 21-25-01-400-802.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the recirculation fan relay, K21586, in the P210 panel (WDM 21-25-22).
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the wiring between the aft upper recirculation fan relay, K21586 and the aft upper recirculation fan, B21254:
 - (a) Disconnect connector DB21254 from the fan.
 - (b) Remove the relay, K21586 from the P210 panel (WDM 21-25-22).
 - (c) Do a wiring check between these pins of connector DK21586 at the P210 panel and connector DB21254 at the fan, B21254 (WDM 21-25-22):

DK21586	DB21254
pin A1	pin 1
pin B1	pin 2
pin C1	pin 3

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21254.
 - 3) Re-install the relay, K21586.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21254.
- (g) Re-install the relay, K21586.
- (6) Do a check of the internal wiring in the P210 panel for the aft upper recirculation fan circuit (WDM 21-25-22).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

D. Fault Isolation Procedure - Circuit Breaker Closed

- (1) Replace this circuit breaker:
(WDM 21-25-22)

Right Power Management Panel, P210

Row	Col	Number	Name
B	5	C21314	AFT UPR RECIRC FAN

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the CB monitor, R21314, and do this check of the wiring:WDM 21-25-22
 - (a) Remove the CB monitor, R21314.
 - (b) Disconnect connector DP414 from the P210 electrical unit, M24403.
 - (c) Check the wiring between terminal A2 of CB21314 and terminal A-A of CB monitor, R21314.
 - (d) Check the wiring between terminal A-B of CB monitor, R21314 and and pin 85 of connector DP414 at the P210 electrical unit, M24403.
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DP414 to M24403.
 - 3) Re-install CB monitor R21314.
 - (f) If you do not find a problem with the wiring, install a new CB monitor, R21314.
 - (g) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (h) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (i) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P210 panel for the aft upper recirculation fan, B21254 circuit (WDM 21-25-22).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

815. EICAS Message RECIRC FANS OFF - Fault Isolation

A. Description

- (1) This message shows when one or both RECIRC FANS switches are in the off position.

B. Fault Isolation Procedure

- (1) To put the recirculation system back to the normal mode, set both UPPER and LOWER RECIRC FANS switches to ON.
 - (a) Do the Repair Confirmation at the end of this task.

C. Repair Confirmation

- (1) If the Maintenance Access Terminal (MAT) does not show the EICAS MEMO, you corrected the problem.

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816. Recirculation Fan Ground Test Problems - Fault Isolation

A. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Faults page on the MAT.
 - (a) Select 21 Cabin Temperature Control System.
 - (b) Look for maintenance messages related to ARINC 629 communication to the Cabin Temperature Controller (CTC).
 - 1) Find each maintenance message in the applicable FIM maintenance message index.
 - 2) Do the specified fault isolation task for each maintenance message.
 - 3) Do the ground test which caused the fault code to show on the ground test display.
 - 4) If the fault code does not show on the ground test display, then you corrected the fault

————— **END OF TASK** —————

818. L LWR RECIRC FAN Relay Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-50012.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the recirculation fan relay, K21587 in the P110 panel (WDM 21-25-11).
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE ELMS PANELS BEFORE YOU REMOVE COMPONENTS OF THE PANELS. IF YOU DO NOT REMOVE ELECTRICAL POWER, DAMAGE TO EQUIPMENT CAN OCCUR.

- (2) Do a check of the Signal Interface Unit (SIU) 2, M24505 in the P110 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.

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- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) on the existing faults display, then you corrected the fault.

NOTE: Wait up to 5 minutes, or until the maintenance message shows, after there is power to the ELMS panel before you read the status of the maintenance message from the MAT.

- (c) If the maintenance message shows on the existing fault display, then continue.
- (3) Do a check of the internal wiring for the left lower recirculation fan relay circuit in the P110 panel (WDM 21-25-11):
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

———— END OF TASK ————

819. Relay (FWD UPR RECIRC FAN RLY) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-50011.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check to see if the recirculation fan relay, K21585, is energized:
 - (a) Disconnect electrical connector DM24505B from the Signal Interface Unit (2), M24505 (WDM 21-25-21).
 - (b) Do a check for 28V DC between pin 41 of electrical connector DM24505B and the structure ground (WDM 21-25-21).
 - (c) If there is not 28V DC between pin 41 and the structure ground, do the steps that follow:
 - 1) Replace the recirculation fan relay, K21585, in the P110 panel (WDM 21-25-21).
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
 - (d) If there is 28V DC between pin 41 and the structure ground, then re-connect connector DM24505B and continue.

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- (2) Do this check of the recirculation fan relay, K21585:
- (a) Disconnect electrical connector DM24518 from the current monitor, M24518 (WDM 21-25-21).
 - (b) Do a check for 115V AC between pin 36 of electrical connector DM24518 and the structure ground (WDM 21-25-21).
 - (c) If there is not 115V AC between pin 36 and the structure ground, do the steps that follow:
 - 1) Replace the recirculation fan relay, K21585, in the P110 panel (WDM 21-25-21).
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
 - (d) If there is 115V AC between pin 36 and the structure ground, then re-connect connector DM24518 and continue.
- (3) Do this check of the current monitor, M24518:
- (a) Disconnect electrical connector DM24505C from the Signal Interface Unit (2), M24505 (WDM 21-25-21).
 - (b) Do a check for 115V AC between pin 85 of electrical connector DM24505C and the structure ground (WDM 21-25-21).
 - (c) If there is not 115V DC between pin 85 and the structure ground, do the steps that follow:
 - 1) Replace the current monitor, M24518, in the P110 panelThese are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
 - (d) If there is 115V AC between pin 85 and the structure ground then re-connect connector DM24505C and continue.
- (4) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel.
- This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the wiring for the forward upper recirculation fan relay between DK21585 and DM24505 (WDM 21-25-21):
- (a) If you find a problem with the wiring, then do these steps:



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- 1) Repair the wiring.
- 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

820. Relay (AFT UPR RECIRC FAN RLY) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12035.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the recirculation fan relay, K21586, in the P210 panel (WDM 21-25-22).
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Activate the Aft Upper Recirc Fan by pressing the Upper Recirc Fan switch on the P5 overhead panel.
 - (a) If the fan operates and the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows or the fan does not operate, then continue.
- (3) Do a check of the Signal Interface Unit (SIU) 1, M24508, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the Current Monitor Card, M24519 in the P210 panel,

These are the tasks:

Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,

Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

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- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring for the aft upper recirculation fan relay circuit in the P210 panel (WDM 21-25-22):
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

822. ELCU (R LWR RECIRC FAN) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16203.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, SYSTEM TEST, Recirculation Fan System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the electrical load control unit (ELCU) for the right lower recirculation fan, M21201, in the P200 panel, do this task: ELCU Removal, AMM TASK 24-51-05-000-801.
- (2) Do this check of the wiring for the ELCU:
 - (a) Do a check for 28 VDC between pin 1 of connector DM21201 and the structure ground. (WDM 21-25-12).
 - 1) If there is not 28VDC between pin 1 and the structure ground, then do these steps:
 - a) Repair the wiring between circuit breaker C21626 in the P210 panel and pin 1 of connector DM21201, in the P200 panel (WDM 21-25-12).
 - b) Re-install the ELCU, M21201. To install the the ELCU, do this task: ELCU Installation, AMM TASK 24-51-05-400-801
 - c) Do this ground test on the MAT: 21 Cabin Temperature Control System, SYSTEM TEST, Recirculation Fan System.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is 28VDC at pin 1 of connector DM21201, then continue.

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- (3) Replace the electrical load control unit (ELCU) for the right lower recirculation fan, M21201, in the P200 panel
- These are the tasks:
- ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, SYSTEM TEST, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the power panel controller, M24501, in the P200 panel.
- These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, SYSTEM TEST, Recirculation Fan System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring in the P200 panel right lower recirculation fan ELCU circuit (WDM 21-25-12).
- (a) Do a check of the wiring between circuit breaker C21626 in the P210 panel, and electrical connector DM21201.
- (b) Do a check of the wiring between electrical connector DM24501 and electrical connector DM21201.
- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - a) Do this ground test on the MAT: 21 Cabin Temperature Control System, SYSTEM TEST, Recirculation Fan System.
 - b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

823. Power Panel Controller (R LWR RECIRC FAN) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16205.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 24 ELMS P210 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P210 EU Self-Test.

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- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the power panel controller, M24501 in the P200 panel, do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.
- (2) Do this check of the wiring for the power panel controller, M24501:
 - (a) Do a check for 28 VDC between pin A54 of connector DM24501 and the structure ground. (WDM 21-25-12, 24-09-32).
 - (b) Do a check for 28 VDC between pin B53 of connector DM24501 and the structure ground. (WDM 21-25-12, 24-09-32).
 - 1) If there is not 28 VDC between pins A54 and B53, and the structure ground, then do these steps:
 - a) Repair the wiring between circuit breaker C21626 in the P210 panel and pin A54 of connector DM24501, in the P200 panel (WDM 21-25-12, 24-09-32).
 - b) Repair the wiring between circuit breaker C24691 in the P210 panel and pin B53 of connector DM24501, in the P200 panel (WDM 21-25-12, 24-09-32).
 - c) Re-install the power panel controller, M24501. To install the power panel controller, do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
 - d) Do this ground test on the MAT: 24 ELMS P210 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P210 EU Self-Test.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is 28 VDC at pins A54 and B53 of connector DM24501, then continue.
- (3) Replace the power panel controller, M24501 in the P200 panel
These are the tasks:
Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
 - (a) Do this ground test on the MAT: 24 ELMS P210 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P210 EU Self-Test.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the electrical load control unit (ELCU) for the right lower recirculation fan, M21201, in the P200 panel
These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
 - (a) Do this ground test on the MAT: 24 ELMS P210 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P210 EU Self-Test.



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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring in the P200 panel for the power panel controller circuit (WDM 21-25-12, 24-09-32).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - a) Do this ground test on the MAT: 24 ELMS P210 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P210 EU Self-Test.
 - b) If the maintenance message does not show on the ground test display, you corrected the fault.

———— **END OF TASK** ————

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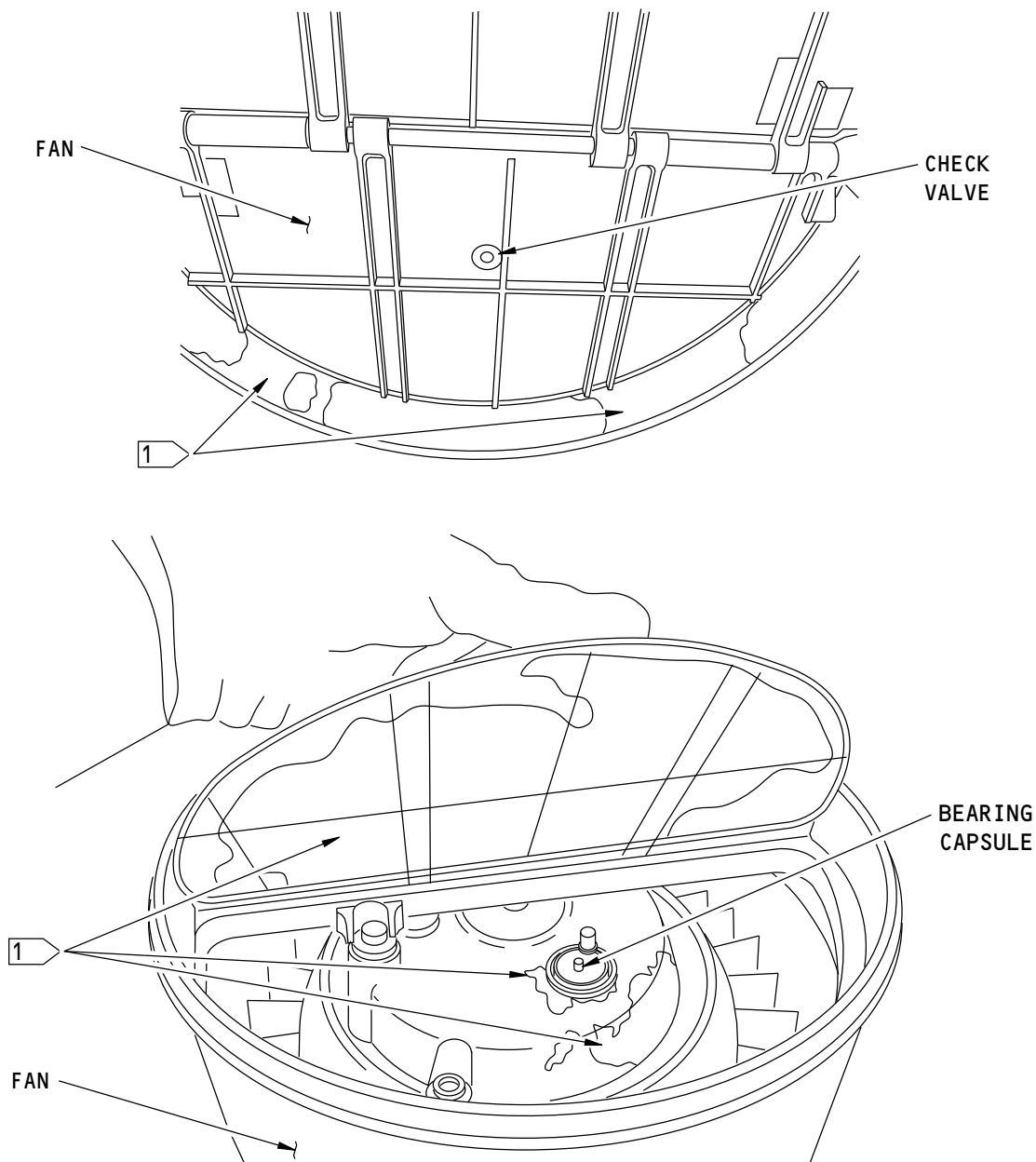
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RIGHT LOWER RECIRCULATION FAN

1 POSSIBLE AREAS WITH A
DARK TACKY SUBSTANCE

2146168 S0000464840_V1

Right Lower Recirculation Fan Problems
Figure 301/21-25-00-990-801

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817. Chiller Boost Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-11026.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message 21-11122, then do the Fault Isolation Procedure for that message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure - Electrical Failure below.
 - (b) If the maintenance message does not show on the ground test display, then continue.
 - (c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.

NOTE: You must do the fan check below while the ground test operates.

- 1) Listen for the fan to operate.
- 2) If the fan operates but makes an unusual noise or there is too much vibration, then do the Fault Isolation Procedure - Mechanical Failure below.
- 3) If the fan operates but does not make an unusual noise or there is not too much vibration, then there was an intermittent fault.

C. Fault Isolation Procedure - Mechanical Failure

- (1) Replace the chiller boost fan.

These are the tasks:

Chiller Boost Fan Removal, AMM TASK 21-26-11-000-801,

Chiller Boost Fan Installation, AMM TASK 21-26-11-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message does show on the ground test display, then continue.

D. Fault Isolation Procedure - Electrical Failure

- (1) Do the steps that follow to check for electrical power to the chiller boost fan:
 - (a) Disconnect electrical connector DB21264 from the chiller boost fan.
 - (b) Do a check for 3-phase 115/208 VAC between these pins of DB21264:

DB21264	DB21264
pin 1	pin 2
pin 1	pin 3
pin 2	pin 3

- (c) If you do find 115/208 VAC between pins 1, 2, and 3, then do these steps:
 - 1) Replace the chiller boost fan.

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These are the tasks:

Chiller Boost Fan Removal, AMM TASK 21-26-11-000-801,
Chiller Boost Fan Installation, AMM TASK 21-26-11-400-801.

- 2) Re-connect connector DB21264.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find 115/208 VAC between pins 1, 2, and 3, then do the steps that follow:
- 1) Replace the chiller boost fan relay, K21264 (WDM 21-26-41).
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - b) If the maintenance message does show on the ground test display, then continue.
- (2) Do the steps that follow to check the electrical power wiring to the chiller boost fan:
- (a) Open these circuit breakers and install safety tags:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	27	C21307	CHLR BOOST FAN
G	7	C21629	CHLR BOOST FAN CTRL

- (b) Disconnect electrical connector DB21264 from the chiller boost fan.
- (c) Disconnect electrical connector DM24508B from the Signal Interface Unit 1, M24508 in the Right Power Management Panel, P210.
- (d) Do a wiring check between this circuit breaker and the electrical connector DM24508B:
- 1) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	7	C21629	CHLR BOOST FAN CTRL

C21629	DM24508B
pin 2	pin 9

- (e) Remove the chiller boost fan relay, K21264 in the Right Power Management Panel, P210.
- (f) Do a wiring check between this circuit breaker and the relay connector DK21264:
- 1) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	27	C21307	CHLR BOOST FAN

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C21307

pin A2
pin B2
pin C2

DK21264

pin A2
pin B2
pin C2

- (g) Do a wiring check between the relay connector DK21264 and the electrical connector DB21264:

- 1) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	27	C21307	CHLR BOOST FAN

DK21264

pin A1
pin B1
pin C1

DB21264

pin 1
pin 2
pin 3

- (h) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.
- 2) Re-connect connector DB21264 and DM24508B.
- 3) Reinstall the chiller boost fan relay, K21264.
- 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- 6) If the maintenance message does show on the ground test display, then continue.

- (i) If you do not find a problem with the wiring, then do the steps that follow:

- 1) Replace the chiller boost fan relay, K21264 (WDM 21-26-41).
- 2) Re-connect connector DB21264 and DM24508B.
- 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - b) If the maintenance message does show on the ground test display, then continue.

- (3) Do a check of the chiller boost fan ground wiring:

- (a) Disconnect connector DB21264 from the chiller boost fan, B21264.
- (b) Do a continuity check between pin 8 of connector DB21264 and structure ground.
 - 1) If there is not continuity between pin 8 and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21264.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.

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- d) If the maintenance message does not show on the ground test display, you corrected the fault.
- e) If the maintenance message does show on the ground test display, then continue.
- 2) If there is continuity between pin 8 and the structure ground, then re-connect connector DB21264 and continue.
- (c) Remove the right ECS Miscellaneous Card, A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
- (d) Do a continuity check between pin 88 of connector XA14 and the structure ground.
- (e) If there is not continuity between pin 88 of connector XA14 and the structure ground, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21264.
 - 3) Re-install the right ECSCMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message does show on the ground test display, then do the steps that follow:
 - a) Replace the chiller boost fan.
These are the tasks:
Bulk Cargo Ventilation Fan Removal, AMM TASK 21-26-06-000-801,
Bulk Cargo Ventilation Fan Installation, AMM TASK 21-26-06-400-801.
 - b) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (f) If there is continuity between pin 88 of connector XA14 and pin 5, then do these steps:
 - 1) Re-install the right ECSCMC, A14 and continue. To install the right ECSCMC, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
- (4) Replace the chiller boost fan current monitor, M24636 in the Right Power Management panel, P210
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.

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- (5) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the right ECSMC, in the P84 System Cardfile. do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (7) Do a check of the Computing and Communications Unit, M24506, in the P210 panel.
This is the task:
Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

818. Relay (CHILLER EXH CRWN S/O VLV) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-11024.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the chiller exhaust crown valve relay, K21269, in the P110 panel (WDM 21-26-42).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel,
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P110 panel of the chiller exhaust crown valve relay circuit (WDM 21-26-42)
 - (a) Do a check of the wiring between circuit breaker C21458 and electrical connector DK21269.
 - (b) Do a check of the wiring between circuit breaker C21690 and electrical connector DK21269.
 - (c) Do a check of the wiring between electrical connector DM24505 and electrical connector DK21269.
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the Computing and Communications Unit, M24502, in the P110 panel,
This is the task:
Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (5) If the message is latched in ELMS NVM do the following steps:
 - (a) Completely power down the aircraft.
 - (b) Swap the one (1) ELMS P110 panel computing and communication unit (CCU) with the one (1) ELMS P210 panel CCU.
 - (c) Power up the aircraft.
 - (d) The maintenance message should be gone.

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- (e) Power down the aircraft and swap one (1) ELMS P110 CCU with the one (1) ELMS P210 panel CCU to restore the aircraft to the original configuration.
- (f) Power up the aircraft.
- (g) The maintenance message should be gone.

————— **END OF TASK** —————

820. Relay (CHILLER EXH LOWER S/O VLV) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-11025.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the chiller exhaust lower valve relay, K21210, in the P110 panel (WDM 21-26-43).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P110 panel of the chiller exhaust lower valve relay circuit (WDM 21-26-43)
 - (a) Do a check of the wiring between circuit breaker C21459 and electrical connector DK21210.
 - (b) Do a check of the wiring between circuit breaker C21686 and electrical connector DK21210.
 - (c) Do a check of the wiring between electrical connector DM24504 and electrical connector DK21210.
 - (d) If you find a problem with the wiring, then do these steps:

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- 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the Computing and Communications Unit, M24502, in the P110 panel.
- This is the task:
- Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (5) If the message is latched in ELMS NVM do the following steps:
- (a) Completely power down the aircraft.
 - (b) Swap the one (1) ELMS P110 panel computing and communication unit (CCU) with the one (1) ELMS P210 panel CCU.
 - (c) Power up the aircraft.
 - (d) The maintenance message should be gone.
 - (e) Power down the aircraft and swap one (1) ELMS P110 CCU with the one (1) ELMS P210 panel CCU to restore the aircraft to the original configuration.
 - (f) Power up the aircraft.
 - (g) The maintenance message should be gone.

————— **END OF TASK** —————

822. **Bulk Cargo Ventilation Fan Problems - Fault Isolation**

A. Maintenance Messages

- (1) This task is for maintenance message: 21-11013.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message 21-11113, then do the Fault Isolation Procedure for that message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure - Electrical Failure below.
 - (b) If the maintenance message does not show on the ground test display, then continue.
 - (c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.

NOTE: You must do the fan check below while the ground test operates.

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- 1) Listen for the fan to operate.
- 2) If the fan operates but makes an unusual noise or there is too much vibration, then do the Fault Isolation Procedure - Mechanical Failure below.
- 3) If the fan operates but does not make an unusual noise or there is not too much vibration, then there was an intermittent fault.

C. Fault Isolation Procedure - Mechanical Failure

- (1) Replace the bulk cargo vent fan.

These are the tasks:

Bulk Cargo Ventilation Fan Removal, AMM TASK 21-26-06-000-801,

Bulk Cargo Ventilation Fan Installation, AMM TASK 21-26-06-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message does show on the ground test display, then continue.

D. Fault Isolation Procedure - Electrical Failure

- (1) Do the steps that follow to check for electrical power to the bulk cargo vent fan:
 - (a) Disconnect electrical connector DB21263 from the bulk cargo vent fan and put a shunt between pin 5 and 6.
 - (b) Do a check for 3-phase 115/208 VAC between these pins of DB21263:

DB21263	DB21263
pin 2	pin 3
pin 2	pin 4
pin 3	pin 4

- (c) If you do find 115/208 VAC between pins 2, 3, and 4, then do these steps:
 - 1) Replace the bulk cargo vent fan.

These are the tasks:

Bulk Cargo Ventilation Fan Removal, AMM TASK 21-26-06-000-801,
Bulk Cargo Ventilation Fan Installation, AMM TASK 21-26-06-400-801.
 - 2) Re-connect connector DB21263.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find 115/208 VAC between pins 2, 3, and 4, then do the steps that follow:
 - 1) Replace the bulk cargo vent fan relay, K21263 (WDM 21-26-21).
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - a) If the maintenance message does not show on the ground test display, you corrected the fault.

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- b) If the maintenance message does show on the ground test display, then continue.
- (2) Do the steps that follow to check the electrical power wiring to the bulk cargo vent fan:
- (a) Open these circuit breakers and install safety tags:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C21308	BULK CGO VENT FAN
H	1	C21640	BULK CGO VENT FAN CTRL

- (b) Disconnect electrical connector DB21263 from the bulk cargo vent fan.
- (c) Disconnect electrical connector DM24509B from the Signal Interface Unit 2, M24509 in the Right Power Management Panel, P210
- (d) Do a wiring check between this circuit breaker and the electrical connector DM24509B:
- 1) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	1	C21640	BULK CGO VENT FAN CTRL

C21640	DM24509B
pin 2	pin 6

- (e) Do a wiring check between this circuit breaker and the electrical connector DB21263:
- 1) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C21308	BULK CGO VENT FAN

C21308	DB21263
pin A2	pin 2
pin B2	pin 3
pin C2	pin 4

- (f) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
- 2) Re-connect connector DB21263 and DM24509B.
- 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- 5) If the maintenance message does show on the ground test display, then continue.
- (g) If you do not find a problem with the wiring, then do the steps that follow:
- 1) Replace the bulk cargo vent fan relay, K21263 (WDM 21-26-21).
- 2) Re-connect connector DB21263 and DM24509B.

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- 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - b) If the maintenance message does show on the ground test display, then continue.
- (3) Do a check of the bulk cargo vent fan ground wiring:
 - (a) Disconnect connector DB21263 from the bulk cargo vent fan, B21263.
 - (b) Do a continuity check between pin 7 of connector DB21263 and structure ground.
 - 1) If there is not continuity between pin 7 and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21263.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - e) If the maintenance message does show on the ground test display, then continue.
 - 2) If there is continuity between pin 7 and the structure ground, then re-connect connector DB21263 and continue.
 - (c) Remove the right ECS Miscellaneous Card, A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
 - (d) Do a wiring check between pin 78 of connector XA14 and the structure ground.
 - (e) If there is not continuity between pin 78 of connector XA14 and structure ground, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21263.
 - 3) Re-install the right ECSCMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message does show on the ground test display, then do the steps that follow:
 - a) Replace the bulk cargo vent fan.

These are the tasks:
Bulk Cargo Ventilation Fan Removal, AMM TASK 21-26-06-000-801,
Bulk Cargo Ventilation Fan Installation, AMM TASK 21-26-06-400-801.
 - b) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Vent Fan.
 - c) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (f) If there is continuity between pin 78 of connector XA14 and structure ground, then do these steps:
 - 1) Re-install the right ECSMC, A14 and continue. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (4) Replace the bulk cargo vent fan current monitor, M24638 in the Right Power Management panel, P210 (WDM 21-26-21).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (5) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the right ECSMC, in the P84 System Cardfile. do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (7) Do a check of the Computing and Communications Unit, M24506, in the P210 panel.

This is the task:

Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

823. Relay (BULK CGO VENT FAN) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-11113.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Check CB, C21308, in the P210 panel (WDM 21-26-21).
 - (a) Make sure the CB, C21308 is closed.
 - (b) Make sure that there is power across the terminals of CB, C21308 and structure ground.
 - 1) If there is no power across the terminals A2, B2, C2 and structure ground, the circuit breaker may be faulty, replace CB, C21308.
 - (c) Do this ground test on the Maintenance Access Terminal (MAT): 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the bulk cargo ventilation fan relay, K21263, in the P210 panel (WDM 21-26-21).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the internal wiring in the P210 panel bulk cargo ventilation fan relay circuit (WDM 21-26-21)
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

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- 4) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the Computing and Communications Unit, M24506, in the P210 panel.
This is the task:
Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— END OF TASK —————

824. Relay (CHILLER BOOST FAN) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-11122.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Check CB, C21307, in the P210 panel (WDM 21-26-41).
 - (a) Make sure the CB, C21307 is closed.
 - (b) Make sure that there is power across the terminals of CB, C21307 and structure ground.
 - 1) If there is no power across the terminals A2, B2, C2 and structure ground, the circuit breaker may be faulty, replace CB, C21307.
 - (c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the chiller boost fan relay, K21264, in the P210 panel (WDM 21-26-41).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the Current Monitor Card, M24519, in the P210 panel.
These are the tasks:

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Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,

Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
- (b) Follow the instructions on the MAT to complete the ground test.
- (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE ELMS PANELS BEFORE YOU REMOVE COMPONENTS OF THE PANELS. IF YOU DO NOT REMOVE ELECTRICAL POWER, DAMAGE TO EQUIPMENT CAN OCCUR.

- (4) Do a check of the Signal Interface Unit (SIU) 1, M24508 in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.
- (b) Follow the instructions on the MAT to complete the ground test.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) on the existing faults display, then you corrected the fault.

NOTE: Wait up to 5 minutes, or until the maintenance message shows, after there is power to the ELMS panel before you read the status of the maintenance message from the MAT.

- (d) If the maintenance message shows on the existing fault display, then continue.
- (5) Do a check of the internal wiring in the P210 panel chiller boost fan relay circuit (WDM 21-26-41).
 - (a) Do a check of the wiring between circuit breaker C21629 and electrical connector DK21264.
 - (b) Do a check of the wiring between circuit breaker C21307 and electrical connector DK21264.
 - (c) Do a check of the wiring between electrical connector DK21264 and electrical connector DM24508.
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Chiller Exhaust System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

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825. ELCU (LAV/GALLEY FAN L) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-11143.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the electrical load control unit (ELCU) for the left lavatory/galley ventilation fan, M21265, in the P100 panel, do this task: ELCU Removal, AMM TASK 24-51-05-000-801.
 - (2) Do this check of the wiring for the ELCU:
 - (a) Do a check for 28 VDC between pin 1 of connector DM21265 and the structure ground. (WDM 21-26-12).
 - 1) If there is not 28VDC between pin 1 and the structure ground, then do these steps:
 - a) Repair the wiring between circuit breaker C21607 in the P110 panel and pin 1 of connector DM21265, in the P100 panel; or repair the wiring between pin 11 of connector DM21265 and structure ground in the P100 panel (WDM 21-26-12).
 - b) Re-install the ELCU, M21265. To install the ELCU, do this task: ELCU Installation, AMM TASK 24-51-05-400-801
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is 28VDC at pin 1 of connector DM21265, then continue.
 - (b) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (3) Replace the electrical load control unit (ELCU) for the left lavatory/galley ventilation fan, M21265, in the P100 panel
- These are the tasks:
- ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the power panel controller, M24500, in the P100 panel.

These are the tasks:

Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,

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Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring in the P100 panel left lavatory/galley fan ELCU circuit (WDM 21-26-12, SSM 24-51-11).
- (a) Do a check of the wiring between circuit breaker C21607 in the P110 panel, and electrical connector DM21265 in the P100 panel.
 - (b) Do a check of the wiring between electrical connector DM21265 and electrical connector DM24500 in the P100 panel.
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

826. ELCU (LAV/GALLEY FAN R) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-11144.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the electrical load control unit (ELCU) for the right lavatory/galley ventilation fan, M21266, in the P200 panel, do this task: ELCU Removal, AMM TASK 24-51-05-000-801.
- (2) Do this check of the wiring for the ELCU:
 - (a) Do a check for 28 VDC between pin 1 of connector DM21266 and the structure ground. (WDM 21-26-11).
 - 1) If there is not 28VDC between pin 1 and the structure ground, then do these steps:
 - a) Repair the wiring between circuit breaker C21608 in the P210 panel and pin 1 of connector DM21266, in the P200 panel; or repair the wiring between pin 11 of connector DM21266 and structure ground in the P200 panel (WDM 21-26-11).

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- b) Re-install the ELCU, M21266. To install the the ELCU, do this task: ELCU Installation, AMM TASK 24-51-05-400-801
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If there is 28VDC at pin 1 of connector DM21266, then continue.
- (3) Replace the electrical load control unit (ELCU) for the right lavatory/galley ventilation fan, M21266, in the P200 panel
- These are the tasks:
- ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the power panel controller, M24501, in the P200 panel.
- These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (5) Do a check of the internal wiring in the P200 panel right lavatory/galley fan ELCU circuit (WDM 21-26-11, SSM 24-51-21).
- (a) Do a check of the wiring between circuit breaker C21608 in the P210 panel, and electrical connector DM21266 in the P200 panel.
 - (b) Do a check of the wiring between connector DM21266 and DM24501 in the P200 panel:
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

829. Lavatory/Galley Ventilation Fan (Left) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-11043.

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B. Initial Evaluation

- (1) Open then close this circuit breaker to make sure the electronic load control unit (ELCU), M21265, for the left lavatory/galley ventilation fan, B21262, is not latched:

Open and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	26	C21607	L LAV/GLY FAN CTRL

- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Determine if the failure of the lavatory/galley ventilation fan, B21262 was caused by a defective ELCU contactor.

- (a) Do a phase-to-phase resistance check.

- 1) Measure the resistance between these pins (WDM 21-26-12).

DB21262		DB21262
1	.....	2
1	.....	3
2	.....	3

- (b) If the difference between the resistances is not 5% or less, there could be a defective ELCU contactor. Do these steps:

- 1) Examine the fan for one or more of these conditions.
 - a) A large quantity of smoke is seen during the failure of the fan.
 - b) The fan has a pungent smell during or after it has failed.
 - c) The fan impeller is locked in one position.
 - d) Examine the bearing capsule through the fan check valve for a dark tacky substance on or around the bearing capsule. Figure 301 (Sheet 1)
 - 2) If any of these conditions are observed, replace the electrical load control unit (ELCU), M21265, for the left lavatory/galley ventilation fan in the P100 panel.

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,

ELCU Installation, AMM TASK 24-51-05-400-801.

- (2) Replace the lavatory/galley ventilation fan, B21262.

These are the tasks:

Lavatory/Galley Ventilation Fan Removal, AMM TASK 21-26-01-000-801,

Lavatory/Galley Ventilation Fan Installation, AMM TASK 21-26-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the left ECS miscellaneous card (ECSCMC), A14, in the Left Systems Cardfile, P85.
These are the tasks:
ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the left lavatory/galley ventilation fan ELCU, M21265, in the Left Power Panel, P100
These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the ground wiring at the connector for the fan:
 - (a) Disconnect connector DB21262 from the fan, B21262.
 - (b) Do a continuity check between pin 5 of connector DB21262, and structure ground (WDM 21-26-12).
 - 1) If there is not continuity between pin 5 of connector DB21262, and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21262.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pins 5 of connector DB21262, and structure ground, then continue.
- (6) Do this check of the wiring between the left ECSCMC and the fan:
 - (a) Re-connect connector DB21262.
 - (b) Remove the left ECSCMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
 - (c) Do a continuity check between pin 82 of connector XA14 at the Left Systems Cardfile, P85, and structure ground (WDM 21-26-12).

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- (d) If there is not continuity between pin 82 of connector XA14 and structure ground, then do these steps:
- 1) Repair the wiring between these pins of connector XA14 in the P85 panel, and connector DB21262 at the fan.
- | XA14 | DB21262 |
|------------------|----------------|
| pin 82 | pin 6 |
- 2) Re-install the left ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If there is continuity between pin 82 of connector XA14 and structure ground, then continue.
- (7) Do this check of the wiring between the ELCU and the fan:
- (a) Remove the left lavatory/galley ventilation fan ELCU, M21265, in the Left Power Panel, P100 (AMM TASK 24-51-05-000-801).
 - (b) Do a continuity check between these pairs of pins at connector DM21265 in the Left Power Panel, P100.
 - 1) Pin A2 and Pin B2
 - 2) Pin B2 and Pin C2
 - (c) If there is not continuity at each pair of pins of connector DM21265, then do these steps:
 - 1) Disconnect connector DB21262 from the fan, B21262.
 - 2) Do a wiring check between these pins of connector DM21265 on the P100 panel and connector DB21262 at the fan, B21262 (WDM 21-26-12):
- | DM21265 | DB21262 |
|------------------|----------------|
| pin A2 | pin 1 |
| pin B2 | pin 2 |
| pin C2 | pin 3 |
- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the ELCU, M21265. To install the ELCU, (AMM TASK 24-51-05-400-801)
 - c) Re-install connector DB21262.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is continuity between each pair of pins of connector DM21265, then continue.
- (8) Do a check of the Computing and Communications Unit, M24502, in the P110 panel.
- This is the task:

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Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
- (b) Follow the instructions on the MAT to complete the ground test.
- (c) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

830. Lavatory/Galley Ventilation Fan (Right) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-11044.

B. Initial Evaluation

- (1) Open then close this circuit breaker to make sure the electronic load control unit (ELCU), M21266, for the right lavatory/galley ventilation fan, B21261, is not latched:

Open and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	2	C21608	R LAV/GLY FAN CTRL

- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Determine if the failure of the lavatory/galley ventilation fan, B21261 was caused by a defective ELCU contactor.
 - (a) Do a phase-to-phase resistance check.
 - 1) Measure the resistance between these pins (WDM 21-26-11).

DB21261		DB21261
1	.....	2
1	.....	3
2	.....	3

- (b) If the difference between the resistances is not 5% or less, there could be a defective ELCU contactor. Do these steps:
 - 1) Examine the fan for one or more of these conditions.
 - a) A large quantity of smoke is seen during the failure of the fan.
 - b) The fan has a pungent smell during or after it has failed.
 - c) The fan impeller is locked in one position.
 - d) Examine the bearing capsule through the fan check valve for a dark tacky substance on or around the bearing capsule. Figure 301 (Sheet 1)

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- 2) If any of these conditions are observed, replace the electrical load control unit (ELCU), M21266, in the P200 pane for the right lavatory/galley ventilation fan.

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.

- (2) Replace the lavatory/galley ventilation fan, B21261.

These are the tasks:

Lavatory/Galley Ventilation Fan Removal, AMM TASK 21-26-01-000-801,
Lavatory/Galley Ventilation Fan Installation, AMM TASK 21-26-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the right ECS miscellaneous card (ECSCMC), A14, in the Right Systems Cardfile, P84.
- These are the tasks:
- ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the right lavatory/galley ventilation fan ELCU, M21266, in the Right Power Panel, P200

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the ground wiring at the connector for the fan:
- (a) Disconnect connector DB21261 from the fan, B21261.
- (b) Do a continuity check between pin 5 of connector DB21261, and structure ground (WDM 21-26-11).
- 1) If there is not continuity between pin 5 of connector DB21261, and structure ground, then do these steps:
- a) Repair the wiring.
- b) Re-connect connector DB21261.

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- c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If there is continuity between pins 5 of connector DB21261, and structure ground, then continue.
- (6) Do this check of the wiring between the right ECSMC and the fan:
 - (a) Re-connect connector DB21261.
 - (b) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (c) Do a continuity check between pin 82 of connector XA14 at the Right Systems Cardfile, P85, and structure ground (WDM 21-26-11).
 - (d) If there is not continuity between pin 82 of connector XA14 and structure ground, then do these steps:
 - 1) Repair the wiring between these pins of connector XA14 in the P85 panel, and connector DB21261 at the fan.

XA14	DB21261
pin 82	pin 6

- 2) Re-install the right ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If there is continuity between pin 82 of connector XA14 and structure ground, then continue.

- (7) Do this check of the wiring between the ELCU and the fan:
 - (a) Remove the right lavatory/galley ventilation fan ELCU, M21266, in the Right Power Panel, P200, do this task: ELCU Removal, AMM TASK 24-51-05-000-801.
 - (b) Do a continuity check between these pairs of pins at connector DM21266 in the Right Power Panel, P200.
 - 1) Pin A2 and Pin B2
 - 2) Pin B2 and Pin C2
 - (c) If there is not continuity at each pair of pins of connector DM21266, then do these steps:
 - 1) Disconnect connector DB21261 from the fan, B21261.
 - 2) Do a wiring check between these pins of connector DM21266 on the P200 panel and connector DB21261 at the fan, B21261 (WDM 21-26-11):

DM21266	DB21261
pin A2	pin 1
pin B2	pin 2
pin C2	pin 3

- 3) If you find a problem with the wiring, then do these steps:

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- a) Repair the wiring.
 - b) Re-install the ELCU, M21266. To install the ELCU, do this task: ELCU Installation, AMM TASK 24-51-05-400-801
 - c) Re-install connector DB21261.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If there is continuity between each pair of pins of connector DM21266, then continue.
- (8) Do a check of the Computing and Communications Unit, M24506, in the P210 panel.
- This is the task:
- Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Lavatory/Galley Ventilation Fan.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

833. Relay (FORWARD CARGO EXHAUST FAN) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16392.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the forward cargo exhaust fan relay, K21014, in the P110 panel (WDM 21-26-51).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
 - (2) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.

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- (b) Follow the instructions on the MAT to complete the ground test.
- (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P110 panel forward cargo exhaust fan relay circuit (WDM 21-26-51).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the Computing and Communications Unit, M24502, in the P110 panel.

This is the task:

Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
- (b) Follow the instructions on the MAT to complete the ground test.
- (c) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

834. Forward Cargo Exhaust Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16152.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure - Electrical Failure below.
 - (b) If the maintenance message does not show on the ground test display, then continue.
 - (c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.

NOTE: You must do the fan check below while the ground test operates.

- 1) Listen for the fan to operate.
- 2) If the fan does not operate, then do the Fault Isolation Procedure - Mechanical Failure below.
- 3) If the fan makes an unusual noise or there is too much vibration, then do the Fault Isolation Procedure - Mechanical Failure below.
- 4) If the fan operates correctly, then there was an intermittent fault.

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C. Fault Isolation Procedure - Mechanical Failure

- (1) Replace the forward cargo exhaust fan, B21267.

These are the tasks:

Forward Cargo Air Conditioning (FCAC) Exhaust Fan Removal, AMM TASK 21-26-12-000-801,
Forward Cargo Air Conditioning (FCAC) Exhaust Fan Installation, AMM
TASK 21-26-12-400-801.

- (2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - (a) If the maintenance message does not show on the ground test display, then you corrected the fault.

D. Fault Isolation Procedure - Electrical Failure

- (1) Remove the forward cargo exhaust fan relay, K21014 from the Left Power Management Panel, P110 (WDM 21-26-51).

- (2) Do a continuity check between these pairs of pins at connector DK21014 in the Left Power Management Panel, P110 (WDM 21-26-51):

- (a) Pin B1 and Pin C1
- (b) Pin A1 and Pin B1

- (3) If there is not continuity between each pair of pins of connector DK21014, then do these steps:

- (a) Disconnect connector DB21267 from the forward cargo exhaust fan, B21267.
- (b) Do a continuity check between these pairs of pins at the connector on the forward cargo exhaust fan (WDM 21-26-51):

- 1) Pin 1 and Pin 2
- 2) Pin 2 and Pin 3

- (c) If there is not continuity between each pair of pins, then do these steps:

- 1) Replace the forward cargo exhaust fan, B21267.

These are the tasks:

Forward Cargo Air Conditioning (FCAC) Exhaust Fan Removal, AMM
TASK 21-26-12-000-801,

Forward Cargo Air Conditioning (FCAC) Exhaust Fan Installation, AMM
TASK 21-26-12-400-801.

- 2) Reconnect connector DB21267.
- 3) Reinstall the forward cargo exhaust fan relay, K21014.
- 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
- 5) If the maintenance message does not show on the ground test display, then you corrected the fault.

- (d) If there is continuity between each pair of pins, then continue.

- (e) Do a wiring check between these pins of connector DK21014 on the P110 panel and connector DB21267 at the forward cargo exhaust fan, B21267 (WDM 21-26-51):

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DK21014	DB21267
pin A1	pin 1
pin B1	pin 2
pin C1	pin 3

- (f) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Reconnect connector DB21267.
 - 3) Reinstall the forward cargo exhaust fan relay, K21014.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - a) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (4) If there is continuity at each pair of pins of connector DK21014, then continue:
- (5) Replace the forward cargo exhaust fan relay, K21014 (WDM 21-26-51).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the forward cargo exhaust fan current monitor, M24680 in the Left Power Management panel, P110
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (7) Remove the left ECS Miscellaneous Card (ECSMC), A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
- (8) Do a continuity check between pin 85 of connector XA14 at the Left Systems Cardfile, P85, and structure ground.
- (9) If there is not continuity between pin 85 of connector XA14 and structure ground, then do these steps:
 - (a) Disconnect connector DB21267 from the forward cargo exhaust fan, B21267.
 - (b) Do a continuity check between pins 5 and 6 at the connector on the forward cargo exhaust fan, B21267. WDM 21-26-51
 - (c) If there is continuity between pins 5 and 6, then do these steps:
 - 1) Do a wiring check between pin 5 of connector DB21267 at the forward cargo exhaust fan, B21267, and structure ground.
 - 2) If there is a problem with the wiring, then do these steps:

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- a) Repair the wiring.
 - b) Reconnect connector DB21267.
 - c) Reinstall the left ECSMC, A14, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - e) If the maintenance message does not show on the ground test display, then you corrected the fault.
- 3) If there is not a problem with the wiring, then continue:
 - 4) Do a wiring check between pin 85 of connector XA14 and pin 6 at connector DB21267 at the forward cargo exhaust fan.
 - 5) If there is a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reconnect connector DB21267.
 - c) Reinstall the left ECSMC, A14, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - e) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If there is not continuity between pins 5 and 6, then do these steps:
 - 1) Replace the forward cargo exhaust fan, B21267.

These are the tasks:
Forward Cargo Air Conditioning (FCAC) Exhaust Fan Removal, AMM TASK 21-26-12-000-801,
Forward Cargo Air Conditioning (FCAC) Exhaust Fan Installation, AMM TASK 21-26-12-400-801.
 - 2) Reconnect connector DB21267.
 - 3) Reinstall the left ECSMC, A14, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - 5) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (10) If there is continuity between pin 85 of connector XA14 and structure ground, then continue.
 - (11) Install a new left ECSMC, A14, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - (12) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - (a) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (b) If the maintenance message shows on the ground test display, then continue.

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- (13) Disconnect connector DM24504A from the Signal Interface Unit (SIU) 1, M24504, and connector DM24680 from the current monitor M24680, in the P110 panel.
- (14) Do a wiring check between pin 70 of connector DM24504A and pin 1 of the connector DM24680 in the P110 panel.
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Reconnect connector DM24504A and DM24680.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (b) If you do not find a problem with the wiring, then do these steps:
 - 1) Do a continuity check between pin 2 of current monitor connector DM24680, and structure ground.
 - 2) If there is not continuity between pin 2 and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Reconnect connector DM24504A, and DM24680.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - d) If the maintenance message does not show on the ground test display, then you corrected the fault.

———— **END OF TASK** ————

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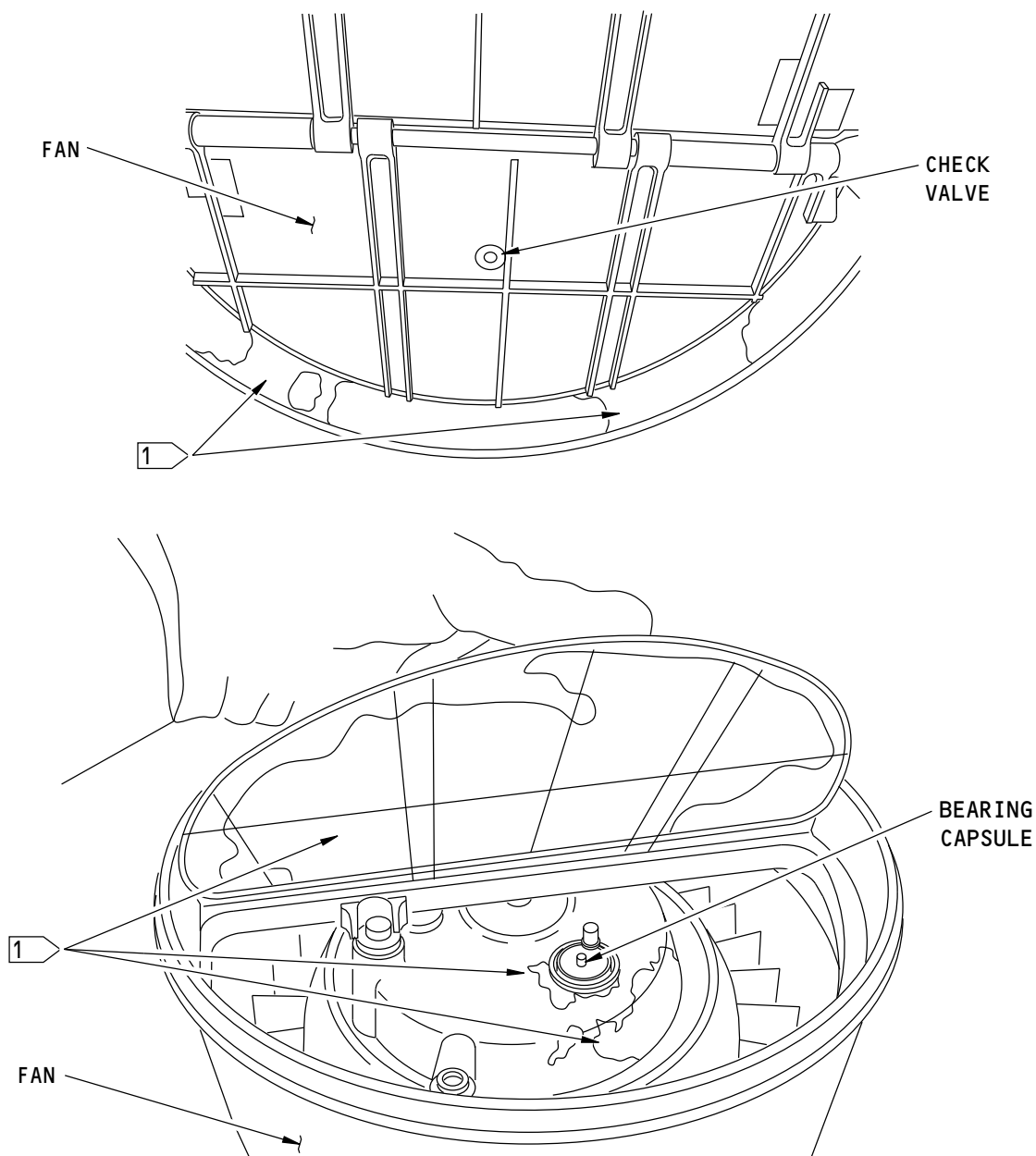
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LAVATORY/GALLEY VENTILATION FAN

1 POSSIBLE AREAS WITH A
DARK TACKY SUBSTANCE

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Lavatory/Galley Ventilation Fan Problems
Figure 301/21-26-00-990-801

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801. F/D Duct or E4 Duct Pressure Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-14051, 21-14061.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Disconnect the connector from the applicable duct pressure sensor (WDM 21-27-52):
 - (a) Connector DM21586 - E4 duct pressure sensor, M21586
 - (b) Connector DM21587 - F/D duct pressure sensor, M21587.
- (2) Do a check for 28 VDC between pins 1 and 2 of connector DM21586 or DM21587 (WDM 21-27-52).
- (3) If there is 28 VDC between pins 1 and 2, then do these steps:
 - (a) Replace the duct pressure sensor.

These are the tasks:

Equipment Cooling Duct Pressure Sensors Removal, AMM TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM TASK 21-27-08-400-801.
 - (b) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
 - (e) Remove the left ECS Miscellaneous Card (ECSCMC), A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
 - (f) Disconnect the connector from the applicable duct pressure sensor:
 - 1) Connector DM21586 - E4 Pressure Sensor, M21586
 - 2) Connector DM21587 - F/D Pressure Sensor, M21587.
 - (g) Do a wiring check between these pins of connector XA14 at the Left Systems Cardfile, P85, and the connector at the applicable duct pressure sensor (WDM 21-27-52):
 - 1) E4 Duct Pressure Sensor, M21586:

XA14	DM21586
pin 27	pin 3
pin 26	pin 4

- 2) F/D Duct Pressure Sensor, M21587:

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XA14

pin 24 pin 3
pin 23 pin 4

DM21587

- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector.
 - 3) Re-install the left ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Equipment Cooling System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (i) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect the connector.
 - 2) Replace the left ECSMC, A14.
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (4) If there is not 28 VDC between pins 1 and 2 at the connector of the applicable duct pressure sensor, then do these steps (WDM 21-27-52):
 - (a) Do a continuity check between pin 2 of the connector and structure ground (WDM 21-27-52).
 - (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If you do not find a problem with the wiring, then do these steps:
 - 1) Do a check for 28 VDC between terminal QB5 of terminal block, TB3001 on the Left Integration Panel, P105, and structure ground (WDM 21-27-52).
 - 2) If there is not 28 VDC at terminal QB5 of TB3001, then do these steps:
 - a) Repair the wiring between circuit breaker C21668, on the Left Power Management Panel, P110, and terminal QB5 of TB3001 on the Left Integration Panel, P105 (WDM 21-27-52).
 - b) Re-connect the connector to the duct pressure sensor.



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- c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- 3) If there is 28 VDC at terminal QB5 of TB3001, then do these steps:
- a) Repair the wiring between terminal QB5 of TB3001 on the Left Integration Panel, P105, and pin 1 of the connector at the applicable duct pressure sensor (WDM 21-27-52).
 - b) Re-connect the connector to the duct pressure sensor.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.

— END OF TASK —

802. Equip Cooling Low Flow Sensor (Equip Bay) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14041.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Disconnect the connector DM21582 from the low flow sensor, M21582 (WDM 21-27-51).
- (2) Do a check for 28 VDC between pins 1 and 2 of connector DM21582 (WDM 21-27-51).
- (3) If there is 28 VDC between pins 1 and 2 at connector DM21582, then do these steps:
- (a) Replace the low flow sensor, M21582.

These are the tasks:

Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.

- 1) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
- (b) Remove the left ECS Miscellaneous Card (ECSCMC), A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
- (c) Disconnect connector DM21582 from the low flow sensor, M21582 (WDM 21-27-51).

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- (d) Do a wiring check between these pins of connector XA14 at the Left Systems Cardfile, P85, and connector DM21582 at the low flow sensor, M21582 (WDM 21-27-51):

XA14	DM21582
pin 29	pin 5
pin 30	pin 4

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21582.
 - 3) Re-install the left ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (f) If you do not find a problem with the wiring, then do these steps:
- 1) Re-connect connector DM21582.
 - 2) Replace the left ECSMC, A14.
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (4) If there is not 28 VDC between pins 1 and 2 at connector DM21582, then do these steps (WDM 21-27-51):
- (a) Do a continuity check between pin 2 of the connector and structure ground (WDM 21-27-51).
- (b) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21582.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If you do not find a problem with the wiring, then do these steps:
- 1) Do a wiring check between circuit breaker C21663 on the Standby Power Management Panel, P310, and pin 1 of connector DM21582 at the low flow sensor, M21582 (WDM 21-27-51).
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21582.

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- c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- d) If the maintenance message does not show on the ground test display, you corrected the fault.

———— **END OF TASK** ————

803. Equip Cooling Ovrld Valve Motor Select Relay Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14091.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the override valve motor select relay, K21588 (WDM 21-27-61).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check for voltage at the relay:
 - (a) Remove the relay, K21588 (WDM 21-27-61).
 - (b) Do a check for 28 VDC from pin X1 of connector DK21588 on the Standby Power Management Panel, P310, to structure ground (WDM 21-27-61).
 - (c) Do a check for 28 VDC from pin A2 of connector DK21588 on the Standby Power Management Panel, P310, to structure ground (WDM 21-27-61).
 - (d) If there is not 28 VDC at pins X1 and A2 of DK21588, then do these steps:
 - 1) Repair the wiring between circuit breaker C21634 and pins X1 and A2 (WDM 21-27-61).
 - 2) Re-install the relay, K21588 (WDM 21-27-61).
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If there is 28 VDC at pins X1 and A2 of DK21588, then continue.
- (3) Do this check of the wiring between the relay and the right equipment cooling controller:
 - (a) Disconnect connector DM21207B from the right equipment cooling controller, M21207.

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- (b) Do a wiring check between these pins of connector DK21588 at the Standby Power Management Panel, P310, and connector DM21207B at the controller, M21207:

DK21588	DM21207B
pin X2	pin 12

- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the relay, K21588 (WDM 21-27-61).
 - 3) Reconnect connector DM21207B to the controller, M21207.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Equipment Cooling System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then do these steps:
- 1) Replace the controller, M21207.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
 - 2) Re-install the relay, K21588 (WDM 21-27-61).
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the maintenance message does shows on the ground test display, then continue.

———— **END OF TASK** ————

804. Equip Cooling Ovrdr Valve L Motor Relay Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14101.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the override valve motor left relay, K21589 (WDM 21-27-61).
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check for voltage at the relay:
 - (a) Remove the relay, K21589 (WDM 21-27-61).
 - (b) Do a check for 28 VDC from pin X1 of connector DK21589 on the Standby Power Management Panel, P310, to structure ground (WDM 21-27-61).
 - (c) Do a check for 28 VDC from pin B2 of connector DK21589 on the Standby Power Management Panel, P310, to structure ground (WDM 21-27-61).
 - (d) If there is not 28 VDC at pins X1 and B2 of DK21589, then do these steps:
 - 1) Repair the wiring between circuit breaker C21632 and pins X1 and B2 (WDM 21-27-61).
 - 2) Re-install the relay, K21589 (WDM 21-27-61).
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If there is 28 VDC at pins X1 and B2 of DK21589, then continue.
- (3) Do this check of the wiring between the relay and the left equipment cooling controller:
 - (a) Disconnect connector DM21104B from the left equipment cooling controller, M21104.
 - (b) Do a wiring check between these pins of connector DK21589 at the Standby Power Management Panel, P310, and connector DM21104B at the controller, M21104:

DK21589	DM21104B
pin X2	pin 7

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the relay, K21589 (WDM 21-27-61).
 - 3) Reconnect connector DM21104B to the controller, M21104.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Equipment Cooling System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then do these steps:
 - 1) Replace the controller, M21104.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
 - 2) Re-install the relay, K21589 (WDM 21-27-61).
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.

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- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the maintenance message does shows on the ground test display, then continue.
- (4) Do this check of the wiring between the SIU and the override valve motor L relay:
 - (a) Remove the relay, K21589 (WDM 21-27-61).
 - (b) Do a wiring check between these pins of connector DK21589 and DM24513A at the Standby Power Management Panel, P310:

DK21589	DM24513A
pin B1	pin 14
- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the relay, K21589 (WDM 21-27-61).
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE ELMS PANELS BEFORE YOU REMOVE COMPONENTS OF THE PANELS. IF YOU DO NOT REMOVE ELECTRICAL POWER, DAMAGE TO EQUIPMENT CAN OCCUR.

- (d) If you do not find a problem with the wiring, then do the step that follow:
 - 1) Do a check of the connectors DM24513 from the SIU-2, M24513 for damage.
 - 2) Re-install the relay, K21589 (WDM 21-27-61).
 - 3) Do a check of the SIU 2, M24513.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) on the existing faults display, then you corrected the fault.

NOTE: Wait up to 5 minutes, or until the maintenance message shows, after there is power to the ELMS panel before you read the status of the maintenance message from the MAT.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring in the P310 panel left equipment cooling override valve relay circuit (WDM 21-27-61).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.

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- 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

805. Equipment Cooling Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43230.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the EQUIP COOLING switch first to AUTO, and then to OVRD.
 - (b) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or OVRD position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the AUTO and OVRD positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the equipment cooling switch, M21314S1 (WDM 21-27-61).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the EQUIP COOLING switch first to AUTO, and then to OVRD.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and OVRD positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or OVRD position, then continue.
- (2) Do this check of the wiring from the equipment cooling switch to the right overhead panel cardfile:
 - (a) Remove the air conditioning module, M21314 (WDM 21-27-61).
 - (b) Disconnect connector M21314DS1 from the equipment cooling switch.
 - (c) Disconnect connector DM23217L from the right overhead card file, M23217.
 - (d) Do a wiring check between these pins of connector M21314DS1 at pilot's overhead panel, P5, and connector DM23217L, at the maintenance panel, P61 (WDM 21-27-61):

M21314DS1

pin 4	.....	pin A1
pin 6	.....	pin A3
pin 5	.....	pin A2

DM23217L

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector M21314DS1.
 - 3) Re-connect connector DM23217L.
 - 4) Re-install the air conditioning module, M21314.
 - 5) Monitor the maintenance message on the MAT while you do these steps:

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- a) Set the EQUIP COOLING switch first to AUTO, and then to OVRD.
- 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and OVRD positions, you corrected the fault.
- f) If you do not find a problem with the wiring, then continue.
- g) Re-connect connector M21314DS1 to the equipment cooling switch, M21314S1.
- h) Re-install the air conditioning module, M21314.
- (3) Replace the right overhead panel card file chassis, M23217 at the maintenance panel, P61.
These are the tasks:
Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the EQUIP COOLING switch first to AUTO, and then to OVRD.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and OVRD positions, you corrected the fault.

————— END OF TASK —————

810. VSCF Duct has Low Air Pressure - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14122.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Clean or replace the equipment cooling air filter. To clean or replace the equipment cooling air filter, do the applicable task that follows:
 - (a) Do this task: Equipment Cooling Air Filter Cleaning, AMM TASK 21-27-02-100-801.
 - (b) These are the tasks:
Equipment Cooling Air Filter Removal, AMM TASK 21-27-02-000-801,
Equipment Cooling Air Filter Installation, AMM TASK 21-27-02-400-801.
 - (c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If the maintenance message shows on the ground test display, then continue.
- (2) Feel for airflow from the inlet screen of the converter supplemental cooling fan (VSCF).

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- (a) If there is airflow from the inlet screen, then do these steps:
 - 1) Replace the converter supplemental cooling fan (VSCF), B24003.
These are the tasks:
Converter Supplemental Cooling Fan - Removal, AMM TASK 24-25-13-000-801,
Converter Supplemental Cooling Fan - Installation, AMM TASK 24-25-13-400-801.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (b) If there is not airflow from the inlet screen, then continue.
- (3) Do a check for blockage or obstruction in these ducts:
 - (a) The supply duct which is between the E4-4 rack plenum and the equipment cooling air supply duct that goes to the flight deck.
 - (b) The duct which is between the E4-4 rack plenum and the converter supplemental cooling fan (VSCF).
 - (c) If you find unwanted material in the duct, then do these steps:
 - 1) Remove the unwanted material.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If you do not find any obstruction in the ducts, then continue.
- (4) Do a check for air leaks from these ducts:
 - (a) The supply duct which is between the E4-4 rack plenum and the equipment cooling air supply duct that goes to the flight deck.
 - (b) The duct which is between the E4-4 rack plenum and the converter supplemental cooling fan (VSCF).
 - (c) If you find a leak, then do these steps:
 - 1) Repair the leak.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If you do not find a leak, then continue.
- (5) Replace the equipment cooling duct pressure sensor (E4), M21585.
These are the tasks:
Equipment Cooling Duct Pressure Sensors Removal, AMM TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM TASK 21-27-08-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (c) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the converter supplemental cooling check valve (VSCF).
These are the tasks:
Converter Supplemental Cooling Check Valve (VSCF) Removal, AMM TASK 21-27-06-000-801,
Converter Supplemental Cooling Check Valve (VSCF) Installation, AMM TASK 21-27-06-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

811. E4 Duct has Low Air Pressure - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14111.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Clean or replace the equipment cooling air filter. To clean or replace the equipment cooling air filter, do the applicable task that follows:
 - (a) Do this task: Equipment Cooling Air Filter Cleaning, AMM TASK 21-27-02-100-801.
 - (b) These are the tasks:
Equipment Cooling Air Filter Removal, AMM TASK 21-27-02-000-801,
Equipment Cooling Air Filter Installation, AMM TASK 21-27-02-400-801.
 - (c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check for blockage or obstruction in these ducts:
 - (a) The ducts that connect the equipment cooling low flow sensor, M21582, to the E1, E2, E3 and E4 rack plenums.
 - (b) If you find unwanted material in the duct, then do these steps:
 - 1) Remove the unwanted material.

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- 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If you do not find any obstruction in the ducts, then continue.
- (3) Do a check for air leaks from the ducts that connect the equipment cooling low flow sensor, M21582, to the E1, E2, E3 and E4 rack plenums.
 - (a) If you find a leak, then do these steps:
 - 1) Repair the leak.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If you do not find a leak, then continue.
- (4) Replace the equipment cooling duct pressure sensor (E4), M21586.

These are the tasks:

Equipment Cooling Duct Pressure Sensors Removal, AMM TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM TASK 21-27-08-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

812. E5 Duct has Low Air Pressure - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14112.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Clean or replace the equipment cooling air filter. To clean or replace the equipment cooling air filter, do the applicable task that follows:
 - (a) Do this task: Equipment Cooling Air Filter Cleaning, AMM TASK 21-27-02-100-801.
 - (b) These are the tasks:

Equipment Cooling Air Filter Removal, AMM TASK 21-27-02-000-801,
Equipment Cooling Air Filter Installation, AMM TASK 21-27-02-400-801.

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- (c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (d) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check for blockage or obstruction in these ducts:
 - (a) The ducts that connect the equipment cooling main supply duct to the E5 rack plenum.
 - (b) If you find unwanted material in the duct, then do these steps:
 - 1) Remove the unwanted material.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If you do not find any obstruction in the ducts, then continue.
- (3) Do a check for air leaks from the ducts that connect the equipment cooling main supply duct to the E5 rack plenum.
 - (a) If you find a leak, then do these steps:
 - 1) Repair the leak.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If you do not find a leak, then continue.
- (4) Replace the equipment cooling duct pressure sensor (E5), M21584.

These are the tasks:

Equipment Cooling Duct Pressure Sensors Removal, AMM TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM TASK 21-27-08-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

813. Flight Deck Duct has Low Air Pressure - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14121.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.

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- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Clean or replace the equipment cooling air filter. To clean or replace the equipment cooling air filter, do the applicable task that follows:
 - (a) Do this task: Equipment Cooling Air Filter Cleaning, AMM TASK 21-27-02-100-801.
 - (b) These are the tasks:
 - Equipment Cooling Air Filter Removal, AMM TASK 21-27-02-000-801,
 - Equipment Cooling Air Filter Installation, AMM TASK 21-27-02-400-801.
 - (c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check for blockage or obstruction in these ducts:
 - (a) The ducts that connect the equipment cooling low flow sensor (F/D), M21583, to the flight deck instrument panel, flight deck overhead panel, flight deck aisle stand, weather radar and the maintenance access terminal.
 - (b) If you find unwanted material in the duct, then do these steps:
 - 1) Remove the unwanted material.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If you do not find any obstruction in the ducts, then continue.
- (3) Do a check for air leaks from the ducts that connect the equipment cooling low flow sensor (F/D), M21583, to the flight deck instrument panel, flight deck overhead panel, flight deck aisle stand, weather radar and the maintenance access terminal.
 - (a) If you find a leak, then do these steps:
 - 1) Repair the leak.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If you do not find a leak, then continue.
- (4) Replace the equipment cooling duct pressure sensor (F/D), M21587.
 - These are the tasks:
 - Equipment Cooling Duct Pressure Sensors Removal, AMM TASK 21-27-08-000-801,
 - Equipment Cooling Duct Pressure Sensors Installation, AMM TASK 21-27-08-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.



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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

815. Forward Cargo Heat Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-15021.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the forward cargo heat valve, V21583.

These are the tasks:

Forward Cargo Heat Valve Removal, AMM TASK 21-27-22-000-802-002,

Forward Cargo Heat Valve Installation, AMM TASK 21-27-22-400-802-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the right ECS miscellaneous card (ECSMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the ground wiring:

- (a) Disconnect the electrical connector DV21583 from the valve V21583.
- (b) Do a continuity check between these pins of connector DV21583 and structure ground (WDM 21-27-11):
 - 1) Pin 4 to structure ground
 - 2) Pin 6 to structure ground
 - 3) Pin 10 to structure ground.

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- (c) If there is not continuity to structure ground at each of the pins of connector DV21583 specified above, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV21583.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If there is continuity at each of the pins of connector DV21583 specified above, then continue.
- (4) Do this check of the wiring between the valve and the right ECSMC:
 - (a) Remove the right ECSMC from the P84 panel. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (b) Disconnect connector DV21583 from the valve, V21583 (WDM 21-27-11).
 - (c) Do a wiring check between these pins of connector XA14 at the right systems cardfile, P84, and connector DV21583 at the valve, V21583 (SSM 21-27-11):

XA14	DV21583
pin 66	pin 9
pin 69	pin 7

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the ECSMC, A14.
 - c) Re-connect connector DV21583.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the wiring between the forward cargo heat valve relay and the valve:
 - (a) Remove the forward cargo heat valve relay, K21583, from the P110 panel (WDM 21-27-11).
 - (b) Do a wiring check between these pins of connector DK21583 in the P110 panel and connector DV21583 at the valve, V21583 (WDM 21-27-11):

DK21583	DV21583
pin A1	pin 5
pin A3	pin 3

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the relay, K21583.
 - c) Re-connect connector DV21583.

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- d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- e) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

816. Equipment Cooling Vent Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-15031.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the equipment cooling vent valve, V21584.
These are the tasks:
Equipment Cooling Vent Valve Removal, AMM TASK 21-27-21-000-801,
Equipment Cooling Vent Valve Installation, AMM TASK 21-27-21-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the left ECS miscellaneous card (ECSCMC), A14.
These are the tasks:
ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the ground wiring:
 - (a) Disconnect the electrical connector DV21584 from the valve V21584.
 - (b) Do a continuity check between these pins of connector DV21584 and structure ground (WDM 21-27-21):
 - 1) Pin 3 to structure ground

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- 2) Pin 5 to structure ground
- 3) Pin 8 to structure ground.
- (c) If there is not continuity to structure ground at each of the pins of connector DV21584 specified above, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV21584.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If there is continuity at each of the pins of connector DV21584 specified above, then continue.
- (4) Do this check of the wiring between the valve and the left ECSMC:
 - (a) Remove the left ECSMC from the P84 panel. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (b) Disconnect connector DV21584 from the valve, V21584 (WDM 21-27-21).
 - (c) Do a wiring check between these pins of connector XA14 at the left systems cardfile, P84, and connector DV21584 at the valve, V21584 (WDM 21-27-21):

XA14	DV21584
pin 66	pin 6
pin 69	pin 7

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the ECSMC, A14.
 - c) Re-connect connector DV21584.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the wiring between the equipment cooling vent valve relay and the valve:
 - (a) Remove the equipment cooling vent valve relay, K21584, from the P110 panel (WDM 21-27-21).
 - (b) Do a wiring check between these pins of connector DK21584 in the P110 panel and connector DV21584 at the valve, V21584 (WDM 21-27-21):

DK21584	DV21584
pin A1	pin 2
pin A3	pin 1

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the relay, K21584.

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- c) Re-connect connector DV21584.
- d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- e) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

818. VSCF Duct or E5 Duct Pressure Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-14052, 21-14062.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Disconnect the connector from the applicable duct pressure sensor (WDM 21-27-52):
 - (a) Connector DM21584 - E5 duct pressure sensor, M21584
 - (b) Connector DM21585 - VSCF duct pressure sensor, M21585.
- (2) Do a check for 28 VDC between pins 1 and 2 of connector DM21584 or DM21585:
- (3) If there is 28 VDC between pins 1 and 2, then do these steps:
 - (a) Replace the duct pressure sensor.

These are the tasks:

Equipment Cooling Duct Pressure Sensors Removal, AMM TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM TASK 21-27-08-400-801.
 - (b) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
 - (e) Remove the right ECS Miscellaneous Card (ECSCMC), A14. To remove the, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
 - (f) Disconnect the connector from the applicable duct pressure sensor:
 - 1) Connector DM21584 - E5 Pressure Sensor, M21584
 - 2) Connector DM21585 - VSCF Pressure Sensor, M21585.
 - (g) Do a wiring check between these pins of connector XA14 at the Right Systems Cardfile, P84, and the connector at the applicable duct pressure sensor (WDM 21-27-52).
 - 1) E5 Duct Pressure Sensor, M21584:

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XA14	DM21584
pin 27	pin 3
pin 26	pin 4

- 2) VSCF Pressure Sensor, M21585:

XA14	DM21585
pin 24	pin 3
pin 23	pin 4

- (h) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect the connector.
 - 3) Re-install the right ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Equipment Cooling System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (i) If you do not find a problem with the wiring, then do these steps:
- 1) Re-connect the connector.
 - 2) Replace the right ECSMC, A14.
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (4) If there is not 28 VDC between pins 1 and 2 at the connector of the applicable duct pressure sensor, then do these steps (WDM 21-27-52):
- (a) Do a continuity check between pin 2 of the connector and structure ground (WDM 21-27-52).
- (b) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect the connector.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If you do not find a problem with the wiring, then do these steps:
- 1) Do a check for 28 VDC between terminal QA49 of terminal block, TB4001 on the Right Integration Panel, P205, and structure ground (WDM 21-27-52).

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- 2) If there is not 28 VDC at terminal QA49 of TB4001, then do these steps:
 - a) Repair the wiring between circuit breaker C21664, on the Right Power Management Panel, P210, and terminal QA49 of TB4001 on the Right Integration Panel, P205 (WDM 21-27-52).
 - b) Re-connect the connector to the duct pressure sensor.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- 3) If there is 28 VDC at terminal QA49 of TB4001, then do these steps:
 - a) Repair the wiring between terminal QA49 of TB4001 on the Right Integration Panel, P205, and pin 1 of the connector at the applicable duct pressure sensor (WDM 21-27-52).
 - b) Re-connect the connector to the duct pressure sensor.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.

— END OF TASK —

819. Equip Cooling Low Flow Sensor (Flight Deck) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14042.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Disconnect the connector DM21583 from the low flow sensor, M21583 (WDM 21-27-51).
- (2) Do a check for 28 VDC between pins 1 and 2 of connector DM21583 (WDM 21-27-51).
- (3) If there is 28 VDC between pins 1 and 2 at connector DM21583, then do these steps:
 - (a) Replace the low flow sensor, M21583.

These are the tasks:

Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,

Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.

- 1) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.

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- 2) If the maintenance message does not show on the ground test display, you corrected the fault.
- 3) If the maintenance message shows on the ground test display, then continue.
- (b) Remove the right ECS Miscellaneous Card (ECSCMC), A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
- (c) Disconnect connector DM21583 from the low flow sensor, M21583 (WDM 21-27-51).
- (d) Do a wiring check between these pins of connector XA14 at the Right Systems Cardfile, P84, and connector DM21583 at the low flow sensor, M21583 (WDM 21-27-51).

XA14	DM21583
pin 29	pin 5
pin 30	pin 4

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21583.
 - 3) Re-install the right ECSCMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (f) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DM21583.
 - 2) Replace the right ECSCMC, A14.

These are the tasks:
ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (4) If there is not 28 VDC between pins 1 and 2 at connector DM21583, then do these steps (WDM 21-27-51):
 - (a) Do a continuity check between pin 2 of the connector and structure ground (WDM 21-27-51).
 - (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21583.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If you do not find a problem with the wiring, then do these steps:

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- 1) Do a wiring check between circuit breaker C21662 on the Standby Power Management Panel, P310, and pin 1 of connector DM21583 at the low flow sensor, M21583 (WDM 21-27-51):
- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21583.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

820. Relay (Equip Cooling Ovrdr Vlv R) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14102.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the override valve motor right relay, K21590 (WDM 21-27-61).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check for voltage at the relay:
 - (a) Remove the relay, K21590 (WDM 21-27-61).
 - (b) Do a check for 28 VDC from pin X1 of connector DK21590 on the Standby Power Management Panel, P310, to structure ground (WDM 21-27-61).
 - (c) Do a check for 28 VDC from pin B2 of connector DK21590 on the Standby Power Management Panel, P310, to structure ground (WDM 21-27-61).
 - (d) If there is not 28 VDC at pins X1 and B2 of DK21590, then do these steps:
 - 1) Repair the wiring between circuit breaker C21634 and pins X1 and B2 (WDM 21-27-61).
 - 2) Re-install the relay, K21590 (WDM 21-27-61).
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.

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- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If there is 28 VDC at pins X1 and B2 of DK21590, then continue.
- (3) Do this check of the wiring between the relay and the right equipment cooling controller:
 - (a) Disconnect connector DM21207B from the right equipment cooling controller, M21207.
 - (b) Do a wiring check between these pins of connector DK21590 at the Standby Power Management Panel, P310, and connector DM21207B at the controller, M21207:

DK21590	DM21207B
pin X2	pin 7

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the relay, K21590 (WDM 21-27-61).
 - 3) Reconnect connector DM21207B to the controller, M21207.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then do these steps:
 - 1) Replace the controller, M21207.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
 - 2) Re-install the relay, K21590 (WDM 21-27-61).
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the maintenance message does shows on the ground test display, then continue.
- (4) Do this check of the wiring between the SIU and the override valve motor R relay:
 - (a) Remove the relay, K21590 (WDM 21-27-61).
 - (b) Do a wiring check between these pins of connector DK21590 and DM24513A at the Standby Power Management Panel, P310:

DK21590	DM24513A
pin B1	pin 15

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the relay, K21590 (WDM 21-27-61).
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.

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- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-install the relay, K21590 (WDM 21-27-61).
 - 2) Do a check of the SIU 2, M24513, in the P310 panel.

This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring in the P310 panel right equipment cooling override valve relay circuit (WDM 21-27-61).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

821. Equip Cooling Supply Temperature High - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14081.

B. Initial Evaluation

- (1) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.
- (2) If the temperature of the air in the forward cargo compartment is more than approximately 130°F, then do these steps:
 - (a) Do this task: Supply Conditioned Air to the Airplane, AMM TASK 21-00-00-800-801.
 - (b) Close the passenger doors and forward cargo door.
 - (c) After 5 minutes, if the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while you supply conditioned air, you corrected the fault.
 - (d) After 5 minutes, if the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the temperature of the air in the forward cargo compartment is less than approximately 130°F, then do the Fault Isolation Procedure below.

C. Fault Isolation Procedure

- (1) Set the power switch for the left ECS miscellaneous card (ECSMC) A14, which is in the left systems cardfile, P85, to the OFF position.
- (2) After 5 minutes, if the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then do these steps:

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- (a) Replace the equipment cooling low flow sensor (Equipment Bay), M21582.

These are the tasks:

Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.

- 1) Set the power switch for the left ECSMC, A14, to the ON position.
- 2) Set the power switch for the right ECSMC A14, which is in the right systems cardfile, P84, the OFF position.
- 3) After 5 minutes, if the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) After 5 minutes, if the MAT shows ACTIVE for the maintenance message, then continue.
- 5) Set the power switch for the right ECSMC, A14, to the ON position.

- (b) Replace the left ECSMC, A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- 1) Set the power switch for the left ECSMC, A14, to the ON position.
- 2) Set the power switch for the right ECSMC, A14, to the OFF position.
- 3) After 5 minutes, if the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) Set the power switch for the right ECSMC, A14, to the ON position.

- (3) After 5 minutes, if the MAT shows ACTIVE for the maintenance message, then do these steps:

- (a) Set the power switch for the left ECSMC, A14, to the ON position.

- (b) Replace the equipment cooling low flow sensor (Flight Deck), M21583.

These are the tasks:

Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.

- 1) Set the power switch for the left ECSMC, A14, to the OFF position.
- 2) After 5 minutes, if the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 3) After 5 minutes, if the MAT shows ACTIVE for the maintenance message, then continue.
- 4) Set the power switch for the left ECSMC, A14, to the ON position.

- (c) Replace the right ECSMC, A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- 1) Set the power switch for the left ECSMC, A14, to the OFF position.
- 2) After 5 minutes, if the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- a) Set the power switch for the left ECSMC, A14, to the ON position.

————— **END OF TASK** —————

822. Equipment Cooling Supply Air Low - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14131.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Examine the equipment cooling air filter for too much contamination.
- (a) If the equipment cooling air filter has too much contamination, then do these steps:
- 1) Replace the equipment cooling air filter.
- These are the tasks:
- Equipment Cooling Air Filter Removal, AMM TASK 21-27-02-000-801,
Equipment Cooling Air Filter Installation, AMM TASK 21-27-02-400-801.
- a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- b) If the maintenance message does not show on the ground test display, you corrected the fault.
- c) If the maintenance message shows on the ground test display, then continue.
- (b) If the equipment cooling air filter does not have too much contamination, then continue.
- (2) Do this check of the left equipment cooling supply fan:
- (a) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21605	EQPT CLG SPLY FAN 1 CTRL

- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then do these steps:
- 1) Replace the left equipment cooling supply fan, B21581.
- These are the tasks:
- Equipment Cooling Supply Fan Removal, AMM TASK 21-27-03-000-801,
Equipment Cooling Supply Fan Installation, AMM TASK 21-27-03-400-801.

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- a) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21605	EQPT CLG SPLY FAN 1 CTRL

- b) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message, then continue.
- (d) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21605	EQPT CLG SPLY FAN 1 CTRL

- (3) Do this check of the right equipment cooling supply fan:

- (a) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21600	EQPT CLG SPLY FAN 2 CTRL

- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then do these steps:
- 1) Replace the right equipment cooling supply fan, B21582.

These are the tasks:

Equipment Cooling Supply Fan Removal, AMM TASK 21-27-03-000-801,
Equipment Cooling Supply Fan Installation, AMM TASK 21-27-03-400-801.

- a) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21600	EQPT CLG SPLY FAN 2 CTRL

- b) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message, then continue.
- (d) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21600	EQPT CLG SPLY FAN 2 CTRL

- (4) Examine the duct(s) upstream of the equipment cooling low flow sensor for damage or blockage.

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- (a) If the duct(s) are damaged or blocked, then do these steps.
 - 1) Repair the damaged duct(s).
 - 2) Remove the unwanted material from the duct(s).
 - a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (b) If the duct(s) are not damaged or blocked, then continue.
- (5) Replace the equipment cooling low flow sensor (Equipment Bay), M21582.

These are the tasks:

Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the left ECS Miscellaneous Card (ECSCMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

823. Flight Deck Equipment Cooling Airflow Low - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14132.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Examine the equipment cooling air filter for too much contamination.
 - (a) If the equipment cooling air filter has too much contamination, then do these steps:

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- 1) Replace the equipment cooling air filter.

These are the tasks:

Equipment Cooling Air Filter Removal, AMM TASK 21-27-02-000-801,
Equipment Cooling Air Filter Installation, AMM TASK 21-27-02-400-801.

- a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - c) If the maintenance message shows on the ground test display, then continue.
- (b) If the equipment cooling air filter does not have too much contamination, then continue.
- (2) Do this check of the left equipment cooling supply fan:
 - (a) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21605	EQPT CLG SPLY FAN 1 CTRL

- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then do these steps:

- 1) Replace the left equipment cooling supply fan, B21581.

These are the tasks:

Equipment Cooling Supply Fan Removal, AMM TASK 21-27-03-000-801,
Equipment Cooling Supply Fan Installation, AMM TASK 21-27-03-400-801.

- a) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21605	EQPT CLG SPLY FAN 1 CTRL

- b) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message, then continue.
- (d) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21605	EQPT CLG SPLY FAN 1 CTRL

- (3) Do this check of the right equipment cooling supply fan:

- (a) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21600	EQPT CLG SPLY FAN 2 CTRL

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- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then do these steps:

- 1) Replace the right equipment cooling supply fan, B21582.

These are the tasks:

Equipment Cooling Supply Fan Removal, AMM TASK 21-27-03-000-801,
Equipment Cooling Supply Fan Installation, AMM TASK 21-27-03-400-801.

- a) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21600	EQPT CLG SPLY FAN 2 CTRL

- b) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.

- c) If the maintenance message does not show on the ground test display, you corrected the fault.

- (c) If the MAT shows ACTIVE for the maintenance message, then continue.

- (d) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21600	EQPT CLG SPLY FAN 2 CTRL

- (4) Replace the equipment cooling low flow sensor (Flight Deck), M21583.

These are the tasks:

Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

- (c) If the maintenance message shows on the ground test display, then continue.

- (5) Replace the right ECS Miscellaneous Card (ECSCMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

- (c) If the maintenance message shows on the ground test display, then continue.

- (6) Examine the duct(s) upstream of the equipment cooling low flow sensor for damage or blockage.

- (a) If the duct(s) are damaged or blocked, then do these steps.

- 1) Repair the damaged duct(s).

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- 2) Remove the unwanted material from the duct(s).
 - a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

826. WOW (left or right) and PSEU 1 Disagree Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-18111.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Present Leg Faults display on the MAT.
 - (a) If a maintenance message related to the proximity sensor electronics unit 1 (PSEU 1) shows in Present Leg Faults, then do these steps:
 - 1) Find the message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If a maintenance message related to the proximity sensor electronics unit 1 (PSEU 1) does not show in Present Leg Faults, then continue:
- (2) Replace the left PSEU, M32021.

These are the tasks:

Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801,
Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the left ECS miscellaneous card (ECSMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

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ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the left equipment cooling controller, M21104.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,

Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

827. WOW (left or right) and PSEU 2 Disagree Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-18121.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Present Leg Faults display on the MAT.
 - (a) If a maintenance message related to the proximity sensor electronics unit 2 (PSEU 2) shows in Present Leg Faults, then do these steps:
 - 1) Find the message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If a maintenance message related to the proximity sensor electronics unit 2 (PSEU 2) does not show in Present Leg Faults, then continue:
- (2) Replace the right PSEU, M32025.

These are the tasks:

Proximity Sensor Electronics Unit Removal, AMM TASK 32-08-01-000-801,

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Proximity Sensor Electronics Unit Installation, AMM TASK 32-08-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the right ECS miscellaneous card (ECSMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the right equipment cooling controller, M21107.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,

Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

832. Equipment Cooling Override Valve Motor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14031.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the equipment cooling override valve, V21585.

These are the tasks:

Equipment Cooling Override Valve Removal, AMM TASK 21-27-04-000-801,

Equipment Cooling Override Valve Installation, AMM TASK 21-27-04-400-801.

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- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) If the EICAS status message OVRD VALVE MOTOR L shows, then do these steps:
 - (a) Replace the left ECS miscellaneous card (ECSMC), A14, in the Left Systems Cardfile, P85.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- 1) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- 2) If the maintenance message does not show on the ground test display, you corrected the fault.
- 3) If the maintenance message shows on the ground test display, then continue.
- (b) Disconnect connector DV21585A from the valve, V21585 (WDM 21-27-61).
- (c) Do a continuity check between these pins of connector DV21585A and structure ground (WDM 21-27-61):
 - 1) Pin 1 to structure ground
 - 2) Pin 6 to structure ground
 - 3) Pin 7 to structure ground.
 - 4) If there is not continuity between the pins specified above of connector DV21585A and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DV21585A.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If there is continuity between the pins specified above of connector DB21585A and structure ground, then continue.
- (d) Do this check of the wiring between the left ECSMC and the valve:
 - 1) Remove the left ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - 2) Disconnect connector DV21585A from the valve, V21585.
 - 3) Do a wiring check between these pins of connector XA14 at the left ECSMC, A14, and connector DV21585A at the valve, V21585 (WDM 21-27-61):

XA14

pin 72 pin 8
pin 75 pin 9

DV21585A

- 4) If you find a problem with the wiring, then do these steps:

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- a) Repair the wiring.
 - b) Re-install the left ECSMC, A14. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - c) Re-connect connector DV21585A.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
- 5) If you do not find a problem with the wiring, then continue.
 - 6) Re-install the left ECSMC, A14. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (e) Do this check of the wiring between the left override valve motor relay and the valve:
- 1) Remove the left override valve motor relay, K21589 (WDM 21-27-61).
 - 2) Do a wiring check between these pins of connector DK21589 at the P310 panel, and connector DV21585A at the valve, V21585 (WDM 21-27-61):

K21589	DV21585A
pin A1	pin 12
pin A3	pin 14

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the relay K21589.
 - c) Re-connect connector DV21585A.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) If the EICAS status message OVRD VALVE MOTOR R shows, then do these steps:
- (a) Replace the right ECS miscellaneous card (ECSMC), A14, in the Right Systems Cardfile, P84.

These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

 - 1) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
 - (b) Disconnect connector DV21585B from the valve, V21585 (WDM 21-27-61).
 - (c) Do a continuity check between these pins of connector DV21585B and structure ground (WDM 21-27-61):
 - 1) Pin 1

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- 2) Pin 6
- 3) Pin 7
- 4) If there is not continuity between the pins specified above of connector DV21585B and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DV21585B.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- 5) If there is continuity between the pins specified above of connector DB21585B and structure ground, then continue.
- (d) Do this check of the wiring between the right ECSMC and the valve:
 - 1) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - 2) Disconnect connector DV21585B from the valve, V21585.
 - 3) Do a wiring check between these pins of connector XA14 at the right ECSMC, A14, and connector DV21585B at the valve, V21585 (WDM 21-27-61):

XA14	DV21585B
pin 72	pin 8
pin 75	pin 9

- 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the right ECSMC, A14. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - c) Re-connect connector DV21585B.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
- 5) If you do not find a problem with the wiring, then continue.
- 6) Re-install the right ECSMC, A14. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (e) Do this check of the wiring between the right override valve motor relay and the valve:
 - 1) Remove the right override valve motor relay, K21590 (WDM 21-27-61).
 - 2) Do a wiring check between these pins of connector DK21590 at the P310 panel, and connector DV21585B at the valve, V21585 (WDM 21-27-61):

K21590	DV21585B
pin A1	pin 12
pin A3	pin 14

- 3) If you find a problem with the wiring, then do these steps:

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- a) Repair the wiring.
- b) Re-install the relay K21590.
- c) Re-connect connector DV21585B.
- d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- e) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

833. Equipment Cooling Controller (Left) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14011.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left equipment cooling controller, M21104.

These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the low flow sensor (Equipment Bay), M21582.

These are the tasks:
Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the right equipment cooling controller, M21207.

These are the tasks:

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Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the left ECS miscellaneous card (ECSCMC), A14.
- These are the tasks:
- ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this continuity check between the left equipment cooling controller and structure ground:
- (a) Disconnect connectors DM21104A and DM21104B from the left equipment cooling controller, M21104.
 - (b) Do a continuity check between pin 10 of connector DM21104A and structure ground (WDM 21-27-61).
 - (c) Do a continuity check between pin 2 of connector DM21104B and structure ground (WDM 21-27-61).
 - 1) If there is not continuity between pin 10 of connector DM21104A and pin 2 of connector DM21104B and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connectors DM21104A and DM21104B to the left equipment cooling controller, M21104.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pin 10 of connector DM21104A and pin 2 of connector DM21104B and structure ground, then continue.
 - 3) Re-connect connectors DM21104A and DM21104B to the left equipment cooling controller, M21104.
- (6) Do this continuity check between the right equipment cooling controller and structure ground:
- (a) Disconnect connector DM21207A and DM21207B from the right equipment cooling controller, M21207.
 - (b) Do a continuity check between pin 10 of connector DM21207A and structure ground (WDM 21-27-61).
 - (c) Do a continuity check between pin 2 of connector DM21207B and structure ground (WDM 21-27-61).

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- 1) If there is not continuity between pin 10 of connector DM21207A and pin 2 of connector DM21207B and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connectors DM21207A and DM21207B to the right equipment cooling controller, M21207.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pin 10 of connector DM21207A and pin 2 of connector DM21207B and structure ground, then continue.
 - 3) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
- (7) Do this check of the wiring between the left equipment cooling controller and the right equipment cooling controller:
- (a) Disconnect connector DM21104B from the left equipment cooling controller, M21104.
 - (b) Do a wiring check between these pins of connector DM21104B at the left equipment cooling controller, M21104, and connector DM21207B at the right equipment cooling controller, M21207 (WDM 21-27-31):
- | DM241104B | DM21207B |
|------------------|-----------------|
| pin 5 | pin 10 |
| pin 6 | pin 9 |
| pin 9 | pin 6 |
| pin 10 | pin 5 |
- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21104B to the left equipment cooling controller, M21104.
 - 3) Re-connect connector DM21207B to the right equipment cooling controller, M21207.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If you do not find a problem with the wiring, then continue.
 - (e) Re-connect connector DM21207B to the right equipment cooling controller, M21207.
 - (f) Re-connect connector DM21104B to the left equipment cooling controller, M21104.
- (8) Do this check of the wiring between the left equipment cooling controller and the left ECSMC:
- (a) Disconnect connector DM21104A from the left equipment cooling controller, M21104.
 - (b) Remove the left ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (c) Do a wiring check between these pins of connector DM21104A at the left equipment cooling controller, M21104, and connector XA14 at the left systems cardfile, P85 (WDM 21-27-31):

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DM21104A	XA14
pin 1	pin 17
pin 2	pin 9
pin 3	pin 12
pin 4	pin 15
pin 5	pin 65
pin 6	pin 56
pin 7	pin 59
pin 8	pin 62
pin 24	pin 93

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21104A to the left equipment cooling controller, M21104.
 - 3) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (9) Do this check of the wiring between the low flow sensor (Equipment Bay) and the left equipment cooling controller:
- (a) Disconnect connector DM21582 from the low flow sensor (Equipment Bay), M21582 (WDM 21-27-51).
 - (b) Do a wiring check between these pins of connector DM21104A at the left equipment cooling controller M21104, and connector DM21582 at the low flow sensor, M21582 (WDM 21-27-51) (WDM 21-27-61):

DM21104A	DM21582
pin 23	pin 7

- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21104A to the left equipment cooling controller, M21104.
 - 3) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
 - 4) Re-connect connector DM21582 to the low flow sensor, M21582.
 - 5) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

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834. Equipment Cooling Controller (Right) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14012.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right equipment cooling controller, M21207.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the low flow sensor (Flight Deck), M21583.
These are the tasks:
Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the left equipment cooling controller, M21104.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the right ECS miscellaneous card (ECSMC), A14.

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These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this continuity check between the right equipment cooling controller and structure ground:
- (a) Disconnect connectors DM21207A and DM21207B from the right equipment cooling controller, M21207.
 - (b) Do a continuity check between pin 10 of connector DM21207A and structure ground (WDM 21-27-61).
 - (c) Do a continuity check between pin 2 of connector DM21207B and structure ground (WDM 21-27-61).
 - 1) If there is not continuity between pin 10 of connector DM21207A and pin 2 of connector DM21207B and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connectors DM21207A and DM21207B to the right equipment cooling controller, M21207.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pin 10 of connector DM21207A and pin 2 of connector DM21207B and structure ground, then continue.
 - 3) Re-connect connectors DM21207A and DM21207B to the right equipment cooling controller, M21207.
- (6) Do this continuity check between the left equipment cooling controller and structure ground:
- (a) Disconnect connector DM21104A and DM21104B from the left equipment cooling controller, M21104.
 - (b) Do a continuity check between pin 10 of connector DM21104A and structure ground (WDM 21-27-61).
 - (c) Do a continuity check between pin 2 of connector DM21104B and structure ground (WDM 21-27-61).
 - 1) If there is not continuity between pin 10 of connector DM21104A and pin 2 of connector DM21104B and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connectors DM21104A and DM21104B to the left equipment cooling controller, M21104.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.

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- 2) If there is continuity between pin 10 of connector DM21104A and pin 2 of connector DM21104B and structure ground, then continue.
- 3) Re-connect connector DM21104A to the left equipment cooling controller, M21104.
- (7) Do this check of the wiring between the left equipment cooling controller and the right equipment cooling controller:
 - (a) Disconnect connector DM21207B from the right equipment cooling controller, M21207.
 - (b) Do a wiring check between these pins of connector DM21104B at the left equipment cooling controller, M21104, and connector DM21207B at the right equipment cooling controller, M21207 (WDM 21-27-31):

DM21104B		DM21207B	
pin 5	.....	pin 10	
pin 6	.....	pin 9	
pin 9	.....	pin 6	
pin 10	.....	pin 5	

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21104B to the left equipment cooling controller, M21104.
 - 3) Re-connect connector DM21207B to the right equipment cooling controller, M21207.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (e) Re-connect connector DM21104B to the left equipment cooling controller, M21104.
- (f) Re-connect connector DM21207B to the right equipment cooling controller, M21207.
- (8) Do this check of the wiring between the right equipment cooling controller and the right ECSMC:
 - (a) Disconnect connector DM21207A from the right equipment cooling controller, M21207.
 - (b) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (c) Do a wiring check between these pins of connector DM21207A at the right equipment cooling controller, M21207, and connector XA14 at the right systems cardfile, P84 (WDM 21-27-32):

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DM21207A	XA14
pin 1	pin 17
pin 2	pin 9
pin 3	pin 12
pin 4	pin 15
pin 5	pin 65
pin 6	pin 56
pin 7	pin 59
pin 8	pin 62
pin 24	pin 93

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
 - 3) Re-install the right ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the right ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (9) Do this check of the wiring between the low flow sensor (Flight Deck) and the right equipment cooling controller:
- (a) Disconnect connector DM21583 from the low flow sensor (Flight Deck), M21583 (WDM 21-27-51).
 - (b) Do a wiring check between these pins of connector DM21207A at the right equipment cooling controller M21207, and connector DM21583 at the low flow sensor, M21583 (WDM 21-27-51) (WDM 21-27-61):

DM21207A	DM21583
pin 23	pin 7

- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
 - 3) Reconnect connector DM21583 to the low flow sensor, M21583.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

———— **END OF TASK** ————

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835. EICAS Message EQUIP COOLING OVRD - Fault Isolation

A. Initial Evaluation

- (1) This message shows when the equipment cooling override valve is in the OVRD position.
- (2) The valve can be in the OVRD position because:
 - (a) The EQUIP COOLING switch is in the OVRD position
 - (b) An equipment cooling system component has failed
 - (c) Smoke has been detected in the equipment cooling system ducts
 - (d) The forward cargo fire system is armed.
- (3) If the MAT shows ACTIVE for any maintenance message related to the equipment cooling system, then do the Fault Isolation Procedure for that message.
- (4) Make sure that there is no smoke in the equipment cooling system ducts.
- (5) Make sure that the forward cargo fire extinguishing system is not armed.
- (6) To put the equipment cooling system back to the normal mode, set the EQUIP COOLING switch to the OVRD position and then back to the AUTO position.

————— END OF TASK —————

836. Equipment Cooling Controller (Left) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-17011, 21-17311, 21-17321, 21-17511.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left equipment cooling controller, M21104.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the left ECS miscellaneous card (ECSMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

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ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring between the left equipment cooling controller and the left ECSCMC:
- (a) Disconnect connector DM21104A from the left equipment cooling controller, M21104.
 - (b) Remove the left ECSCMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801
 - (c) Do a wiring check between these pins of connector DM21104A at the left equipment cooling controller, M21104, and connector XA14 at the left systems cardfile, P85 (WDM 21-27-31) (SSM 21-27-12):

DM21104A	XA14
pin 5	pin 65
pin 6	pin 56
pin 7	pin 59
pin 8	pin 62

- 1) Repair the wiring.
- 2) Re-connect connector DM21104A to the left equipment cooling controller, M21104.
- 3) Re-install the left ECSCMC. To re-install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801
- 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

837. Equipment Cooling Controller (Right) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-17012, 21-17312, 21-17322, 21-17512.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right equipment cooling controller, M21207.

These are the tasks:

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Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the right ECS miscellaneous card (ECSMC), A14.
- These are the tasks:
- ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring between the right equipment cooling controller and the right ECSMC:
- (a) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (b) Disconnect connector DM21207A from the right equipment cooling controller, M21207.
 - (c) Do a wiring check between these pins of connector DM21207A at the right equipment cooling controller, M21207, and connector XA14 at the right systems cardfile, P84 (WDM 21-27-32) (SSM 21-27-13):

DM21207A	XA14
pin 5	pin 65
pin 6	pin 56
pin 7	pin 59
pin 8	pin 62

- 1) Repair the wiring.
- 2) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
- 3) Re-install the right ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

838. Equipment Cooling Controller (Left) Has No Output On Any Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-17031.

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B. Fault Isolation Procedure

- (1) Replace the left equipment cooling controller, M21104.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,

Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

839. Equipment Cooling Controller (Right) Has No Output On Any Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-17032.

B. Fault Isolation Procedure

- (1) Replace the right equipment cooling controller, M21207.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,

Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

840. Equipment Cooling Controller (Left) Has No Input From Equipment Cooling Controller (Right) - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-17412, 21-17421.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

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- (1) Replace the right equipment cooling controller, M21207.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the left equipment cooling controller, M21104.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring between the left equipment cooling controller and the right equipment cooling controller:
 - (a) Disconnect connector DM21104B from the left equipment cooling controller, M21104.
 - (b) Disconnect connector DM21207B from the right equipment cooling controller, M21207.
 - (c) Do a wiring check between these pins of connector DM21104B at the left equipment cooling controller, M21104, and connector DM21207B at the right equipment cooling controller, M21207 (WDM 21-27-61):

DM21104B	DM21207B
pin 5	pin 10
pin 6	pin 9
pin 9	pin 6
pin 10	pin 5
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21104B to the left equipment cooling controller, M21104.
 - 3) Re-connect connector DM21207B to the right equipment cooling controller, M21207.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM21104B to the left equipment cooling controller, M21104.
- (g) Re-connect connector DM21207B to the right equipment cooling controller, M21207.

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- (4) Replace the left ECS miscellaneous card (ECSMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

841. Equipment Cooling Controller (Right) Has No Input From Equipment Cooling Controller (Left) - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-17411, 21-17422.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the left equipment cooling controller, M21104.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,

Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the right equipment cooling controller, M21207.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,

Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring between the left equipment cooling controller and the right equipment cooling controller:
 - (a) Disconnect connector DM21104B from the left equipment cooling controller, M21104.
 - (b) Disconnect connector DM21207B from the right equipment cooling controller, M21207.
 - (c) Do a wiring check between these pins of connector DM21104B at the left equipment cooling controller, M21104, and connector DM21207B at the right equipment cooling controller, M21207 (WDM 21-27-61):

DM21104B	DM21207B
pin 5	pin 10
pin 6	pin 9
pin 9	pin 6
pin 10	pin 5

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21104B to the left equipment cooling controller, M21104.
 - 3) Re-connect connector DM21207B to the right equipment cooling controller, M21207.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM21104B to the left equipment cooling controller, M21104.
- (g) Re-connect connector DM21207B to the right equipment cooling controller, M21207.
- (4) Replace the right ECS miscellaneous card (ECSMC), A14.
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

842. Left ECSMC Has No Input From Left Equipment Cooling Controller On Serial Bus

A. Maintenance Messages

- (1) This task is for maintenance message: 21-17021.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the left equipment cooling controller, M21104.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the wiring between the left equipment cooling controller and the left ECSMC:
 - (a) Disconnect connector DM21104A from the left equipment cooling controller, M21104.
 - (b) Remove the left ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (c) Do a wiring check between these pins of connector DM21104A at the left equipment cooling controller, M21104, and connector XA14 at the left systems cardfile, P85 (WDM 21-27-31) (SSM 21-27-12):

DM21104A		XA14
pin 5	.....	pin 65
pin 6	.....	pin 56
pin 7	.....	pin 59
pin 8	.....	pin 62

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21104A to the left equipment cooling controller, M21104. To install it, do this task: Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801
 - 3) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801

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- 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM21104A to the left equipment cooling controller, M21104. To install it, do this task: Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801
- (3) Replace the left ECS miscellaneous card (ECSMC), A14.
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

— END OF TASK —

843. Right ECSMC Has No Input From Right Equipment Cooling Controller On Serial Bus

A. Maintenance Messages

- (1) This task is for maintenance message: 21-17022.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the right equipment cooling controller, M21207.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the wiring between the right equipment cooling controller and the right ECSMC:
- (a) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (b) Disconnect connector DM21207A from the right equipment cooling controller, M21207.
 - (c) Do a wiring check between these pins of connector DM21207A at the right equipment cooling controller, M21207, and connector XA14 at the right systems cardfile, P84 (WDM 21-27-32) (SSM 21-27-13):
- | DM21207A | XA14 |
|----------|--------|
| pin 5 | pin 65 |
| pin 6 | pin 56 |
| pin 7 | pin 59 |
| pin 8 | pin 62 |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
 - 3) Re-install the right ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
- (3) Replace the right ECS miscellaneous card (ECSMC), A14.
- These are the tasks:
- ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

844. Low Flow Signal from Right ECC and Right ECSMC Do Not Agree

A. Maintenance Messages

- (1) This task is for maintenance message: 21-17132.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the low flow sensor (Flight Deck), M21583.
These are the tasks:
Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the wiring between the right equipment cooling controller and the flight deck low flow sensor:
 - (a) Disconnect connector DM21583 from the flight deck low flow detector, D21583.
 - (b) Disconnect connector DM21207A from the right equipment cooling controller, M21207.
 - (c) Do a wiring check between these pins of connector DM21207A at the right equipment cooling controller, M21207, and connector DM21583 at the low flow detector (WDM 21-27-51):

DM21207A

DM21583

pin 23 pin 7

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
 - 3) Reconnect connector DM21583 to the flight deck low flow detector.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Reconnect connector DM21583 to the flight deck low flow detector.
- (3) Replace the right equipment cooling controller, M21207.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,

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Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring between the right ECSMC and the flight deck low flow sensor:
 - (a) Disconnect connector DM21583 from the flight deck low flow detector, D21583.
 - (b) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (c) Do a wiring check between these pins of connector XA14 at the right system cardfile, P84, and connector DM21583 at the low flow detector, D21583 (WDM 21-27-51) (SSM 21-27-51):

XA14	DM21583
pin 96	pin 6

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the right ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 3) Reconnect connector DM21583 to the flight deck low flow detector.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Reconnect connector DM21583 to the flight deck low flow detector.
- (5) Replace the right ECS miscellaneous card (ECSMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

845. Low Flow Signal from Left ECC and Left ECSMC Do Not Agree

A. Maintenance Messages

- (1) This task is for maintenance message: 21-17131.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the low flow sensor (EE Bay), M21582.
These are the tasks:
Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the wiring between the left equipment cooling controller and the EE bay low flow sensor:
 - (a) Disconnect connector DM21582 from the EE bay low flow detector, D21582.
 - (b) Disconnect connector DM21104A from the left equipment cooling controller, M21104.
 - (c) Do a wiring check between these pins of connector DM21104A at the left equipment cooling controller, M21104, and connector DM21582 at the low flow detector (WDM 21-27-51) (WDM 21-27-61):

DM21104A	DM21582
pin 23	pin 7
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21104A to the left equipment cooling controller, M21104. To re-install it, do this task: Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801
 - 3) Reconnect connector DM21582 to the EE bay low flow detector.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (g) Reconnect connector DM21582 to the EE bay low flow detector.

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- (3) Replace the left equipment cooling controller, M21104.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring between the left ECSMC and the EE bay low flow sensor:
- (a) Disconnect connector DM21582 from the EE bay low flow detector, D21582.
- (b) Remove the left ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
- (c) Do a wiring check between these pins of connector XA14 at the left system cardfile, P85, and connector DM21582 at the low flow detector, D21582 (WDM 21-27-51) (SSM 21-27-51):

XA14	DM21582
pin 96	pin 6

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
- 2) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- 3) Reconnect connector DM21582 to the EE bay low flow detector.
- 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Reconnect connector DM21582 to the EE bay low flow detector.
- (5) Replace the left ECS miscellaneous card (ECSMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

846. Low Flow Signal from Left ECC (Channel A or Channel B) and Left ECSMC Do Not Agree

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-17111, 21-17121.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left equipment cooling controller, M21104.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the wiring between the left equipment cooling controller and the EE bay low flow sensor:
 - (a) Disconnect connector DM21582 from the EE bay low flow detector, D21582.
 - (b) Disconnect connector DM21104A from the left equipment cooling controller, M21104.
 - (c) Do a wiring check between these pins of connector DM21104A at the left equipment cooling controller, M21104, and connector DM21582 at the low flow detector (WDM 21-27-51) (WDM 21-27-61):

DM21104A	DM21582
pin 23	pin 7
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21104A to the left equipment cooling controller, M21104.
 - 3) Reconnect connector DM21582 to the EE bay low flow detector.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-connect connector DM21104A to the left equipment cooling controller, M21104.
- (3) Do this check of the wiring between the left ECSMC and the EE bay low flow sensor:
 - (a) Disconnect connector DM21582 from the EE bay low flow detector, D21582.

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- (b) Remove the left ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
- (c) Do a wiring check between these pins of connector XA14 at the left system cardfile, P85, and connector DM21582 at the low flow detector, D21582 (WDM 21-27-51) (SSM 21-27-51):

XA14	DM21582
pin 96	pin 6

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Reconnect connector DM21582 to the EE bay low flow detector.
 - 3) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (g) Reconnect connector DM21582 to the EE bay low flow detector.
- (4) Replace the left ECS miscellaneous card (ECSMC), A14.
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the low flow sensor (EE Bay), M21582.
These are the tasks:
Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

847. Low Flow Signal from Right ECC (Channel A or Channel B) and Right ECSMC Do Not Agree

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-17112, 21-17122.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right equipment cooling controller, M21207.
These are the tasks:
Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the wiring between the right equipment cooling controller and the flight deck low flow sensor:
 - (a) Disconnect connector DM21583 from the flight deck low flow detector, D21583.
 - (b) Disconnect connector DM21207A from the right equipment cooling controller, M21207.
 - (c) Do a wiring check between these pins of connector DM21207A at the left equipment cooling controller, M21104, and connector DM21583 at the low flow detector (WDM 21-27-51) (WDM 21-27-61):

DM21207A	DM21583
pin 23	pin 7
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
 - 3) Re-connect connector DM21583 to the flight deck low flow detector.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM21583 to the flight deck low flow detector.
- (3) Do this check of the wiring between the right ECSMC and the flight deck low flow sensor:
 - (a) Disconnect connector DM21583 from the flight deck low flow detector, D21583.

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- (b) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
- (c) Do a wiring check between these pins of connector XA14 at the left system cardfile, P84, and connector DM21583 at the low flow detector, D21583 (WDM 21-27-51) (SSM 21-27-51):

XA14	DM21583
pin 96	pin 6

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the right ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 3) Reconnect connector DM21583 to the flight deck low flow detector.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Reconnect connector DM21583 to the flight deck low flow detector.
- (4) Replace the right ECS miscellaneous card (ECSMC), A14.
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the low flow sensor (flight deck), M21583.
These are the tasks:
Equipment Cooling Low Flow Sensors Removal, AMM TASK 21-27-07-000-801,
Equipment Cooling Low Flow Sensors Installation, AMM TASK 21-27-07-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

848. PSEU Nose Gear Compressed Signal from Left ECC and Left ECSMC Do Not Agree

A. Maintenance Messages

- (1) This task is for maintenance message: 21-17231.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the wiring between the left equipment cooling controller and the left ECSMC:
 - (a) Remove the left ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (b) Disconnect connector DM21104A from the left equipment cooling controller, M21104.
 - (c) Do a wiring check between these pins of connector DM21104A at the left equipment cooling controller, M21104, and connector XA14 at the left systems cardfile, P85 (WDM 21-27-32) (SSM 21-27-13):

DM21104A	XA14
pin 24	pin 93

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21104A to the left equipment cooling controller, M21207.
 - 3) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (2) Replace the left equipment cooling controller, M21104.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,

Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the left ECS miscellaneous card (ECSMC), A14.

These are the tasks:

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ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

849. PSEU Nose Gear Compressed Signal from Left ECC (Channel A or Channel B) and Left ECSCMC Do Not Agree

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-17211, 21-17221.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left equipment cooling controller, M21104.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the wiring between the left equipment cooling controller and the left ECSCMC:
 - (a) Remove the left ECSCMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801
 - (b) Disconnect connector DM21104A from the left equipment cooling controller, M21104.
 - (c) Do a wiring check between these pins of connector DM21104A at the left equipment cooling controller, M21104, and connector XA14 at the left systems cardfile, P85 (WDM 21-27-32) (SSM 21-27-13):

DM21104A	XA14
pin 24	pin 93

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.

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- 2) Re-connect connector DM21104A to the left equipment cooling controller, M21207.
 - 3) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-install the left ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (3) Replace the left equipment cooling controller, M21104.
- These are the tasks:
- Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the left ECS miscellaneous card (ECSMC), A14.
- These are the tasks:
- ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

850. PSEU Nose Gear Compressed Signal from Right ECC and Right ECSMC Do Not Agree

A. Maintenance Messages

- (1) This task is for maintenance message: 21-17232.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Do this check of the wiring between the right equipment cooling controller and the right ECSMC:
 - (a) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (b) Disconnect connector DM21207A from the right equipment cooling controller, M21207.
 - (c) Do a wiring check between these pins of connector DM21207A at the right equipment cooling controller, M21207, and connector XA14 at the right systems cardfile, P84 (WDM 21-27-32) (SSM 21-27-13):

DM21207A	XA14
pin 24	pin 93
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
 - 3) Re-install the right ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-install the right ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (2) Replace the right equipment cooling controller, M21207.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
 - (3) Replace the right ECS miscellaneous card (ECSMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

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851. PSEU Nose Gear Compressed Signal from Right ECC (Channel A or Channel B) and Right ECSMC Do Not Agree

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-17212, 21-17222.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right equipment cooling controller, M21207.

These are the tasks:

Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,

Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the wiring between the right equipment cooling controller and the right ECSMC:
 - (a) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (b) Disconnect connector DM21207A from the right equipment cooling controller, M21207.
 - (c) Do a wiring check between these pins of connector DM21207A at the right equipment cooling controller, M21207, and connector XA14 at the right systems cardfile, P84 (WDM 21-27-32) (SSM 21-27-13):

DM21207A	XA14
pin 24	pin 93

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
 - 3) Re-install the right ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM21207A to the right equipment cooling controller, M21207.
- (g) Re-install the right ECSMC. To re-install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
- (3) Replace the right ECS miscellaneous card (ECSMC), A14.
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

856. IFE Cooling Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16301.

B. Initial Evaluation

- (1) If the IFE/PASS SEATS switch on the (P5) panel is in the ON position and the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the IFE/PASS SEATS switch on the (P5) panel is in the OFF position and MAT shows LATCHED for the maintenance message. Then the maintenance message is a nuisance message and you do not need to do the Fault Isolation Procedure.

NOTE: When the IFE/PASS SEATS switch is in the OFF position, the IFE Cooling Fan will be turned OFF by ELMS. The ECSMC fail/fault logic will determine that the Fan is OFF when it is still commanded to be ON, and then will set the EICAS Statue Message IFES COOLING FAN and the associated Maintenance Message.

- (3) If the IFE/PASS SEATS switch on the (P5) panel is in the ON position and the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the IFE cooling fan, B21271.

These are the tasks:

In-Flight Entertainment (IFE) Cooling Fan Removal, AMM TASK 21-27-35-000-801,

In-Flight Entertainment (IFE) Cooling Fan Installation, AMM TASK 21-27-35-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

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- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the left ECS miscellaneous card (ECSCMC), A14.
- These are the tasks:
- ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the IFE cooling fan ground wiring:
- (a) Disconnect the electrical connector DB21271 from the fan B21271.
- (b) Do a continuity check between pin 5 of connector DB21271 and structure ground (WDM 21-27-35):
- (c) If you do not find continuity, then do these steps:
- 1) Repair the wiring.
 - 2) Reconnect connector DB21271.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If you find continuity, then continue.
- (4) Do this check of the wiring between the IFE cooling fan relay and the fan:
- (a) Remove the IFE cooling fan relay, K21271, from the P110 panel (WDM 21-27-35).
- (b) Do a wiring check between these pins of connector DK21271 in the P110 panel and connector DB21271 at the fan, B21271 (WDM 21-27-35):
- | DK21271 | DB21271 |
|----------------|----------------|
| pin A1 | pin 1 |
| pin B1 | pin 2 |
| pin C1 | pin 3 |
- 1) If you find a problem with the wiring, then do these steps:
- a) Repair the wiring.
 - b) Reinstall the relay, K21271.
 - c) Reconnect connector DB21271.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - e) If the maintenance message does not show on the ground test display, then you corrected the fault.
- 2) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the wiring between the fan and the left ECSCMC:

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- (a) Remove the left ECSMC from the P85 panel. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
- (b) Disconnect connector DB21271 from the fan, B21271 (WDM 21-27-35).
- (c) Do a wiring check between these pins of connector XA14 at the left systems cardfile, P85, and connector DB21271 at the fan, B21271 (WDM 21-27-35):

XA14	DB21271
pin 63	pin 6

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reinstall the ECSMC.
 - c) Reconnect connector DB21271.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - e) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 2) If you do not find a problem with the wiring, then continue.
- (6) Do a check of the internal wiring in the P110 panel IFE cooling fan current monitor circuit (WDM 21-27-35).
- (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

———— **END OF TASK** ————

858. IFE Cooling Smoke Detector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-16331, 21-16341.

B. Initial Evaluation

- (1) Make sure that there is no smoke in the IFE cooling system.
- (2) Make sure that the FWD CARGO FIRE switch on the Forward Overhead Panel, P5 is not in the ARMED position.
- (3) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (4) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Replace the IFE cooling smoke detector, M21273.

These are the tasks:

In-Flight Entertainment (IFE) Cooling Smoke Detector Removal, AMM
TASK 21-27-53-000-801,

In-Flight Entertainment (IFE) Cooling Smoke Detector Installation, AMM
TASK 21-27-53-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the left ECS miscellaneous card (ECSCMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the IFE cooling smoke detector ground wiring:
- (a) Disconnect the electrical connector DM21273 from the smoke detector M21273.
 - (b) Do a continuity check between these pins of connector DM21273 and structure ground (WDM 21-27-53):
 - 1) Pin 5 to structure ground
 - 2) Pin 8 to structure ground.
 - (c) If you do not find continuity, then do these steps:
 - 1) Repair the wiring.
 - 2) Reconnect connector DM21273.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If you find continuity, then continue.
- (4) Do this check of the wiring between the IFE cooling smoke detector and the P110 power panel:
- (a) Disconnect connector D11032P from the P110 panel (WDM 21-27-53).
 - (b) Do a wiring check between these pins of connector D11032P at the P110 panel and connector DM21273 at the smoke detector, M21273 (WDM 21-27-53):

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D11032P

pin 30 pin 4
pin 15 pin 9

DM21273

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reconnect connector D11032P.
 - c) Reconnect connector DM21273.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - e) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 2) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the wiring between the smoke detector and the left ECSMC:
- (a) Remove the left ECSMC from the P85 panel. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (b) Disconnect connector DM21273 from the smoke detector, M21273 (WDM 21-27-53).
 - (c) Do a wiring check between these pins of connector XA14 at the left systems cardfile, P85, and connector DM21273 at the smoke detector, M21273 (WDM 21-27-53):

XA14

pin 14 pin 12

DM21273

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reinstall the ECSMC.
 - c) Reconnect connector DM21273.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - e) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 2) If you do not find a problem with the wiring, then continue.
- (6) Do a check of the internal wiring in the P110 panel IFE cooling smoke alarm monitor circuit (WDM 21-27-53).
- (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

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859. Equipment Cooling Divert Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16141.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the equipment cooling divert valve, V21003.
These are the tasks:
Equipment Cooling Divert Valve Removal, AMM TASK 21-27-25-000-801,
Equipment Cooling Divert Valve Installation, AMM TASK 21-27-25-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the right ECS miscellaneous card (ECSMC), A14.
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the ground wiring:
 - (a) Disconnect the electrical connector DV21003 from the valve V21003.
 - (b) Do a continuity check between these pins of connector DV21003 and structure ground (WDM 21-27-25):
 - 1) Pin 3 to structure ground
 - 2) Pin 5 to structure ground
 - 3) Pin 8 to structure ground.
 - (c) If there is not continuity to structure ground at each of the pins of connector DV21003 specified above, then do these steps:
 - 1) Repair the wiring.

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- 2) Reconnect connector DV21003.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If there is continuity at each of the pins of connector DV21003 specified above, then continue.
- (4) Do this check of the wiring between the valve and the right ECSMC:
- (a) Remove the right ECSMC from the P84 panel. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (b) Disconnect connector DV21003 from the valve, V21003 (WDM 21-27-25).
 - (c) Do a wiring check between these pins of connector XA14 at the right systems cardfile, P84, and connector DV21003 at the valve, V21003 (WDM 21-27-25):

XA14	DV21003
pin 87	pin 6
pin 79	pin 7

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reinstall the ECSMC, A14.
 - c) Reconnect connector DV21003.
 - d) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - e) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 2) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the wiring between the equipment cooling divert valve relay and the valve:
- (a) Remove the equipment cooling divert valve relay, K21016, from the P210 panel (WDM 21-27-25).
 - (b) Do a wiring check between these pins of connector DK21016 in the P210 panel and connector DV21003 at the valve, V21003 (WDM 21-27-25):

DK21016	DV21003
pin A1	pin 2
pin A3	pin 1

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reinstall the relay, K21016.
 - c) Reconnect connector DV21003.
 - d) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.

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- e) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

861. Equipment Cooling Inboard Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16131.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the equipment cooling inboard valve, V21002.
These are the tasks:
Equipment Cooling Inboard Valve Removal, AMM TASK 21-27-23-000-801,
Equipment Cooling Inboard Valve Installation, AMM TASK 21-27-23-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the right ECS miscellaneous card (ECSCMC), A14.
These are the tasks:
ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the ground wiring:
 - (a) Disconnect the electrical connector DV21002 from the valve V21002.
 - (b) Do a continuity check between these pins of connector DV21002 and structure ground (WDM 21-27-23):
 - 1) Pin 4 to structure ground
 - 2) Pin 6 to structure ground
 - 3) Pin 10 to structure ground.

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- (c) If there is not continuity to structure ground at each of the pins of connector DV21002 specified above, then do these steps:
 - 1) Repair the wiring.
 - 2) Reconnect connector DV21002.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If there is continuity at each of the pins of connector DV21002 specified above, then continue.
- (4) Do this check of the wiring between the valve and the right ECSMC:
 - (a) Remove the right ECSMC from the P84 panel. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (b) Disconnect connector DV21002 from the valve, V21002 (WDM 21-27-23).
 - (c) Do a wiring check between these pins of connector XA14 at the right systems cardfile, P84, and connector DV21002 at the valve, V21002 (WDM 21-27-23):

XA14	DV21002
pin 57	pin 9
pin 90	pin 7

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reinstall the ECSMC, A14.
 - c) Reconnect connector DV21002.
 - d) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - e) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 2) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the wiring between the equipment cooling inboard valve relay and the valve:
 - (a) Remove the equipment cooling inboard valve relay, K21015, from the P210 panel (WDM 21-27-23).
 - (b) Do a wiring check between these pins of connector DK21015 in the P210 panel and connector DV21002 at the valve, V21002 (WDM 21-27-23):

DK21015	DV21002
pin A1	pin 5
pin A3	pin 3

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reinstall the relay, K21015.
 - c) Reconnect connector DV21002.

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- d) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
- e) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

863. EQUIP COOLING or ECS CARD L (R) EICAS Messages Without a Correlated Maintenance Message - Fault Isolation

A. Initial Evaluation

- (1) This task is troubleshoot occurrences of the following nuisance messages:
 - (a) EICAS advisory message EQUIP COOLING with no correlated maintenance message.
 - (b) EICAS status message ECS CARD L (ECS CARD R) with correlated maintenance message 21-18891 (21-18892).
 - (c) EICAS status message ECS CARD L (ECS CARD R) with no correlated maintenance message.
- (2) If the MAT shows ACTIVE for a maintenance message, then do the applicable Fault Isolation Procedure before you continue.

B. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Inspect the equipment cooling air filter for blockage.
These are the tasks:
Equipment Cooling Air Filter Removal, AMM TASK 21-27-02-000-801,
Equipment Cooling Air Filter Installation, AMM TASK 21-27-02-400-801.
 - (a) Clean or remove any blockage found. To clean the air filter, do this task: Equipment Cooling Air Filter Cleaning, AMM TASK 21-27-02-100-801
 - (b) If the message does not show or is NOT ACTIVE, you corrected the fault.
 - (c) If the message shows or is still ACTIVE, then continue.
- (2) Inspect the orifice for blockage. (AIPC 21-27-08-01, Figure 1, It)
 - (a) Remove any blockage found.
 - (b) If the message does not show or is NOT ACTIVE, you corrected the fault.
 - (c) If the message shows or is still ACTIVE, then continue.
- (3) Do this check of the flight deck pressure transducer, M21587:
 - (a) Disconnect electrical connector, DM21587 from the flight deck pressure transducer, M21587.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message do the steps that follow:
 - 1) Replace the flight deck pressure transducer. To replace the pressure transducer,
These are the tasks:
Equipment Cooling Duct Pressure Sensors Removal, AMM
TASK 21-27-08-000-801,

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Equipment Cooling Duct Pressure Sensors Installation, AMM
TASK 21-27-08-400-801.

- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (c) If the MAT shows ACTIVE for the message, then continue
- (4) Do this check of the E4 pressure transducer, M21586:
 - (a) Disconnect electrical connector, DM21586 from the E4 pressure transducer, M21586.
 - (b) If the MAT shows NOT ACTIVE for the message do the steps that follow:
 - 1) Replace the E4 pressure transducer. To replace the pressure transducer, These are the tasks:
Equipment Cooling Duct Pressure Sensors Removal, AMM
TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM
TASK 21-27-08-400-801.
 - 2) If the MAT shows NOT ACTIVE for the message (or if the message does not show), you corrected the fault.
 - (c) If the MAT shows ACTIVE for the message, then continue
- (5) Do the steps that follow to remove power from the left ECS Miscellaneous card and the transducers:
 - (a) Put the A18 S4 power switch on the P85 left system cardfile to the OFF position
 - (b) Open and close this circuit breaker:
Left Power Management Panel, P110

Row	Col	Number	Name
J	28	C21668	E4/FLTDK PRESS XDCC
 - (c) Put the A18 S4 power switch on the P85 left system cardfile to the ON position
 - (d) If the MAT shows NOT ACTIVE for the message (or if the message does not show), you corrected the fault.
 - (e) If the MAT shows ACTIVE for the message, then continue.
- (6) Do this check of the wiring for the flight deck pressure transducer, M21587:
 - (a) Do a check of the wiring between these pins of connector DM21587 and connector DP8505 at the P85 systems cardfile:

DM21587		DP8505
pin 3	.....	pin 21
pin 4	.....	pin 22

- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the electrical connector DM21587 to the flight deck pressure transducer, M21587.
 - 3) Re-connect the electrical connector DP8505 to the left systems cardfile, P85.
 - 4) If the MAT shows NOT ACTIVE for the message (or if the message does not show), you corrected the fault.

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- (c) If you do not find a problem with the wiring, then do the steps that follow and continue:
- 1) Re-connect the electrical connector DM21587 to the flight deck pressure transducer, M21587.
 - 2) Re-connect the electrical connector DP8505 to the left systems cardfile, P85.
- (7) Do this check of the wiring for the E4 pressure transducer, M21586:
- (a) Do a check of the wiring between these pins of connector DM21586 and connector DP8505 at the P85 systems cardfile:
- | DM21586 | DP8505 |
|-----------------|---------------|
| pin 3 | pin 19 |
| pin 4 | pin 20 |
- (b) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect the electrical connector DM21586 to the E4 pressure transducer, M21586.
 - 3) Re-connect the electrical connector DP8505 to the left systems cardfile, P85.
 - 4) If the MAT shows NOT ACTIVE for the message (or if the message does not show), you corrected the fault.
- (c) If you do not find a problem with the wiring, then do the steps that follow and continue:
- 1) Re-connect the electrical connector DM21586 to the E4 pressure transducer, M21586.
 - 2) Re-connect the electrical connector DP8505 to the left systems cardfile, P85.
- (8) Do this check of the VSCF pressure transducer, M21585:
- (a) Disconnect electrical connector, DM21585 from the VSCF pressure transducer, M21585.
- (b) If the MAT shows NOT ACTIVE for the maintenance message do the steps that follow:
- 1) Replace the VSCF pressure transducer. To replace the pressure transducer, These are the tasks:
Equipment Cooling Duct Pressure Sensors Removal, AMM
TASK 21-27-08-000-801,
Equipment Cooling Duct Pressure Sensors Installation, AMM
TASK 21-27-08-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message, then continue.
- (9) Do this check of the E5 pressure transducer, M21584:
- (a) Disconnect electrical connector, DM21584 from the E5 pressure transducer, M21584.
- (b) If the MAT shows NOT ACTIVE for the message do the steps that follow:
- 1) Replace the E5 pressure transducer. To replace the pressure transducer, These are the tasks:
Equipment Cooling Duct Pressure Sensors Removal, AMM
TASK 21-27-08-000-801,

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Equipment Cooling Duct Pressure Sensors Installation, AMM
TASK 21-27-08-400-801.

- (c) If the MAT shows ACTIVE for the message, then continue.
- (10) Do the steps that follow to remove power from the right ECS Miscellaneous card and the transducers:
 - (a) Put the A18 S4 power switch on the P84 right system cardfile to the OFF position
 - (b) Open and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	6	C21664	E5/VSCF PRESS XDCR

- (c) Put the A18 S4 power switch on the P84 right system cardfile to the ON position
- (d) If the MAT shows NOT ACTIVE for the message (or if the message does not show), you corrected the fault.
- (e) If the MAT shows ACTIVE for the message, then continue.
- (11) Do this check of the wiring for the VSCF pressure transducer, M21585:
 - (a) Do a check of the wiring between these pins of connector DM21585 and connector DP8405 at the P84 systems cardfile:

DM21585		DP8405
pin 3	.....	pin 21
pin 4	.....	pin 22

- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the electrical connector DM21585 to the VSCF pressure transducer, M21585.
 - 3) Re-connect the electrical connector DP8405 to the right systems cardfile, P84.
 - 4) If the MAT shows NOT ACTIVE for the message (or if the message does not show), you corrected the fault.
- (c) If you do not find a problem with the wiring, then do the steps that follow and continue:
 - 1) Re-connect the electrical connector DM21585 to the VSCF pressure transducer, M21584.
 - 2) Re-connect the electrical connector DP8405 to the right systems cardfile, P84.
- (12) Do this check of the wiring for the E5 pressure transducer, M21584:
 - (a) Do a check of the wiring between these pins of connector DM21584 and connector DP8405 at the P84 systems cardfile:

DM21584		DP8405
pin 3		pin 19
pin 4		pin 20

- (b) If you find a problem with the wiring, then do these steps:

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- 1) Repair the wiring.
 - 2) Re-connect the electrical connector DM21584 to the E5 pressure transducer, M21584.
 - 3) Re-connect the electrical connector DP8405 to the right systems cardfile, P84.
 - 4) If the MAT shows NOT ACTIVE for the message (or if the message does not show), you corrected the fault.
- (c) If you do not find a problem with the wiring, then do the steps that follow and continue:
- 1) Re-connect the electrical connector DM21584 to the E5 pressure transducer, M21584.
 - 2) Re-connect the electrical connector DP8405 to the right systems cardfile, P84.
- (13) Do a check for voltage to the left equipment cooling controller, M21104:
- (a) Disconnect electrical connector, DM21104B from the left equipment cooling controller.
 - (b) Do a check for 28 VDC from pin 8 of electrical connector DM21104B.
 - (c) If there is less than 18 VDC from pin 8, do this step:
 - 1) Repair the wiring between pin 8 of connector DM21104B and this circuit breaker:
- Standby Power Management Panel, P310**
- | <u>Row</u> | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|------------|------------|---------------|-----------------|
| H | 8 | C21637 | L EQPT CLG CTRL |
- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If there is 18 VDC from pin 8, then re-connect connector DM21104B and continue.
- (14) Do a check for voltage to the right equipment cooling controller, M21207:
- (a) Disconnect electrical connector, DM21207A from the right equipment cooling controller.
 - (b) Do a check for 28 VDC from pin 20 of electrical connector DM21207A.
 - (c) If there is less than 18 VDC from pin 20, do this step:
 - 1) Repair the wiring between pin 20 of connector DM21207A and this circuit breaker:
- Right Power Management Panel, P210**
- | <u>Row</u> | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|------------|------------|---------------|-----------------|
| P | 9 | C21636 | R EQPT CLG CTRL |
- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If there is 18 VDC from pin 20, then re-connect connector DM21207A and continue.
- (15) Do a check of each LRU that connects to the DP8505 (DP8405) connector of left (right) systems cardfile P85 (P84) (SSM 21-00-11, 21-00-12):
- (a) Disconnect the electrical connector from the LRU.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message do the steps that follow:
 - 1) Replace the applicable LRU.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message, re-install the connector.

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- (d) Do a wiring check between these pins of connector for the LRU and connector DP8405 (DP8505) at the P84 (P85) systems cardfile:
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

864. Relay (EE COOLING FWD CGO HT VLV CNTL) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-15132.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do the steps that follow to make sure there is electrical power to the forward cargo heat valve relay, K21583:
 - (a) Remove the forward cargo heat valve relay, K21583 (WDM 21-27-11).
 - (b) Do a check for 28V DC between pin A2, B2, and X1 of connector DK21583 and the structure ground (WDM 21-27-11).
 - 1) If there is not 28V DC at pin A2, B2, and X1 of connector DK21583, then do the steps that follow:
 - a) Repair the wiring between circuit breaker C21613 and pin A2, B2, and X1 of connector DK21583 (WDM 21-27-11).
 - b) Re-install the forward cargo heat valve relay, K21583.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - e) If the maintenance message shows on the ground test display, then continue.
 - 2) If there is 28V DC at pin A2, B2, and X1 of connector DK21583, then continue.
- (2) Replace the forward cargo heat valve control relay, K21583, in the P110 panel (WDM 21-27-11).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the internal wiring in the P110 panel (WDM 21-27-11).
- (a) Remove the forward cargo heat valve control relay, K21583. (WDM 21-27-11)
- (b) Disconnect the electrical connectors DM24505A, and DM24505B from the SIU, M24505. do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002
- (c) Do a check of the wiring between the connectors that follow:
- | | |
|------------------|-----------------|
| DK21583 | DM24505B |
| pin X2 | pin 5 |
| DK21583 | DM24505A |
| pin B1 | pin 32 |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the forward cargo heat valve control relay, K21583. (WDM 21-27-11)
 - 3) Re-connect the electrical connectors DM24505A, and DM24505B to the SIU, M24505. do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

END OF TASK

865. Relay (EE COOLING VENT CNTL) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-15133.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.

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- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do the steps that follow to make sure there is electrical power to the equipment cooling ventilation valve relay, K21584:
 - (a) Remove the equipment cooling ventilation valve relay, K21584 (WDM 21-27-21).
 - (b) Do a check for 15V AC between pin A2 and B2 of connector DK21584 and the structure ground (WDM 21-27-21).
 - 1) If there is not 115V AC at pin A2 and B2 of connector DK21584, then do the steps that follow:
 - a) Replace the current monitor, M24617 in the P110 panel.
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - b) Re-install the relay, K21584.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - e) If the maintenance message shows on the ground test display, then continue.
 - 2) If there is 115V AC at pin A2 and B2 of connector DK21584, then continue.
- (2) Do the steps that follow to make sure there is electrical power to the equipment cooling ventilation valve relay, K21584:
 - (a) Do a check for 28V DC between pin X1 of connector DK21584 and the structure ground (WDM 21-27-21).
 - 1) If there is not 28V DC at pin X1 of connector DK21584, then do the steps that follow:
 - a) Repair the wiring between pin X1 of connector DK21584 and this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	C21624	EQPT CLG VENT VLV CTRL
 - b) Re-install the relay, K21584.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - e) If the maintenance message shows on the ground test display, then continue.
 - 2) If there is 28V DC at pin X1 of connector DK21584, then continue.
- (3) Replace the equipment cooling ventilation valve relay, K21584, in the P110 panel (WDM 21-27-21).

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- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring in the P110 panel (WDM 21-27-21).
 - (a) Remove the equipment cooling vent valve relay, K21584. (WDM 21-27-21)
 - (b) Remove the current monitor, M24617. do this task: Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002
 - (c) Disconnect the electrical connectors DM24504A, DM24504B, and DM24504C from the SIU, M24504. do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002
 - (d) Do a check of the wiring between the connectors that follow:

DK21584	DM24504B
pin X2	pin 4

DK21584	DM24505C
pin B1	pin 78

DK21584	DM24617
pin A2	pin B
pin B2	pin B

DM24617	DM24505A
pin 2	pin 69

DM24617	DM11005
pin 1	pin 5

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the relay, K21584. (WDM 21-27-21)
 - 3) Re-install the current monitor, M24617. do this task: Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002

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- 4) Re-connect the electrical connectors DM24504A, DM24504B and DM24504C to the SIU, M24504. do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
- 5) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- 6) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

866. Relay (L SATCOM BACKUP COOLING FAN) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16393.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do the steps that follow to make sure there is electrical power to the left SATCOM backup cooling fan relay, K21265:
 - (a) Remove the left SATCOM backup cooling fan relay, K21265 (WDM 21-27-33).
 - (b) Do a check for 115V AC between pin A2 of connector DK21265 and the structure ground (WDM 21-27-33).
 - 1) If there is not 115V AC at pin A2 of connector DK21265, then do the steps that follow:
 - a) Repair the wiring between pin A2 of connector DK21265 and this circuit breaker:
- Left Power Management Panel, P110**
- | <u>Row</u> | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|------------|------------|---------------|-------------------------|
| E | 15 | C21453 | L SATCOM BACKUP CLG FAN |
- b) Re-install the relay, K21265.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - e) If the maintenance message shows on the ground test display, then continue.
 - 2) If there is 115V AC at pin A2 of connector DK21265, then continue.
 - (2) Do the steps that follow to make sure there is electrical power to the left SATCOM backup cooling fan relay, K21265:

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- (a) Do a check for 28V DC between pin X1 of connector DK21265 and the structure ground (WDM 21-27-33).
- 1) If there is not 28V DC at pin X1 of connector DK21265, then do the steps that follow:
- a) Repair the wiring between pin X1 of connector DK21265 and this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	18	C21691	L SATCOM BACKUP CLG FAN CTRL

- b) Re-install the relay, K21265.
- c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- d) If the maintenance message does not show on the ground test display, you corrected the fault.
- e) If the maintenance message shows on the ground test display, then continue.
- 2) If there is 28V DC at pin X1 of connector DK21265, then continue.
- (3) Replace the left SATCOM backup cooling fan relay, K21265, in the P110 panel (WDM 21-27-33).
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring in the P110 panel (WDM 21-27-33).
- (a) Remove the left SATCOM backup cooling fan relay, K21265. (WDM 21-27-33)
- (b) Remove the current monitor, M24604. do this task: Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002
- (c) Disconnect the electrical connectors DM24504A, DM24504B, and DM24504C from the SIU, M24504. do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002
- (d) Do a check of the wiring between the connectors that follow:

DK21265	DM24504B
pin X2	pin 15

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- (a) If the maintenance message shows on the Ground Test Display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the Ground Test Display, then there was an intermittent fault.

F. Fault Isolation Procedure

- (1) Do this check for electrical power to the ELCU, M21101:
 - (a) Remove the ELCU, M21101. This is the task: ELCU Removal, AMM TASK 24-51-05-000-801.
 - (b) Apply Aircraft Electrical Power. This is the task: Supply Electrical Power, AMM TASK 24-22-00-860-805.
 - (c) Do a check for 28 VDC at pin 1 of connector DM21101 at the P100 panel (WDM 21-27-41).
 - 1) If you do not find 28 VDC at pin 1 of connector DM21101, then do these steps:
 - a) Repair the wiring between pin 1 of connector DM21101 and this circuit breaker:
(WDM 21-27-41)
Left Power Management Panel, P110

Row	Col	Number	Name
G	28	C21601	EQPT CLG VENT FAN CTRL
 - b) Re-install the ELCU, M21101. This is the task: ELCU Installation, AMM TASK 24-51-05-400-801.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If you find 28 VDC at pin 1 of connector DM21101, then replace the ELCU, M21101. These are the tasks:
 - ELCU Removal, AMM TASK 24-51-05-000-801
 - ELCU Installation, AMM TASK 24-51-05-400-801
 - a) Do the Repair Confirmation at the end of this task.
- (2) Remove the ELCU, M21101. This is the task: ELCU Removal, AMM TASK 24-51-05-000-801.
- (3) Remove the PPC, M24500. This is the task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.
- (4) Do a wiring check between the ELCU, M21101, and the PPC, M24500 as follows(WDM 21-27-41):

ELCU	PPC
DM21101	DM24500
pin 2	pin A81
pin 5	pin A53
pin 6	pin A67
pin 7	pin A80
pin 8	pin A94
pin 9	pin A95
pin 10	pin A96
pin 13	pin A82

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- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ELCU, M21101. This is the task: ELCU Installation, AMM TASK 24-51-05-400-801.
 - 3) Re-install the PPC, M24500. This is the task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
 - 4) Do the Repair Confirmation at the end of this task.
- (5) Replace the PPC, M24500. These are the tasks:
 - Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002
 - Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this Ground Test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message does not show on the Ground Test Display, you corrected the problem.
 - (b) If the maintenance message still shows on the Ground Test Display, then continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

868. Equipment Cooling Ventilation Fan Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-15012.

B. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	28	C21601	EQPT CLG VENT FAN CTRL

C. Related Data

- (1) WDM 21-27-41

D. Initial Evaluation

- (1) If the Maintenance Access Terminal (MAT) shows ACTIVE for Maintenance Message 21-15130, do the Fault Isolation task for that Maintenance Message before you continue.
- (2) Open then close this Circuit Breaker to make sure the Electrical Load Control Unit (ELCU), M21101, for the Equipment Cooling Ventilation Fan, B21583, is not latched:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	28	C21601	EQPT CLG VENT FAN CTRL

- (3) If the MAT shows LATCHED for the Maintenance Message, do the Repair Confirmation at the end of this task.

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- (a) If the Maintenance Message shows on the Ground Test Display, then do the Fault Isolation Procedure below.
- (b) If the Maintenance Message does not show on the Ground Test Display, then there was an intermittent fault.

E. Fault Isolation Procedure

- (1) Do this check of the Ground Wiring at Connector, DB21583 for the Fan, B21583:
 - (a) Disconnect Connector, DB21583 from the Fan, B21583 (WDM 21-27-41).
 - (b) Do a continuity check at Connector, DB21583 between pin 5 and Structure Ground.

DB21583	STRUCTURE
pin 5	GROUND

- 1) If there is not continuity between pin 5 of Connector, DB21583, and Structure Ground, then do these steps:
 - a) Repair the Wiring (SWPM Ch 20).
 - b) Re-connect Connector, DB21583.
 - c) Do the Repair Confirmation at the end of this task.
 - d) If the Maintenance Message does not show on the Ground Test Display, you corrected the problem.
 - 2) If there is continuity between pin 5 of Connector, DB21583, and Structure Ground, then continue.
- (2) Do this check of the Wiring between the Fan, B21583 and the ELCU, M21101:
 - (a) Disconnect Connector, DB21583 from the Fan, B21583 and put a shunt between pins 5 and 6 (WDM 21-27-41).
 - (b) Do a check for 115VAC between the Structure Ground and these pins:

DB21583	STRUCTURE
pin 1	GROUND
pin 2	GROUND
pin 3	GROUND

- (c) If there is 115VAC from pins 1, 2 and 3 do the steps that follow:
 - 1) Replace the Equipment Cooling Ventilation Fan, B21583. These are the tasks:
 - Equipment Cooling Vent Fan Removal, AMM TASK 21-27-20-000-801
 - Equipment Cooling Vent Fan Installation, AMM TASK 21-27-20-400-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - 3) If the Maintenance Message does not show on the Ground Test Display, you corrected the problem.
 - (d) If there is not 115VAC from pins 1, 2 and 3 do the steps that follow:
 - 1) Remove the Equipment Cooling Ventilation Fan ELCU, M21101, in the L Power Panel, P100. This is the task: ELCU Removal, AMM TASK 24-51-05-000-801.
 - 2) Do a Wiring check at the L Power Panel, P100, Connector, DM21101 and at the Fan, B21583, Connector, DB21583, between these pins (WDM 21-27-41):

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DM21101

pin A2
pin B2
pin C2

DB21583

pin 1
pin 2
pin 3

- 3) If you find a problem with the Wiring, then do these steps:
 - a) Repair the Wiring (SWPM Ch 20).
 - b) Re-install the ELCU, M21101. This is the task: ELCU Installation, AMM TASK 24-51-05-400-801.
 - c) Re-install Connector, DB21583.
 - d) Do the Repair Confirmation at the end of this task.
 - e) If the Maintenance Message does not show on the Ground Test Display, you corrected the problem.
 - 4) If you do not find a problem with the Wiring, then do the steps that follow:
 - a) Re-install Connector, DB21583.
 - b) Replace the Equipment Cooling Ventilation Fan ELCU, M21101, in the L Power Panel, P100. These are the tasks:
 - ELCU Removal, AMM TASK 24-51-05-000-801
 - ELCU Installation, AMM TASK 24-51-05-400-801.
 - c) Do the Repair Confirmation at the end of this task.
 - d) If the Maintenance Message does not show on the Ground Test Display, you corrected the problem.
 - e) If the Maintenance Message shows on the Ground Test Display, then continue.
- (3) Do this check of the Wiring between the L Environmental Control System Miscellaneous Card (ECSCMC), A14 and the Fan, B21583:
- (a) Remove the L ECSCMC, A14. This is the task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
 - (b) Do a continuity check at the L Systems Cardfile, P85, Connector, DP8505, between pin 38 and Structure Ground (WDM 21-27-41):
 - (c) If there is not continuity between pin 38 of Connector, DP8505 and Structure Ground, then do these steps:
 - 1) Repair the Wiring at L Systems Cardfile, P85, Connector, DP8505 and at the Fan, B21583, Connector, DB21583 between these pins (SWPM Ch 20):

DP8505

pin 38

DB21583

pin 6

- 2) Re-install the L ECSCMC, A14. This is the task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do the Repair Confirmation at the end of this task.
 - 4) If the Maintenance Message does not show on the Ground Test Display, you corrected the problem.
- (d) If there is continuity between pin 38 of Connector, DP8505 and Structure Ground, then continue.

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- (4) Replace the L ECSMC, A14, in the L Systems Cardfile, P85. These are the tasks:
 - ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (a) Do the Repair Confirmation at the end of this task.
- (b) If the Maintenance Message does not show on the Ground Test Display, you corrected the problem.
- (c) If the Maintenance Message shows on the Ground Test Display, then continue.
- (5) Do a check of the internal Wiring in the L Power Panel, P100 (WDM 21-27-41).
 - (a) If you find a problem with the Wiring, then do these steps:
 - 1) Repair the Wiring (SWPM Ch 20).
 - 2) Do the Repair Confirmation at the end of this task.
 - 3) If the Maintenance Message does not show on the Ground Test Display, you corrected the problem.

F. Repair Confirmation

- (1) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Equipment Cooling System.
- (2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
- (3) If the problem still exists, continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

869. SATCOM Backup Cooling Fan (Left) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16013.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the SATCOM backup cooling fan, B21265.

These are the tasks:

SATCOM Backup Cooling Fan Removal - Electronic Equipment Rack, E11, AMM TASK 21-27-30-000-801 or SATCOM Backup Cooling Fan Removal - Electronic Equipment Rack, E13, AMM TASK 21-27-30-000-802,

SATCOM Backup Cooling Fan Installation - Electronic Equipment Rack, E11, AMM TASK 21-27-30-400-801 or SATCOM Backup Cooling Fan Installation - Electronic Equipment Rack, E13, AMM TASK 21-27-30-400-802.

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- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the ground wiring at the connector for the fan:
 - (a) Disconnect connector DB21265 from the fan, B21265.
 - (b) Do a continuity check between pin 3 of connector DB21265, and structure ground (WDM 21-27-33).
 - 1) If there is not continuity between pins 3 of connector DB21265, and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21265.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pin 3 of connector DB21265, and structure ground, then continue.
- (3) Do this check of the wiring between the relay and the fan:
 - (a) Remove the SATCOM backup cooling fan relay, K21265, in the Left Power Management Panel, P110 (WDM 21-27-33).
 - (b) Do a wiring check between these pins of connector DK21265 on the P110 panel and connector DB21265 at the fan, B21265:

DK21265	DB21265
pin A1	pin 1

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the relay K21265.
 - c) Re-install connector DB21265.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If you do not find a problem with the wiring, then continue.
- (4) Do a check of the Signal Interface Unit (1), M24504 in the P110 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the Current Monitor, M24604.
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

870. ELCU (EQPT CLG SUPPLY FAN L) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14073.

B. Description

- (1) ELCU contactor for the Equipment Cooling Supply Fan (Left) is not in the commanded position.

C. Possible Causes

- (1) ELCU, M21102
- (2) Power Panel Controller (PPC), M24500
- (3) Left Equipment Cooling Controller (ECC), M21104
- (4) Wiring

D. Related Data

- (1) WDM 21-27-31
- (2) WDM 24-51-13
- (3) SSM 21-27-31

E. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this Ground Test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the Ground Test Display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the Ground Test Display, then there was an intermittent fault.

F. Fault Isolation Procedure

- (1) Do this check for electrical power to the ELCU, M21102:
 - (a) Remove the ELCU, M21102. This is the task: ELCU Removal, AMM TASK 24-51-05-000-801.
 - (b) Apply Aircraft Electrical Power. This is the task: Supply Electrical Power, AMM TASK 24-22-00-860-805.

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- (c) Do a check for 28 VDC at pin 1 of connector DM21102 at the P100 panel (WDM 21-27-31).
- 1) If you do not find 28 VDC at pin 1 of connector DM21102, then do these steps:
 - a) Repair the wiring between pin 1 of connector DM21102 and this circuit breaker:
(WDM 21-27-31)
Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21605	EQPT CLG SPLY FAN 1 CTRL
 - b) Re-install the ELCU, M21102. This is the task: ELCU Installation, AMM TASK 24-51-05-400-801.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If you find 28 VDC at pin 1 of connector DM21102, then replace the ELCU, M21102. These are the tasks:
 - ELCU Removal, AMM TASK 24-51-05-000-801
 - ELCU Installation, AMM TASK 24-51-05-400-801
 - a) Do the Repair Confirmation at the end of this task.

- (2) Do this check for electrical power to the PPC, M24500:
- (a) Remove the PPC, M24500. This is the task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.
 - (b) Apply Aircraft Electrical Power. This is the task: Supply Electrical Power, AMM TASK 24-22-00-860-805.
 - (c) Do a check for 28 VDC at pin A83 of connector DM24500 (SSM 21-27-31).
 - (d) Do a check for 28 VDC at pin B53 of connector DM24500 (SSM 21-27-31).

- 1) If you do not find 28 VDC at pins A83 and B53, then do these steps:
 - a) Repair the wiring between pin A83 of connector DM24500 and this circuit breaker:
(WDM 21-27-31)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21605	EQPT CLG SPLY FAN 1 CTRL

- b) Repair the wiring between pin B53 of connector DM24500 and this circuit breaker:
(WDM 24-09-31, 21-27-31)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	7	C24690	P100 PPC POWER

- c) Re-install the PPC, M24500. This is the task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- d) Do the Repair Confirmation at the end of this task.

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- 2) If there is 28 VDC at pins A83 and B53, then replace the PPC, M24500. These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
 - Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- a) Do the Repair Confirmation at the end of this task.
- (3) Do wiring checks between the Left ECC and the PPC, and between the PPC and the ELCU as follows:
- (a) Remove the ELCU, M21102. This is the task: ELCU Removal, AMM TASK 24-51-05-000-801.
- (b) Remove the PPC, M24500. This is the task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.
- (c) Disconnect connector DM21104A from the Left ECC, M21104.
- (d) Do a wiring check between the Left ECC, M21104, and the PPC, M24500 (WDM 21-27-31):

Left ECC	PPC
DM21104A	DM24500
pin 21	pin 74

- (e) Do a wiring check between the PPC, M24500, and the ELCU, M21102 (WDM 21-27-31):

ELCU	PPC
DM21102	DM24500
pin 2	pin 85
pin 5	pin 97
pin 6	pin 98
pin 7	pin 100
pin 8	pin 101
pin 9	pin 102
pin 10	pin 103
pin 13	pin 71

- (f) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21104A to the Left ECC, M21104.
 - 3) Re-install the ELCU, M21102. This is the task: ELCU Installation, AMM TASK 24-51-05-400-801.
 - 4) Re-install the PPC, M24500. This is the task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
 - 5) Do the Repair Confirmation at the end of this task.
- (g) If you do not find a problem with the wiring, then replace the Left ECC, M21104. These are the tasks:
- Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801.
 - Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
- 1) Re-install the ELCU, M21102. This is the task: ELCU Installation, AMM TASK 24-51-05-400-801.

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- 2) Re-install the PPC, M24500. This is the task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- 3) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this Ground Test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message does not show on the Ground Test Display, you corrected the problem.
 - (b) If the maintenance message still shows on the Ground Test Display, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

871. ELCU (EQPT CLG SUPPLY FAN R) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14074.

B. Description

- (1) ELCU contactor for the Equipment Cooling Supply Fan (Right) is not in the commanded position.

C. Possible Causes

- (1) ELCU, M21202
- (2) Power Panel Controller (PPC), M24501
- (3) Right Equipment Cooling Controller (ECC), M21207
- (4) Wiring

D. Related Data

- (1) WDM 21-27-32
- (2) WDM 24-51-23
- (3) SSM 21-27-32

E. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this Ground Test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the Ground Test Display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the Ground Test Display, then there was an intermittent fault.

F. Fault Isolation Procedure

- (1) Do this check for electrical power to the ELCU, M21202:
 - (a) Remove the ELCU, M21202. This is the task: ELCU Removal, AMM TASK 24-51-05-000-801.
 - (b) Apply Aircraft Electrical Power. This is the task: Supply Electrical Power, AMM TASK 24-22-00-860-805.

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- (c) Do a check for 28 VDC at pin 1 of connector DM21202 at the P200 panel (WDM 21-27-32).

- 1) If you do not find 28 VDC at pin 1 of connector DM21202, then do these steps:
- a) Repair the wiring between pin 1 of connector DM21202 and this circuit breaker:

(WDM 21-27-31)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21600	EQPT CLG SPLY FAN 2 CTRL

- b) Re-install the ELCU, M21202. This is the task: ELCU Installation, AMM TASK 24-51-05-400-801.

- c) Do the Repair Confirmation at the end of this task.

- 2) If you find 28 VDC at pin 1 of connector DM21202, then replace the ELCU, M21202. These are the tasks:

- ELCU Removal, AMM TASK 24-51-05-000-801
- ELCU Installation, AMM TASK 24-51-05-400-801

- a) Do the Repair Confirmation at the end of this task.

- (2) Do this check for electrical power to the PPC, M24501:

- (a) Remove the PPC, M24501. This is the task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.

- (b) Apply Aircraft Electrical Power. This is the task: Supply Electrical Power, AMM TASK 24-22-00-860-805.

- (c) Do a check for 28 VDC at pin A83 of connector DM24501 (SSM 21-27-32).

- (d) Do a check for 28 VDC at pin B53 of connector DM24501 (SSM 21-27-32).

- 1) If you do not find 28 VDC at pins A83 and B53, then do these steps:

- a) Repair the wiring between pin A83 of connector DM24501 and this circuit breaker:

(WDM 21-27-31)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21600	EQPT CLG SPLY FAN 2 CTRL

- b) Repair the wiring between pin B53 of connector DM24501 and this circuit breaker:

(WDM 24-09-31, 21-27-31)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	20	C24691	P200 PPC POWER

- c) Re-install the PPC, M24501. This is the task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.

- d) Do the Repair Confirmation at the end of this task.

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- 2) If there is 28 VDC at pins A83 and B53, then replace the PPC, M24501. These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
 - Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- a) Do the Repair Confirmation at the end of this task.
- (3) Do wiring checks between the Right ECC and the PPC, and between the PPC and the ELCU as follows:
- (a) Remove the ELCU, M21202. This is the task: ELCU Removal, AMM TASK 24-51-05-000-801.
- (b) Remove the PPC, M24501. This is the task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.
- (c) Disconnect connector DM21207A from the Right ECC, M21207.
- (d) Do a wiring check between the Right ECC, M21207, and the PPC, M24501 (WDM 21-27-32):

Right ECC	PPC
DM21207A	DM24501
pin 22	pin 74

- (e) Do a wiring check between the PPC, M24501, and the ELCU, M21202 (WDM 21-27-32):

ELCU	PPC
DM21202	DM24501
pin 2	pin 85
pin 5	pin 97
pin 6	pin 98
pin 7	pin 99
pin 8	pin 101
pin 9	pin 102
pin 10	pin 103
pin 13	pin 71

- (f) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21207A to the Right ECC, M21207.
 - 3) Re-install the ELCU, M21202. This is the task: ELCU Installation, AMM TASK 24-51-05-400-801.
 - 4) Re-install the PPC, M24501. This is the task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
 - 5) Do the Repair Confirmation at the end of this task.
- (g) If you do not find a problem with the wiring, then replace the Right ECC, M21207. These are the tasks:
- Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801.
 - Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
- 1) Re-install the ELCU, M21202. This is the task: ELCU Installation, AMM TASK 24-51-05-400-801.

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- 2) Re-install the PPC, M24501. This is the task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- 3) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this Ground Test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message does not show on the Ground Test Display, you corrected the problem.
 - (b) If the maintenance message still shows on the Ground Test Display, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

872. Relay (IFE CLG OVB S/O VLV) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16395.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) You can do the steps that follow to make sure that the maintenance message is not a nuisance indication:
 - (a) Make sure the latest version of the ECSMC Operational Program Software, P/N 210E-BCE-01A-09, Software Diskette 285W0522-6, is installed in the ECSMC.
 - (b) Make sure the correct ECSMC Operational Program Configuration is installed.
 - 1) If the above steps do not clear the message, then do the following steps:

NOTE: If power is applied to the CCU with an earlier software version installed, then the maintenance message can become latched in the CCU nonvolatile memory. The CCU nonvolatile memory will be cleared when it is installed in the opposite position.

 - a) Remove power from the aircraft.
 - b) Interchange the ELMS P110 panel CCU with the ELMS P210 panel CCU.
 - c) Apply electrical power to the aircraft.
 - d) To make sure that the message is erased, do the IFE Cooling system test from the Maintenance Access Terminal (MAT).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
- (2) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel.

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This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P110 panel IFE cooling overboard valve control relay circuit (WDM 21-27-27).
 - (a) Remove the relay, K21273. (WDM 21-27-27)
 - (b) Disconnect the electrical connectors DM24505B and DM24505C from the SIU, M24505. do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002
 - (c) Do a check of the wiring between the connectors that follow:

DK21273	DM24505B
pin X2	pin 23

DK21273	DM24505C
pin B3	pin 22

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the relay, K21273. (WDM 21-27-27)
 - 3) Re-install the electrical connectors DM24505B and DM24505C to the SIU, M24505. do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

873. Relay (IFE CLG MIX MNFLD S/O VLV) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16396.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) You can do the steps that follow to make sure that the maintenance message is not a nuisance indication:

- (a) Make sure the latest version of the ECSMC Operational Program Software, P/N 210E-BCE-01A-09, Software Diskette 285W0522-6, is installed in the ECSMC.
- (b) Make sure the correct ECSMC Operational Program Configuration is installed.

- 1) If the above steps do not clear the message, then do the following steps:

NOTE: If power is applied to the CCU with an earlier software version installed, then the maintenance message can become latched in the CCU nonvolatile memory. The CCU nonvolatile memory will be cleared when it is installed in the opposite position.

- a) Remove power from the aircraft.
 - b) Interchange the ELMS P110 panel CCU with the ELMS P210 panel CCU.
 - c) Apply electrical power to the aircraft.
 - d) To make sure that the message is erased, do the IFE Cooling system test from the Maintenance Access Terminal (MAT).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.

- (2) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P210 panel IFE cooling mix manifold shutoff valve control relay circuit (WDM 21-27-29).
 - (a) Remove the relay, K21275. (WDM 21-27-29)
 - (b) Disconnect the electrical connectors DM24509B and DM24509C from the SIU, M24509. do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002
 - (c) Do a check of the wiring between the connectors that follow:

DK21275	DM24509B
pin X2	pin 18

DK21275	DM24509C
pin B3	pin 18

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the relay, K21275. (WDM 21-27-29)

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- 3) Re-install the electrical connectors DM24509B and DM24509C to the SIU, M24509.
do this task: Power Panel Controller - Installation, AMM
TASK 24-09-00-400-812-002
- 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE
Equipment Cooling.
- 5) If the maintenance message does not show on the ground test display, you
corrected the fault.

————— END OF TASK —————

874. Relay (IFE CLG FAN) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16394.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do the steps that follow to make sure there is electrical power to the IFE cooling fan relay, K21271:
 - (a) Remove the IFE cooling fan relay, K21271 (WDM 21-27-35).
 - (b) Do a check for 115V AC between pins A2, B2 and C2 of connector DK21271 and the structure ground (WDM 21-27-35).
 - 1) If there is not 115V AC at pins A2, B2 and C2 of connector DK21271, then do the steps that follow:
 - a) Repair the wiring between the pins of connector DK21271 and the circuit breaker:
- Left Power Management Panel, P110**
- | <u>Row</u> | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|------------|------------|---------------|-------------|
| Z | 2 | C21339 | IFE CLG FAN |
- b) Re-install the relay, K21271.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - e) If the maintenance message shows on the ground test display, then continue.
 - 2) If there is 115V AC at pins A2, B2 and C2 of connector DK21271, then continue.
 - (2) Do the steps that follow to make sure there is electrical power to the IFE cooling fan relay, K21271:

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- (a) Do a check for 28V DC between pin X1 of connector DK21271 and the structure ground (WDM 21-27-35).
- 1) If there is not 28V DC at pin X1 of connector DK21271, then do the steps that follow:
- a) Repair the wiring between pin X1 of connector DK21271 and the circuit breaker:
- Left Power Management Panel, P110**
- | <u>Row</u> | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|------------|------------|---------------|------------------|
| G | 19 | C21656 | IFE CLG FAN CTRL |
- b) Re-install the relay, K21271.
- c) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
- d) If the maintenance message does not show on the ground test display, you corrected the fault.
- e) If the maintenance message shows on the ground test display, then continue.
- 2) If there is 28V DC at pin X1 of connector DK21271, then continue.
- (3) Replace the IFE cooling fan control relay, K21271, in the P110 panel (WDM 21-27-35).
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring in the P110 panel IFE cooling fan control relay circuit (WDM 21-27-35).
- (a) Remove the IFE cooling fan relay, K21271. (WDM 21-27-35)
- (b) Remove the current monitor, M24405. do this task: Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002
- (c) Disconnect the electrical connectors DM24505A, DM24505B, and DM24505C from the SIU, M24505. do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002
- (d) Do a check of the wiring between the connectors that follow:

DK21271

DM24505B

pin X2 pin 22

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- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P210 panel equipment cooling divert valve control relay circuit (WDM 21-27-25).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Forward Cargo Air Conditioning.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

876. Relay (EQUIP INBOARD VALVE) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16172.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the equipment cooling inboard valve control relay, K21015, in the P210 panel (WDM 21-27-23).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
This is the task:

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Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P210 panel equipment cooling inboard valve control relay circuit (WDM 21-27-23).
- (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

877. Power Panel Controller (EQPT CLG VENT FAN) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-15135.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 24 ELMS P110 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P110 EU Self-Test.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the power panel controller, M24500 in the P100 panel, do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.
- (2) Do this check of the wiring for the power panel controller, M24500:
 - (a) Do a check for 28 VDC between pin A54 of connector DM24500 and the structure ground (SSM 21-27-41).
 - (b) Do a check for 28 VDC between pin B53 of connector DM24500 and the structure ground (SSM 21-27-41).
 - 1) If there is not 28 VDC between pins A54 and B53, and the structure ground, then do these steps:
 - a) Repair the wiring between pin A54 of connector DM24500 and this circuit breaker:
(WDM 21-27-41)

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Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	28	C21601	EQPT CLG VENT FAN CTRL

- b) Repair the wiring between pin B53 of connector DM24500 and this circuit breaker:

(WDM 24-09-31, 21-27-41)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	7	C24690	P100 PPC POWER

- c) Re-install the power panel controller, M24500. To install the power panel controller, do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
- d) Do this ground test on the MAT: 24 ELMS P110 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P110 EU Self-Test.
- e) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If there is 28 VDC at pins A54 and B53 of connector DM24500, then continue.
- (3) Replace the power panel controller, M24500 in the P100 panel
- These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- (a) Do this ground test on the MAT: 24 ELMS P110 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P110 EU Self-Test.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the electrical load control unit (ELCU) for the equipment cooling vent fan, M21101, in the P100 panel
- These are the tasks:
- ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
- (a) Do this ground test on the MAT: 24 ELMS P110 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P110 EU Self-Test.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring for the power panel controller circuit in the P100 panel (WDM 21-27-41).
- (a) Remove the ELCU, M21101. do this task: ELCU Removal, AMM TASK 24-51-05-000-801
- (b) Remove the PPC, M24500. do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002

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DM21101	DM24500
pin 2	pin A81
pin 5	pin A53
pin 6	pin A67
pin 7	pin A80
pin 8	pin A94
pin 9	pin A95
pin 10	pin A96
pin 13	pin A82

- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the ELCU, M21101. do this task: ELCU Installation, AMM TASK 24-51-05-400-801
 - 3) Re-install the PPC, M24500. do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
 - 4) Do this ground test on the MAT: 24 ELMS P110 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P110 EU Self-Test.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

878. Power Panel Controller (EQPT CLG SUPPLY FAN L) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-15136.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 24 ELMS P110 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P110 EU Self-Test.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the power panel controller, M24500 in the P100 panel, do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.
- (2) Do this check of the wiring for the power panel controller, M24500:
 - (a) Do a check for 28 VDC between pin A83 of connector DM24500 and the structure ground (WDM 21-27-31).
 - (b) Do a check for 28 VDC between pin B53 of connector DM24500 and the structure ground (WDM 21-27-31).

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- 1) If there is not 28 VDC between pins A83 and B53, and the structure ground, then do these steps:

- a) Repair the wiring between pin A83 of connector DM24500 and this circuit breaker:

(WDM 21-27-31)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21605	EQPT CLG SPLY FAN 1 CTRL

- b) Repair the wiring between pin B53 of connector DM24500 and this circuit breaker:

(WDM 24-09-31, 21-27-31)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	7	C24690	P100 PPC POWER

- c) Re-install the power panel controller, M24500. To install the power panel controller, do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
- d) Do this ground test on the MAT: 24 ELMS P110 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P110 EU Self-Test.
- e) If the maintenance message does not show on the ground test display, you corrected the fault.

- 2) If there is 28 VDC at pins A83 and B53 of connector DM24500, then continue.

- (3) Replace the power panel controller, M24500 in the P100 panel

These are the tasks:

Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,

Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.

- (a) Do this ground test on the MAT: 24 ELMS P110 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P110 EU Self-Test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

- (c) If the maintenance message shows on the ground test display, then continue.

- (4) Replace the electrical load control unit (ELCU) for the left equipment cooling supply fan, M21102, in the P100 panel

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,

ELCU Installation, AMM TASK 24-51-05-400-801.

- (a) Do this ground test on the MAT: 24 ELMS P110 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P110 EU Self-Test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

- (c) If the maintenance message shows on the ground test display, then continue.

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- (5) Do a check of the internal wiring for the power panel controller circuit in the P100 panel (WDM 21-27-31).
- (a) Remove the ELCU, M21102. do this task: ELCU Removal, AMM TASK 24-51-05-000-801
- (b) Remove the PPC, M24500. do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002

DM21102	DM24500
pin 2	pin A85
pin 5	pin A97
pin 6	pin A98
pin 7	pin A100
pin 8	pin B101
pin 9	pin B102
pin 10	pin B103
pin 13	pin A71

- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the ELCU, M21102. do this task: ELCU Installation, AMM TASK 24-51-05-400-801
 - 3) Re-install the PPC, M24500. do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
 - 4) Do this ground test on the MAT: 24 ELMS P110 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P110 EU Self-Test.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

879. Power Panel Controller (EQPT CLG SUPPLY FAN R) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-15137.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 24 ELMS P210 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P210 EU Self-Test.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the power panel controller, M24501 in the P200 panel, do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.
- (2) Do this check of the wiring for the power panel controller, M24501:

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- (a) Do a check for 28 VDC between pin A83 of connector DM24501 and the structure ground (WDM 21-27-32).
- (b) Do a check for 28 VDC between pin B53 of connector DM24501 and the structure ground (WDM 21-27-32).
 - 1) If there is not 28 VDC between pins A83 and B53, and the structure ground, then do these steps:

- a) Repair the wiring between pin A83 of connector DM24501 and this circuit breaker:
(WDM 21-27-32)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21600	EQPT CLG SPLY FAN 2 CTRL

- b) Repair the wiring between pin B53 of connector DM24501 and this circuit breaker:
(WDM 24-09-31, 21-27-32)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	20	C24691	P200 PPC POWER

- c) Re-install the power panel controller, M24501. To install the power panel controller, do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
 - d) Do this ground test on the MAT: 24 ELMS P210 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P210 EU Self-Test.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is 28 VDC at pins A83 and B53 of connector DM24501, then continue.
- (3) Replace the power panel controller, M24501 in the P200 panel
These are the tasks:
Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
 - (a) Do this ground test on the MAT: 24 ELMS P210 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P210 EU Self-Test.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the electrical load control unit (ELCU) for the right equipment cooling supply fan, M21202, in the P200 panel
These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
 - (a) Do this ground test on the MAT: 24 ELMS P210 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P210 EU Self-Test.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do a check of the internal wiring for the power panel controller circuit in the P200 panel (WDM 21-27-32).
 - (a) Remove the ELCU, M21202. do this task: ELCU Removal, AMM TASK 24-51-05-000-801
 - (b) Remove the PPC, M24501. do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002

DM21202	DM24501
pin 2	pin A85
pin 5	pin A97
pin 6	pin A98
pin 7	pin A99
pin 8	pin B101
pin 9	pin B102
pin 10	pin B103
pin 13	pin A71

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ELCU, M21202. do this task: ELCU Installation, AMM TASK 24-51-05-400-801
 - 3) Re-install the PPC, M24501. do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
 - 4) Do this ground test on the MAT: 24 ELMS P210 Power Management Panel, SPECIAL FUNCTION, 24 ELMS P210 EU Self-Test.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

880. Equipment Cooling Supply Fan (Left) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14023.

B. Initial Evaluation

- (1) Open then close this circuit breaker to make sure the electronic load control unit (ELCU), M21102, for the equipment cooling supply fan, B21581, is not latched:

Left Power Management Panel, P110

Row	Col	Number	Name
G	27	C21605	EQPT CLG SPLY FAN 1 CTRL

- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.

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- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for electrical power to the equipment cooling supply fan, B21581.
- (a) Disconnect electrical connector DB21581 from the equipment cooling supply fan B21581.
- (b) Do a check for 3-phase 115/208 VAC between these pins of connector DB21581 (WDM 21-27-31):

DB21581		DB21581	
pin 1	.....	pin 2	
pin 1	.....	pin 3	
pin 2	.....	pin 3	

- (c) If there is 3-phase 115/208 VAC between the pins of connector DB21581, then do the steps that follow:

- 1) Replace the equipment cooling supply fan, B21581.

These are the tasks:

Equipment Cooling Supply Fan Removal, AMM TASK 21-27-03-000-801,
Equipment Cooling Supply Fan Installation, AMM TASK 21-27-03-400-801.

- 2) Determine if the failure of the equipment cooling supply fan, B21581, was caused by a defective ELCU contactor.

- a) Do a phase-to-phase resistance check.

<1> Measure the resistance between these pins (WDM 21-27-31).

DB21581		DB21581	
1	.....	2	
1	.....	3	
2	.....	3	

- b) If the difference between the resistances is not 5% or less, there could be a defective ELCU contactor. Do these steps:

<1> Examine the fan for one or more of these conditions.

<a> A large quantity of smoke is seen during the failure of the fan.

 The fan has a pungent smell during or after it has failed.

<c> The fan impeller is locked in one position.

<d> Examine the bearing capsule through the fan check valve for a dark tacky substance on or around the bearing capsule.

Figure 301 (Sheet 1)

<2> If any of these conditions are observed, replace the electrical load control unit (ELCU), M21102, in the P100 panel for the equipment cooling supply fan.

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,

ELCU Installation, AMM TASK 24-51-05-400-801.

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- 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- 5) If the maintenance message shows on the ground test display, then continue.
- 6) Replace the Equipment Cooling Low Flow Sensor, M21582 (WDM 21-27-51).

NOTE: The EQUIP COOLING FAN L EICAS status message and maintenance message 21-14021 will be displayed when either of the equipment cooling low flow sensors fail in the low flow position during the equipment cooling test that allows the left equipment cooling supply fan to operate.

- (d) If there is not 3-phase 115/208 VAC between the pins of connector DB21581, then do the steps that follow:
 - 1) Repair the wiring between these pins of connector DB21581 and connector DM21102 at the P100 Power Panel (WDM 21-27-31):

DM21102	DB21581
pin A2	pin 1
pin B2	pin 2
pin C2	pin 3

- 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the path to ground for the supply fan:
 - (a) Disconnect connector DB21581 from the fan, B21581.
 - (b) Do a continuity check between pin 5 of connector DB21581, and structure ground (WDM 21-27-31).
 - (c) Do a continuity check between pin 8 of connector DB21581, and structure ground (WDM 21-27-31).
 - (d) If there is not continuity between pins 5 and 8 of connector DB21581, and structure ground, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21581.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If there is continuity between pins 5 and 8 of connector DB21581, and structure ground, then continue.
 - (f) Do a continuity check between pins 5 and 6 of connector DB21581 at the supply fan (WDM 21-27-31).
 - (g) If there is not continuity between pins 5 and 6 of connector DB21581 at the supply fan, then do these steps:

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- 1) Replace the equipment cooling supply fan, B21581.
These are the tasks:
Equipment Cooling Supply Fan Removal, AMM TASK 21-27-03-000-801,
Equipment Cooling Supply Fan Installation, AMM TASK 21-27-03-400-801.
- 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
- 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (h) If there is continuity between pins 5 and 6 of connector DB21581 at the supply fan, then continue.
- (3) Do this check of the wiring between the left ECSMC and the fan:
 - (a) Re-connect connector DB21581.
 - (b) Remove the left ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (c) Do a continuity check between pin 91 of connector XA14 at the Left Systems Cardfile, P85, and structure ground (WDM 21-27-31).
 - (d) If there is not continuity between pin 91 of connector XA14 and structure ground, then do these steps:
 - 1) Repair the wiring between these pins of connector XA14 in the P85 panel, and connector DB21581 at the fan.

XA14	DB21581
pin 91	pin 6
 - 2) Re-install the left ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If there is continuity between pin 91 of connector XA14 and structure ground, then continue.
- (4) Replace the left ECS miscellaneous card (ECSMC), A14, in the Left Systems Cardfile, P85
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the wiring between the Left Equipment Cooling Controller, M21104 and the Power Panel Controller, M24500 in the Left Power Panel, P100:

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- (a) Remove the PPC, M24500, in the Left Power Panel, P100, do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.
 - (b) Disconnect connector DM21104A from the Left ECC, M21104.
 - (c) Do a continuity check between pin 21 at connector DM21104A and pin B74 of DM24500 in the Left Power Panel, P100.
 - (d) If there is not continuity between the pins of connector DM21104A and DM24500, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the PPC, M214500. do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
 - 3) Re-install connector DM21104A.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If there is continuity between the pins of connector DM21104A and DM24500, then continue.
- (6) Replace the Equipment Cooling Controller, M21104
- These are the tasks:
- Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

881. Equipment Cooling Supply Fan (Right) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-14024.

B. Initial Evaluation

- (1) Open then close this circuit breaker to make sure the electronic load control unit (ELCU), M21202, for the equipment cooling supply fan, B21582, is not latched:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21600	EQPT CLG SPLY FAN 2 CTRL

- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Do a check for electrical power to the equipment cooling supply fan, B21582.
 - (a) Disconnect electrical connector DB21582 from the equipment cooling supply fan B21582. (WDM 21-27-32)
 - (b) Add an electrical jumper, STD-4931 between pins 5 and 6 of connector DB21582.
 - (c) Do a check for 3-phase 115/208 VAC between these pins of connector DB21582:

DB21582		DB21582	
pin 1	.....	pin 2	
pin 1	.....	pin 3	
pin 2	.....	pin 3	



WARNING

IF YOU DO NOT REMOVE THE JUMPER AFTER THIS TEST THE OVERHEAT PROTECTION AND CONTROL FOR THE FAN WILL BE REMOVED. DURING FLIGHT FIRE AND SMOKE MAY EXIST WITHOUT DETECTION AND CONTROL OF THE FAN.

- (d) Remove the electrical jumper, STD-4931 between pins 5 and 6 of connector DB21582.
- (e) If there is 3-phase 115/208 VAC between the pins of connector DB21582, then do the steps that follow:
 - 1) Replace the equipment cooling supply fan, B21582.

These are the tasks:
Equipment Cooling Supply Fan Removal, AMM TASK 21-27-03-000-801,
Equipment Cooling Supply Fan Installation, AMM TASK 21-27-03-400-801.
 - 2) Determine if the failure of the equipment cooling supply fan, B21582 was caused by a defective ELCU contactor.
 - a) Do a phase-to-phase resistance check.
 - <1> Measure the resistance between these pins (WDM 21-27-32).

DB21582		DB21582	
1	.....	2	
1	.....	3	
2	.....	3	

- b) If the difference between the resistances is not 5% or less, there could be a defective ELCU contactor. Do these steps:
 - <1> Examine the fan for one or more of these conditions.
 - <a> A large quantity of smoke is seen during the failure of the fan.
 - The fan has a pungent smell during or after it has failed.
 - <c> The fan impeller is locked in one position.
 - <d> Examine the bearing capsule through the fan check valve for a dark tacky substance on or around the bearing capsule.
Figure 301 (Sheet 1)

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- <2> If any of these conditions are observed, replace the electrical load control unit (ELCU), M21202, in the P100 panel for the equipment cooling supply fan.

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,

ELCU Installation, AMM TASK 24-51-05-400-801.

- 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (f) If there is not 3-phase 115/208 VAC between the pins of connector DB21582, then do the steps that follow:
- 1) Repair the wiring between these pins of connector DB21582 and connector DM21202 at the P100 Power Panel (WDM 21-27-32):

DM21202	DB21582
pin A2	pin 1
pin B2	pin 2
pin C2	pin 3

- 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the path to ground for the supply fan:
- (a) Disconnect connector DB21582 from the fan, B21582.
 - (b) Do a continuity check between pin 5 of connector DB21582, and structure ground (WDM 21-27-32).
 - (c) Do a continuity check between pin 8 of connector DB21582, and structure ground (WDM 21-27-32).
 - (d) If there is not continuity between pins 5 and 8 of connector DB21582, and structure ground, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21582.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If there is continuity between pins 5 and 8 of connector DB21582, and structure ground, then continue.
 - (f) Do a continuity check between pins 5 and 6 of connector DB21582 at the supply fan (WDM 21-27-32).
 - (g) If there is not continuity between pins 5 and 6 of connector DB21582 at the supply fan, then do these steps:

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- 1) Replace the equipment cooling supply fan, B21582.
These are the tasks:
Equipment Cooling Supply Fan Removal, AMM TASK 21-27-03-000-801,
Equipment Cooling Supply Fan Installation, AMM TASK 21-27-03-400-801.
- 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
- 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (h) If there is continuity between pins 5 and 6 of connector DB21582 at the supply fan, then continue.
- (3) Do this check of the wiring between the right ECSMC and the fan:
 - (a) Re-connect connector DB21582.
 - (b) Remove the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801
 - (c) Do a continuity check between pin 91 of connector XA14 at the Right Systems Cardfile, P84, and structure ground (WDM 21-27-32).
 - (d) If there is not continuity between pin 91 of connector XA14 and structure ground, then do these steps:
 - 1) Repair the wiring between these pins of connector XA14 in the P84 panel, and connector DB21582 at the fan (WDM 21-27-32).

XA14	DB21582
pin 91	pin 6

 - 2) Re-install the right ECSMC, A14. To remove it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If there is continuity between pin 91 of connector XA14 and structure ground, then continue.
- (4) Replace the right ECS miscellaneous card (ECSMC), A14, in the Right Systems Cardfile, P84
These are the tasks:
ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the wiring between the Right Equipment Cooling Controller, M21207 and the Power Panel Controller, M24501 in the Right Power Panel, P200:

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- (a) Remove the PPC, M24501, in the Right Power Panel, P200, do this task: Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002.
 - (b) Disconnect connector DM21207A from the Right ECC, M21207.
 - (c) Do a continuity check between pin 22 at connector DM21207A and pin B74 of DM24501 in the Right Power Panel, P200. (WDM 21-27-32)
 - (d) If there is not continuity between the pins of connector DM21207A and DM24501, then do these steps:
 - 1) Repair the wiring. (WDM 21-27-32)
 - 2) Re-install the PPC, M214501. do this task: Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
 - 3) Re-install connector DM21207A.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If there is continuity between the pins of connector DM21207A and DM24501, then continue.
- (6) Replace the Equipment Cooling Controller, M21207
- These are the tasks:
- Equipment Cooling Controllers Removal, AMM TASK 21-27-01-000-801,
Equipment Cooling Controllers Installation, AMM TASK 21-27-01-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

882. Relay (R SATCOM BACKUP COOLING FAN) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-50018.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Replace the right SATCOM backup cooling fan relay, K21266, in the P210 panel (WDM 21-27-34).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P210 panel right SATCOM backup cooling fan relay circuit (WDM 21-27-34).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

883. SATCOM Backup Cooling Fan (Right) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16014.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the SATCOM backup cooling fan, B21266.

These are the tasks:

SATCOM Backup Cooling Fan Removal - Electronic Equipment Rack, E13, AMM TASK 21-27-30-000-802,

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SATCOM Backup Cooling Fan Installation - Electronic Equipment Rack, E13, AMM TASK 21-27-30-400-802.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the right ECS miscellaneous card (ECSMC), A14, in the Right Systems Cardfile, P84
- These are the tasks:
- ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the ground wiring at the connector for the fan:
- (a) Disconnect connector DB21266 from the fan, B21266.
 - (b) Do a continuity check between pin 3 of connector DB21266, and structure ground (WDM 21-27-34).
 - 1) If there is not continuity between pin 3 of connector DB21266, and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21266.
 - c) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pin 3 of connector DB21266, and structure ground, then continue.
- (5) Do this check of the wiring between the relay and the fan:
- (a) Remove the SATCOM backup cooling fan relay, K21266, in the Right Power Management Panel, P210 (WDM 21-27-34)
 - (b) Do a wiring check between these pins of connector DK21266 on the P210 panel and connector DB21266 at the fan, B21266:

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DK21266

pin A1

DB21266

pin 1

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the relay K21266.
 - c) Re-install connector DB21266.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If you do not find a problem with the wiring, then continue.
- (6) Do a check of the internal wiring in the P210 panel for the Signal Interface Unit (2), M24509, circuit (WDM 21-27-34)
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21266 to the fan, B21266.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

885. Relay (IFE PASS/SEATS Switch) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12135.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the IFE SEATS SW relay, K24302, in the P210 panel (WDM 24-51-41).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.

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- (2) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P210 panel for the IFE SEAT SW relay circuit (WDM 24-51-41).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

887. Relay (GND SVCE SEC 1) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12136.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the GND SVCE SEC 1 relay, K24050, in the P320 panel (WDM 24-51-41).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.

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- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P320 panel for the GND SVCE SEC 1 relay circuit (WDM 24-51-41).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

889. Relay (GND SVCE SEC 2) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12139.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the GND SVCE SEC 2 relay, K24051, in the P320 panel (WDM 24-51-41).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE ELMS PANELS BEFORE YOU REMOVE COMPONENTS OF THE PANELS. IF YOU DO NOT REMOVE ELECTRICAL POWER, DAMAGE TO EQUIPMENT CAN OCCUR.

- (2) Do a check of the Signal Interface Unit (SIU) 1, M24508, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Recirculation Fan System.

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- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) on the existing faults display, then you corrected the fault.

NOTE: Wait up to 5 minutes, or until the maintenance message shows, after there is power to the ELMS panel before you read the status of the maintenance message from the MAT.

- (c) If the maintenance message shows on the existing fault display, then continue.
- (3) Do a check of the internal wiring in the P320 panel for the GND SVCE SEC 2 relay circuit (WDM 24-51-41).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

891. Relay (CABIN/UTIL Switch) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12140.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the CABIN/UTIL SW relay, K24301, in the P210 panel (WDM 24-51-41).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.

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- (3) Do a check of the internal wiring in the P210 panel for the CABIN/UTIL SW relay circuit (WDM 24-51-41).
- (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, IFE Equipment Cooling.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

———— **END OF TASK** ————

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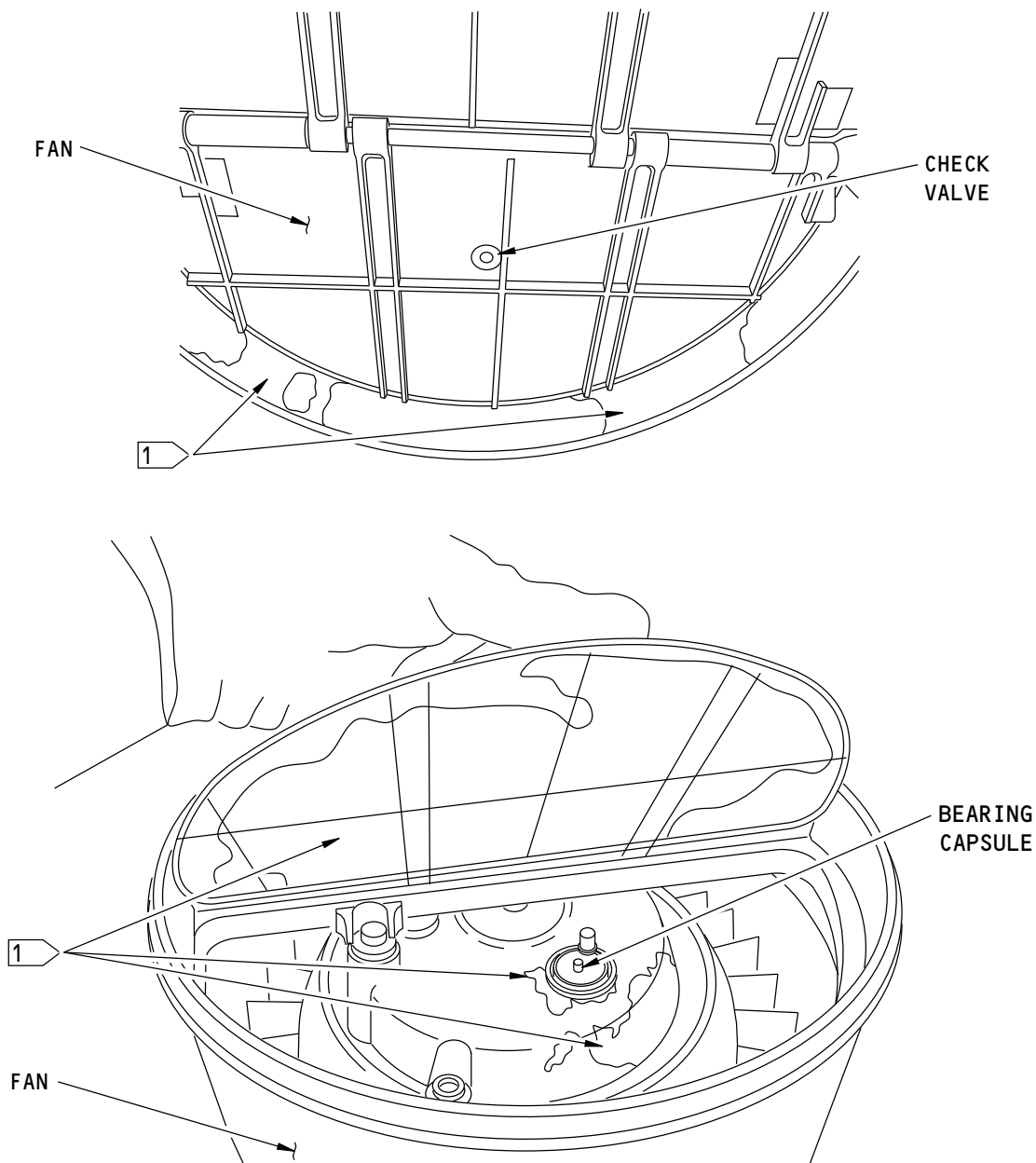
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EQUIPMENT COOLING VENTILATION/SUPPLY FAN

1 POSSIBLE AREAS WITH A
DARK TACKY SUBSTANCE

2146171 S0000464833_V1

Equipment Cooling Ventilation/Supply Fan Problems
Figure 301/21-27-00-990-801

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801. Forward Cargo Air Conditioning Shutoff Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16121.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the Forward Cargo Air Conditioning (FCAC) shutoff valve, V21004.

These are the tasks:

Forward Cargo Air Conditioning (FCAC) Shutoff Valve Removal, AMM TASK 21-28-01-000-801,

Forward Cargo Air Conditioning (FCAC) Shutoff Valve Installation, AMM TASK 21-28-01-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the right ECS miscellaneous card (ECSMC), A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the ground wiring:
 - (a) Disconnect the electrical connector DV21004 from the valve V21004.
 - (b) Do a continuity check between these pins of connector DV21004 and structure ground (WDM 21-28-11):
 - 1) Pin 3 to structure ground
 - 2) Pin 5 to structure ground
 - 3) Pin 8 to structure ground.
 - (c) If there is not continuity to structure ground at each of the pins of connector DV21004 specified above, then do these steps:

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- 1) Repair the wiring.
 - 2) Reconnect connector DV21004.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If there is continuity at each of the pins of connector DV21004 specified above, then continue.
- (4) Do this check of the wiring between the FCAC shutoff valve and the right ECSMC:
- (a) Remove the right ECSMC from the P84 panel, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - (b) Disconnect connector DV21004 from the valve, V21004 (WDM 21-28-11).
 - (c) Do a wiring check between these pins of connector XA14 at the right systems cardfile, P84, and connector DV21004 at the valve, V21004 (WDM 21-28-11):

XA14	DV21004
pin 63	pin 6
pin 60	pin 7

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reinstall the ECSMC, A14.
 - c) Reconnect connector DV21004.
 - d) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - e) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 2) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the wiring between the FCAC shutoff valve relay and the valve:
- (a) Remove the forward cargo heat valve relay, K21017, from the P210 panel (WDM 21-28-11).
 - (b) Do a wiring check between these pins of connector DK21017 in the P210 panel and connector DV21004 at the valve, V21004 (WDM 21-28-11):

DK21017	DV21004
pin A1	pin 2
pin A3	pin 1

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reinstall the relay, K21017.
 - c) Reconnect connector DV21004.
 - d) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.

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- e) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

803. Relay (FCAC SOV VALVE) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-16192.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the FCAC shutoff valve control relay, K21017, in the P210 panel (WDM 21-28-11).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit 1 (SIU-1), M24508, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the Current Monitor Card, M24519 in the P210 panel,
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the internal wiring in the P210 panel FCAC shutoff valve control relay circuit (WDM 21-28-11).
 - (a) If you find a problem with the wiring, then do these steps:

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- 1) Repair the wiring.
- 2) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Air Conditioning.
- 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

———— **END OF TASK** ————

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834. Gasper Air (Crew Rest Areas) Problems - Fault Isolation

A. Initial Evaluation

- (1) Do this task: Supply Conditioned Air to the Airplane, AMM TASK 21-00-00-800-801.

NOTE: Make sure that all the gasper outlets are open.

- (a) If the airflow from the gasper outlets in the crew rest areas are not satisfactory, then do the Fault Isolation Procedure below.
- (b) If the airflow is satisfactory, then there was an intermittent fault.

B. Fault Isolation Procedure

- (1) Examine the gasper outlets.
- (a) If the gasper outlet is not serviceable, then do these steps:
- 1) Replace the gasper outlet.
 - 2) If the air flow is satisfactory, then you corrected the fault.
- (b) If the gasper outlet is serviceable, then continue.
- (2) Examine the air distribution ducts for the applicable gasper outlet.
- (a) If the air distribution ducts for the gasper outlet are disconnected or blocked, then do these steps:
- 1) Re-connect the ducts or remove the blockage.
 - 2) If the air flow is satisfactory, then you corrected the fault.
- (3) Do this task: Remove Conditioned Air from the Airplane, AMM TASK 21-00-00-800-802.

———— **END OF TASK** ————

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801. Aft Outflow Valve Motor-L Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39030.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedures below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the aft outflow valve motor-L, M21313M2.

These are the tasks:

DC Motor Removal, AMM TASK 21-31-03-000-821-001,

DC Motor Installation, AMM TASK 21-31-03-000-809-001.

NOTE: The electrical connector attached to the motor-L is identified with a label J1.

- (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the aft outflow valve control unit (VCU), M21313M1.

These are the tasks:

Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,

Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.

 - (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

803. Aft Outflow Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39010.

B. Initial Evaluation

- (1) Do these steps to determine which ASCPC reported the fault:
 - (a) Highlight the maintenance message.
 - (b) Select MAINTENANCE MESSAGE DATA on the MAT.
 - (c) Look at the fault information and make a note of which ASCPC (Left/Right) reported the fault.

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- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows NOT ACTIVE for the maintenance message, then do these steps:
 - (a) If the left ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - (b) If the Right ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Examine the mechanical linkage of the outflow valve for damage.
 - (a) If the mechanical linkage is loose or damaged, then do these steps:
 - 1) Tighten, replace, or repair the mechanical linkage.
 - 2) Do this task: Outflow Valve Door Adjustment, AMM TASK 21-31-03-760-803-002 or Outflow Valve Door Adjustment, AMM TASK 21-31-03-760-802-001.
 - 3) If the left ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - 4) If the right ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the mechanical linkage for the outflow valve is satisfactory, then continue.
- (2) If the left ASCPC reported the fault, then do these steps:
 - (a) Replace the aft outflow valve motor-L, M21313M2.

These are the tasks:
DC Motor Removal, AMM TASK 21-31-03-000-821-001,
DC Motor Installation, AMM TASK 21-31-03-000-809-001.

NOTE: The electrical connector attached to the motor-L is identified with a label J1.
 - (b) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) If the right ASCPC reported the fault, then do these steps:
 - (a) Replace the aft outflow valve motor-R, M21313M3.

These are the tasks:
DC Motor Removal, AMM TASK 21-31-03-000-821-001,
DC Motor Installation, AMM TASK 21-31-03-000-809-001.

NOTE: The electrical connector attached to the motor-R is identified with a label J3.
 - (b) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.



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- (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (4) Replace the gearbox assembly, M21313M4.
These are the tasks:
Gearbox Assembly Removal, AMM TASK 21-31-03-000-810-001,
Gearbox Assembly Installation, AMM TASK 21-31-03-400-808-001.
NOTE: It is necessary to remove the actuator assembly of the outflow valve to get access to the gearbox assembly.
 - (a) If the left ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - (b) If the right ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the valve control unit for the aft outflow valve, M21313M1.
These are the tasks:
Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,
Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.
 - (a) If the left ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - (b) If the right ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

804. Forward Outflow Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39020.

B. Initial Evaluation

- (1) Do these steps to determine which ASCPC reported the fault:
 - (a) Highlight the maintenance message.
 - (b) Select MAINTENANCE MESSAGE DATA on the MAT.
 - (c) Look at the fault information and make a note of which ASCPC (Left/Right) reported the fault.
- (2) If the MAT shows active for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows NOT ACTIVE for the maintenance message, then do these steps:
 - (a) If the left ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - (b) If the Right ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.

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- (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Examine the mechanical linkage of the outflow valve for damage.
 - (a) If the mechanical linkage is loose or damaged, then do these steps:
 - 1) Tighten, replace, or repair the mechanical linkage.
 - 2) Do this task: Outflow Valve Door Adjustment, AMM TASK 21-31-03-760-803-002 or Outflow Valve Door Adjustment, AMM TASK 21-31-03-760-802-001.
 - 3) If the left ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - 4) If the right ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the mechanical linkage for the outflow valve is satisfactory, then continue.
- (2) If the left ASCPC reported the fault, then do these steps:
 - (a) Replace the forward outflow valve motor-L, M21312M2.
These are the tasks:
DC Motor Removal, AMM TASK 21-31-03-000-821-001,
DC Motor Installation, AMM TASK 21-31-03-000-809-001.
NOTE: The electrical connector attached to the motor-L is identified with a label J1.
 - (b) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) If the right ASCPC reported the fault, then do these steps:
 - (a) Replace the forward outflow valve motor-R, M21312M3.
These are the tasks:
DC Motor Removal, AMM TASK 21-31-03-000-821-001,
DC Motor Installation, AMM TASK 21-31-03-000-809-001.
NOTE: The electrical connector attached to the motor-R is identified with a label J3.
 - (b) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (4) Replace the gearbox assembly, M21312M4.
These are the tasks:
Gearbox Assembly Removal, AMM TASK 21-31-03-000-810-001,

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Gearbox Assembly Installation, AMM TASK 21-31-03-400-808-001.

NOTE: It is necessary to remove the actuator assembly of the outflow valve to get access to the gearbox assembly.

- (a) If the left ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
 - (b) If the right ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (5) Replace the valve control unit for the forward outflow valve, M21312M1.

These are the tasks:

Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,

Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.

- (a) If the left ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
- (b) If the right ASCPC reported the fault, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
- (c) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

805. **Outflow Valve Control Unit (FWD) or ECU (L-FWD) No Output on L ASCPC 429 Bus - Fault Isolation**

NOTE: Spurious/nuisance EICAS status messages for “OUTFLOW VLV AFT” and “OUTFLOW VLV FWD” can occur if the Cabin Pressure Control System Pre-Flight BIT is interrupted. Refer to Boeing Maintenance Tip 777 MT 21-054.

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39190.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do these steps:
- (a) To reset the maintenance message, do this step:
 - 1) Set the FWD and AFT outflow valve switches on the overhead panel, P5, to the MAN position and then to the AUTO position within 5 seconds.
- NOTE:** The manual reset function can take up to 10 seconds to reset the system and clear any messages. Multiple presses of the switches will delay the reset task from completing or cause the test to fail.
- (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (c) If the maintenance message becomes NOT ACTIVE, continue.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.

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- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) If the MAT shows ACTIVE for both maintenance message 21-39190 and 21-39290, then do these steps:
- (a) Replace the left air supply and cabin pressure controller, (ASCPC-L), M36111.
- These are the tasks:
- ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
- 1) Push the AIR COND RESET switch on the P5 panel.
- 2) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left System Air On.
- 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (2) If the MAT shows ACTIVE for maintenance message 21-39290 only, refer to this task: Outflow Valve Control Unit (AFT) or ECU (L-AFT) No Output on L ASCPC 429 Bus - Fault Isolation, 21-31 TASK 814.
- (3) If the MAT shows ACTIVE for maintenance message 21-39190 only, then continue.

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- (4) Replace the valve control unit (VCU) for the forward outflow valve, M21312M1.
- These are the tasks:
- Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,
Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (5) Replace the left electronic control unit (ECU) for the forward outflow valve, M21312M1.
- These are the tasks:
- Electronic Control Unit (ECU) Removal, AMM TASK 21-31-03-000-817-002,
Electronic Control Unit (ECU) Installation, AMM TASK 21-31-03-400-816-002.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (6) Do this check of the wiring:
- (a) Remove the left air supply and cabin pressure controller (ASCPC-L), M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.

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- (b) Disconnect connector DM21312F from the forward outflow valve, M21312M1.
- (c) Do a wiring check between these pins of connector DM36111AB at the E1-2 shelf and connector DM21312F (WDM 21-31-11):

DM36111AB	DM21312F
pin C7	pin 6
pin D7	pin 8

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21312F.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (g) Do a continuity check between pin 1 and 3 of connector DM21312F.
- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21312F.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (7) Replace the left air supply and cabin pressure controller, (ASCPC-L), M36111.
These are the tasks:
ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

806. Outflow Valve Control Unit (AFT) or ECU (L-AFT) Motor Control Circuit is Open or Shorted - Fault Isolation

NOTE: Spurious/nuisance EICAS status messages for “OUTFLOW VLV AFT” and “OUTFLOW VLV FWD” can occur if the Cabin Pressure Control System Pre-Flight BIT is interrupted. Refer to Boeing Maintenance Tip 777 MT 21-054.

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39080.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do these steps:
 - (a) To reset the maintenance message, do this step:
 - 1) Set the FWD and AFT outflow valve switches on the overhead panel, P5, to the MAN position and then to the AUTO position within 5 seconds.

NOTE: The manual reset function can take up to 10 seconds to reset the system and clear any messages. Multiple presses of the switches will delay the reset task from completing or cause the test to fail.
 - (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (c) If the maintenance message becomes NOT ACTIVE, continue.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then examine the aft outflow valve doors, door seals and frame for damage.
 - (c) If damage is found, do these steps to replace the outflow valve:

These are the tasks:

Outflow Valve Assembly Removal, AMM TASK 21-31-03-000-806-001,
Outflow Valve Assembly Installation, AMM TASK 21-31-03-400-806-001.
Cabin Pressure Outflow Valve (CPOV) Assembly Removal, AMM TASK 21-31-03-000-812-002,
Cabin Pressure Outflow Valve (CPOV) Assembly Installation, AMM TASK 21-31-03-400-811-002.

C. Fault Isolation Procedure

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- (1) Replace the valve control unit (VCU) for the aft outflow valve, M21313M1.

These are the tasks:

Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,
Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.

 - (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.

ARO ALL; AIRPLANES WITH OUTFLOW VALVE P/N 2119160

- (2) Replace the left electronic control unit (ECU) for the aft outflow valve, M21313M1.

These are the tasks:

Electronic Control Unit (ECU) Removal, AMM TASK 21-31-03-000-817-002,
Electronic Control Unit (ECU) Installation, AMM TASK 21-31-03-400-816-002.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (3) Do this check for voltage at the outflow valve:

- (a) Disconnect connectors DM21313D and DM21313F from the aft outflow valve, M21313M1.
- (b) Do a check for 28 VDC from pin 4 of connector DM21313D to structure ground and from pin 4 of connector DM21313F to structure ground (WDM 21-31-11).
- (c) If there is not 28 VDC at pin 4 of connector DM21313F, then replace this circuit breaker:
(WDM 21-31-31)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	8	C21612	R AFT OFL VLV

- (d) If there is not 28 VDC at pin 4 of connector DM21313D, then replace this circuit breaker:
(WDM 21-31-31)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	C21611	L AFT OFL VLV

- 1) Re-connect connectors DM21313D and DM21313F.
- 2) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If the maintenance message shows on the ground test display, then continue.
- 5) If you did not find 28 VDC at pin 4 of connector DM21313D, then repair the wiring between pin 4 of connector DM21313D and this circuit breaker:
(WDM 21-31-11)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	8	C21612	R AFT OFL VLV

- 6) If you did not find 28 VDC at pin 4 of connector DM21313F, then repair the wiring between pin 4 of connector DM21313F and this circuit breaker:
(WDM 21-31-11)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	C21611	L AFT OFL VLV

- 7) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.

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- 8) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If there is 28 VDC at pin 4 of connectors DM21313D and DM21313F, then continue.
- (f) Re-connect connectors DM21313D and DM21313F.
- (4) Do this check of the wiring from the left air supply cabin pressure controller (ASCPC-L) to the aft outflow valve:
 - (a) Remove the ASCPC-L, M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Disconnect connector DM21313F from the outflow valve, M21313M1.
 - (c) Do a wiring check between these pins of connector DM36111AB at the E1-2 shelf and connector DM21313F (WDM 21-31-11):

DM36111AB	DM21313F
pin A7	pin 6
pin B7	pin 8
pin C5	pin 9
pin D5	pin 11

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21313F.
 - 4) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the wiring from the ASCPC-R to the aft outflow valve:
 - (a) Remove the ASCPC-R, M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Disconnect connector DM21313D from the outflow valve, M21313M1.
 - (c) Do a wiring check between these pins of connector DM36112AB at the E2-2 shelf and connector DM21313D (WDM 21-31-12):

DM36112AB	DM21313D
pin A7	pin 6
pin B7	pin 8
pin C5	pin 9
pin D5	pin 11

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.

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- 3) Re-connect connector DM21313D.
- 4) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
- 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (6) Examine the aft outflow valve doors, door seals, and frame for damage.
 - (a) If damage is found, do these steps to replace the outflow valve:

These are the tasks:

Outflow Valve Assembly Removal, AMM TASK 21-31-03-000-806-001

Outflow Valve Assembly Installation, AMM TASK 21-31-03-400-806-001

Cabin Pressure Outflow Valve (CPOV) Assembly Removal, AMM TASK 21-31-03-000-812-002

Cabin Pressure Outflow Valve (CPOV) Assembly Installation, AMM TASK 21-31-03-400-811-002

————— END OF TASK —————

807. Forward Outflow Valve Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43310.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Push the FWD OUTFLOW VALVE switch to the AUTO position.
 - (b) Push the FWD OUTFLOW VALVE switch to the MAN position.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or MAN position, then do the Fault Isolation Procedure below.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the AUTO and MAN positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the forward outflow valve switch, M36113S7 (WDM 21-31-21).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Push the switch to the AUTO position.
 - 2) Push the switch to the MAN position.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and MAN positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or MAN position, then continue.
- (2) Do this check of the wiring from the forward outflow valve switch to the structure ground:

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- (a) Remove the bleed air/pressurization module, M36113, from the P5 panel, but do not disconnect its electrical connectors.
- (b) Disconnect connector M36113DS7 from the forward outflow valve switch, M36113S7.
- (c) Do a continuity check between pin 9 of connector M36113DS7 and the structure ground. (WDM 21-31-21)
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector M36113DS7 to the pressurization module.
 - 3) Re-install the bleed air/pressurization module.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Push the switch to the AUTO position.
 - b) Push the switch to the MAN position.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and MAN positions, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (3) Do this check of the wiring from the forward outflow valve switch to the left overhead panel cardfile (OPCF-L):
 - (a) Remove the bleed air/pressurization module, M36113, from the P5 panel, but do not disconnect its electrical connectors.
 - (b) Disconnect connector M36113DS7 from the forward outflow valve switch, M36113S7.
 - (c) Disconnect connector DM23117M from the OPCF-L, M23117.
 - (d) Do a wiring check between these pins of connector M36113DS7 at pilot's overhead panel, P5, and connector DM23117M, at the maintenance panel, P61 (WDM 21-31-21):

M36113DS7	DM23117M
pin 4	pin A13
pin 6	pin A14
pin 5	pin A12

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M36113DS7 and DM23117M.
 - 3) Re-install the bleed air/pressurization module.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Push the switch to the AUTO position.
 - b) Push the switch to the MAN position.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and MAN positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connectors M23117DS7 and DM23117M.
- (h) Re-install the bleed air/pressurization module.

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- (4) Replace the OPCF-L chassis, M23117, at the maintenance panel, P61.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,

Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Push the switch to the AUTO position.
 - 2) Push the switch to the MAN position.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and MAN positions, you corrected the fault.

— END OF TASK —

808. Aft Outflow Valve Motor-R Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39040.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the aft outflow valve motor-R, M21313M3.

These are the tasks:

DC Motor Removal, AMM TASK 21-31-03-000-821-001,

DC Motor Installation, AMM TASK 21-31-03-000-809-001.

NOTE: The electrical connector attached to the motor-R is identified with a label J3.

- (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the aft outflow valve control unit (VCU), M21313M1.

These are the tasks:

Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,

Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.

- (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

809. Forward Outflow Valve Motor-L Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39050.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the forward outflow valve motor-L, M21312M2.

These are the tasks:

DC Motor Removal, AMM TASK 21-31-03-000-821-001,

DC Motor Installation, AMM TASK 21-31-03-000-809-001.

NOTE: The electrical connector attached to the motor-L is identified with a label J1.

- (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the forward outflow valve control unit (VCU), M21312M1.

These are the tasks:

Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,

Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.

- (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left Cabin Pressure Control System.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

810. Forward Outflow Valve Motor-R Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39060.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the forward outflow valve motor-R, M21312M3.

These are the tasks:

DC Motor Removal, AMM TASK 21-31-03-000-821-001,

DC Motor Installation, AMM TASK 21-31-03-000-809-001.

NOTE: The electrical connector attached to the motor-R is identified with a label J3.

- (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the forward outflow valve control unit (VCU), M21312M1.

These are the tasks:

Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,

Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.

- (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right Cabin Pressure Control System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

811. Aft Outflow Valve Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43020.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Push the AFT OUTFLOW VALVE switch to the AUTO position.
 - (b) Push the AFT OUTFLOW VALVE switch to the MAN position.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or MAN position, then do the Fault Isolation Procedure below.

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- (d) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the AUTO and MAN positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the aft outflow valve switch, M36113S8 (WDM 21-31-22).
- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Push the switch to the AUTO position.
 - 2) Push the switch to the MAN position.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and MAN positions, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or MAN position, then continue.
- (2) Do this check of the wiring from the aft outflow valve switch to the structure ground:
- (a) Remove the bleed air/pressurization module, M36113, from the P5 panel, but do not disconnect its electrical connectors.
- (b) Disconnect connector M36113DS8 from the aft outflow valve switch, M36113S8.
- (c) Do a continuity check between pin 9 of connector M36113DS8 and the structure ground. (WDM 21-31-22)
- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector M36113DS8 to the pressurization module.
 - 3) Re-install the bleed air/pressurization module.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Push the switch to the AUTO position.
 - b) Push the switch to the MAN position.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and MAN positions, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (3) Do this check of the wiring from the aft outflow valve switch to the right overhead panel cardfile (OPCF-R):
- (a) Remove the bleed air/pressurization module, M36113, from the P5 panel, but do not disconnect its electrical connectors.
- (b) Disconnect connector M36113DS8 from the aft outflow valve switch, M36113S8.
- (c) Disconnect connector DM23127M from the OPCF-R, M23217.
- (d) Do a wiring check between these pins of connector M36113DS8 at pilot's overhead panel, P5, and connector DM23217M, at the maintenance panel, P61 (WDM 21-31-22):

M36113DS8	DM23217M
pin 4	pin A13
pin 6	pin A14
pin 5	pin A12

- (e) If you find a problem with the wiring, then do these steps:

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- 1) Repair the wiring.
- 2) Re-connect connectors M36113DS8 and DM23217M.
- 3) Re-install the bleed air/pressurization module.
- 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Push the switch to the AUTO position.
 - b) Push the switch to the MAN position.
- 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and MAN positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connectors M23217DS8 and DM23217M.
- (h) Re-install the bleed air/pressurization module.
- (4) Replace the OPCF-R chassis, M23217, at the maintenance panel, P61.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Push the switch to the AUTO position.
 - 2) Push the switch to the MAN position.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and MAN positions, you corrected the fault.

————— **END OF TASK** —————

812. Forward Outflow Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-38020.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do these steps:
 - (a) Push the FWD OUTFLOW VALVE switch to the AUTO position.
 - (b) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the forward outflow valve switch, M36113S7 (WDM 21-31-21).
 - (a) Push the switch to the AUTO position.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (2) Do this check of the wiring from the forward manual drive switch to the structure ground:
- (a) Remove the bleed air/pressurization module, M36113, from the P5 panel, but do not disconnect its electrical connectors.
 - (b) Disconnect connector M36113DS10 from the forward manual drive switch, M36113S10.
 - (c) Do a continuity check between pin 3 of connector M36113DS10 and the structure ground. (WDM 21-31-21)
 - (d) Do a continuity check between pin 4 of connector M36113DS10 and the structure ground. (WDM 21-31-21)
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector M36113DS10.
 - 3) Re-install the bleed air/pressurization module.
 - 4) Push the switch to the AUTO position.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
- (3) Do this check of the wiring from the bleed air/pressurization module to the valve control unit for the forward outflow valve (WDM 21-31-21):
- (a) Disconnect connector DM36113B from the bleed air/pressurization module, M36113.
 - (b) Disconnect connector DM21312E from the valve control unit, M21312M1.
 - (c) Do a wiring check between these pins of connector DM36113B at pilot's overhead panel, P5, and connector DM21312E, at the valve control unit (WDM 21-31-21):
- | DM36113B | DM21312E |
|------------------|-----------------|
| pin 10 | pin 1 |
| pin 12 | pin 3 |
| pin 9 | pin 4 |
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DM36113B and DM21312E.
 - 3) Push the switch to the AUTO position.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-connect connectors DM36113B and DM21312E.
- (4) Replace the valve control unit for the forward outflow valve, M21312M1.
- These are the tasks:
- Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,
Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.
- (a) Push the switch to the AUTO position.

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- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

813. Aft Outflow Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-38010.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do these steps:
 - (a) Push the AFT OUTFLOW VALVE switch to the AUTO position.
 - (b) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the aft outflow valve switch, M36113S8 (WDM 21-31-22).
 - (a) Push the switch to the AUTO position.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do this check of the wiring from the aft manual drive switch to the structure ground:
 - (a) Remove the bleed air/pressurization module, M36113, from the P5 panel, but do not disconnect its electrical connectors.
 - (b) Disconnect connector M36113DS11 from the forward manual drive switch, M36113S11.
 - (c) Do a continuity check between pin 3 of connector M36113DS11 and the structure ground. (WDM 21-31-22)
 - (d) Do a continuity check between pin 4 of connector M36113DS11 and the structure ground. (WDM 21-31-22)
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector M36113DS11.
 - 3) Re-install the bleed air/pressurization module.
 - 4) Push the switch to the AUTO position.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
- (3) Do this check of the wiring from the bleed air/pressurization module to the valve control unit for the aft outflow valve (WDM 21-31-22):
 - (a) Disconnect connector DM36113A from the bleed air/pressurization module, M36113.
 - (b) Disconnect connector DM21313E from the valve control unit, M21313M1.

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- (c) Do a wiring check between these pins of connector DM36113A at pilot's overhead panel, P5, and connector DM21313E, at the valve control unit (WDM 21-31-22):

DM36113A	DM21313E
pin 22	pin 4
pin 23	pin 1
pin 25	pin 3

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connectors DM36113A and DM21313E.
 - 3) Push the switch to the AUTO position.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 5) If the MAT shows ACTIVE for the maintenance message, then continue.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connectors DM36113A and DM21313E.
- (4) Replace the valve control unit for the aft outflow valve, M21313M1.
- These are the tasks:
- Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,
Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.
- (a) Push the switch to the AUTO position.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

814. Outflow Valve Control Unit (AFT) or ECU (L-AFT) No Output on L ASCPC 429 Bus - Fault Isolation

NOTE: Spurious/nuisance EICAS status messages for "OUTFLOW VLV AFT" and "OUTFLOW VLV FWD" can occur if the Cabin Pressure Control System Pre-Flight BIT is interrupted. Refer to Boeing Maintenance Tip 777 MT 21-054.

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39290.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do these steps:
- (a) To reset the maintenance message, do this step:
- 1) Set the FWD and AFT outflow valve switches on the overhead panel, P5, to the MAN position and then to the AUTO position within 5 seconds.
- NOTE:** The manual reset function can take up to 10 seconds to reset the system and clear any messages. Multiple presses of the switches will delay the reset task from completing or cause the test to fail.
- (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (c) If the maintenance message becomes NOT ACTIVE, continue.

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- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) If the MAT shows ACTIVE for both maintenance message 21-39190 and 21-39290, then do these steps:
 - (a) Replace the left air supply and cabin pressure controller, (ASCPC-L), M36111.
These are the tasks:
ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 1) Push the AIR COND RESET switch on the P5 panel.
 - 2) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (2) If the MAT shows ACTIVE for maintenance message 21-39190 only, refer to this task: Outflow Valve Control Unit (FWD) or ECU (L-FWD) No Output on L ASCPC 429 Bus - Fault Isolation, 21-31 TASK 805.
- (3) If the MAT shows ACTIVE for maintenance message 21-39290 only, then continue.

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- (4) Replace the valve control unit (VCU) for the aft outflow valve, M21313M1.
These are the tasks:
Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,
Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (5) Replace the left electronic control unit (ECU) for the aft outflow valve, M21313M1.
These are the tasks:
Electronic Control Unit (ECU) Removal, AMM TASK 21-31-03-000-817-002,
Electronic Control Unit (ECU) Installation, AMM TASK 21-31-03-400-816-002.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (6) Do this check of the wiring:

- (a) Remove the left air supply and cabin pressure controller (ASCPC-L), M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- (b) Disconnect connector DM21313F from the aft outflow valve, M21313M1.
- (c) Do a wiring check between these pins of connector DM36111AB at the E1-2 shelf and connector DM21313F (WDM 21-31-11):

DM36111AB	DM21313F
pin A7	pin 6
pin B7	pin 8

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21313F.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (g) Do a continuity check between pin 2 and 3 of connector DM21313F.
- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21313F.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (7) Replace the left air supply and cabin pressure controller, (ASCPC-L), M36111.
These are the tasks:
ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.

———— **END OF TASK** ————

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815. Outflow Valve Control Unit (FWD) or ECU (R-FWD) No Output on R ASCPC 429 Bus - Fault Isolation

NOTE: Spurious/nuisance EICAS status messages for “OUTFLOW VLV AFT” and “OUTFLOW VLV FWD” can occur if the Cabin Pressure Control System Pre-Flight BIT is interrupted. Refer to Boeing Maintenance Tip 777 MT 21-054.

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39390.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do these steps:
 - (a) To reset the maintenance message, do this step:
 - 1) Set the FWD and AFT outflow valve switches on the overhead panel, P5, to the MAN position and then to the AUTO position within 5 seconds.

NOTE: The manual reset function can take up to 10 seconds to reset the system and clear any messages. Multiple presses of the switches will delay the reset task from completing or cause the test to fail.
 - (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (c) If the maintenance message becomes NOT ACTIVE, continue.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control system, System Test, Left and Right Cabin Pressure Control System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

ARO ALL; AIRPLANES WITH OUTFLOW VALVE P/N 2214420

- (1) Replace the valve control unit (VCU) for the forward outflow valve, M21312M1.

These are the tasks:
Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,
Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.

ARO ALL; AIRPLANES WITH OUTFLOW VALVE P/N 2119160

- (2) Replace the right electronic control unit (ECU) for the forward outflow valve, M21312M1.

These are the tasks:
Electronic Control Unit (ECU) Removal, AMM TASK 21-31-03-000-817-002,
Electronic Control Unit (ECU) Installation, AMM TASK 21-31-03-400-816-002.

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ARO ALL; AIRPLANES WITH OUTFLOW VALVE P/N 2119160 (Continued)

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (3) Do this check of the wiring:

- (a) Remove the right air supply and cabin pressure controller (ASCPC-R), M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- (b) Disconnect connector DM21312D from the forward outflow valve, M21312.
- (c) Do a wiring check between these pins of connector DM36112AB at the E2-2 shelf and connector DM21312D (WDM 21-31-12):

DM36112AB	DM21312D
pin C7	pin 6
pin D7	pin 8

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21312D.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (g) Do a continuity check between pin 1 and 3 of connector DM21312D.
- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21312D.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) Replace the right air supply and cabin pressure controller, (ASCPC-R), M36112.
These are the tasks:
ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

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816. Outflow Valve Control Unit (AFT) or ECU (R-AFT) No Output on R ASCPC 429 Bus - Fault Isolation

NOTE: Spurious/nuisance EICAS status messages for "OUTFLOW VLV AFT" and "OUTFLOW VLV FWD" can occur if the Cabin Pressure Control System Pre-Flight BIT is interrupted. Refer to Boeing Maintenance Tip 777 MT 21-054.

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39490.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do these steps:
 - (a) To reset the maintenance message, do this step:
 - 1) Set the FWD and AFT outflow valve switches on the overhead panel, P5, to the MAN position and then to the AUTO position within 5 seconds.

NOTE: The manual reset function can take up to 10 seconds to reset the system and clear any messages. Multiple presses of the switches will delay the reset task from completing or cause the test to fail.
 - (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (c) If the maintenance message becomes NOT ACTIVE, continue.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control system, System Test, Left and Right Cabin Pressure Control System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

ARO ALL; AIRPLANES WITH OUTFLOW VALVE P/N 2214420

- (1) Replace the valve control unit (VCU) for the aft outflow valve, M21313M1.

These are the tasks:
Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,
Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.

ARO ALL; AIRPLANES WITH OUTFLOW VALVE P/N 2119160

- (2) Replace the right electronic control unit (ECU) for the aft outflow valve, M21313M1.

These are the tasks:
Electronic Control Unit (ECU) Removal, AMM TASK 21-31-03-000-817-002,
Electronic Control Unit (ECU) Installation, AMM TASK 21-31-03-400-816-002.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (3) Do this check of the wiring:

- (a) Remove the right air supply and cabin pressure controller (ASCPC-R), M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- (b) Disconnect connector DM21313D from the aft outflow valve, M21313M1.
- (c) Do a wiring check between these pins of connector DM36112AB at the E2-2 shelf and connector DM21313D (WDM 21-31-12):

DM36112AB	DM21313D
pin A7	pin 6
pin B7	pin 8

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21313D.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (g) Do a continuity check between pin 2 and 3 of connector DM21313D.
- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21313D.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) Replace the right air supply and cabin pressure controller, (ASCPC-R), M36112.
These are the tasks:
ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Right System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.

———— **END OF TASK** ————

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817. Outflow Valve Control Unit (FWD) or ECU (L-FWD) Motor Control Circuit is Open or Shorted - Fault Isolation

NOTE: Spurious/nuisance EICAS status messages for “OUTFLOW VLV AFT” and “OUTFLOW VLV FWD” can occur if the Cabin Pressure Control System Pre-Flight BIT is interrupted. Refer to Boeing Maintenance Tip 777 MT 21-054.

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39090.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do these steps:
 - (a) To reset the maintenance message, do this step:
 - 1) Set the FWD and AFT outflow valve switches on the overhead panel, P5, to the MAN position and then to the AUTO position within 5 seconds.

NOTE: The manual reset function can take up to 10 seconds to reset the system and clear any messages. Multiple presses of the switches will delay the reset task from completing or cause the test to fail.
 - (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (c) If the maintenance message becomes NOT ACTIVE, then continue..
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then examine the forward outflow valve doors, door seals, and frame for damage.
 - (c) If damage is found, replace the outflow valve.

These are the tasks:

Outflow Valve Assembly Removal, AMM TASK 21-31-03-000-806-001

Outflow Valve Assembly Installation, AMM TASK 21-31-03-400-806-001

Cabin Pressure Outflow Valve (CPOV) Assembly Removal, AMM TASK 21-31-03-000-812-002

Cabin Pressure Outflow Valve (CPOV) Assembly Installation, AMM TASK 21-31-03-400-811-002.
 - (d) If no damage is found, there was an intermittent fault.

C. Fault Isolation Procedure

ARO ALL; AIRPLANES WITH OUTFLOW VALVE P/N 2214420

- (1) Replace the valve control unit (VCU) for the forward outflow valve, M21312M1.

These are the tasks:

Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,

Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.

 - (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.

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- (2) Replace the left electronic control unit (ECU) for the forward outflow valve, M21312M1.

These are the tasks:

Electronic Control Unit (ECU) Removal, AMM TASK 21-31-03-000-817-002,

Electronic Control Unit (ECU) Installation, AMM TASK 21-31-03-400-816-002.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (3) Do this check for voltage at the forward outflow valve:
 - (a) Disconnect connectors DM21312D and DM21312F from the forward outflow valve, M21312.
 - (b) Do a check for 28 VDC from pin 4 of connector DM21312D to structure ground and from pin 4 of connector DM21312F to structure ground (WDM 21-31-31).
 - (c) If there is not 28 VDC at pin 4 of connector DM21312D, then replace this circuit breaker:
(WDM 21-31-11)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	7	C21610	R FWD OFL VLV

- (d) If there is not 28 VDC at pin 4 of connector DM21312F, then replace this circuit breaker:
(WDM 21-31-31)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	13	C21609	L FWD OFL VLV

- 1) Re-connect connectors DM21312D and DM21312F.
- 2) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If the maintenance message shows on the ground test display, then continue.
- 5) If you did not find 28 VDC at pin 4 of connector DM21312D, then repair the wiring between pin 4 of connector DM21312D and this circuit breaker:
(WDM 21-31-11)

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Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	7	C21610	R FWD OFL VLV

- 6) If you did not find 28 VDC at pin 4 of connector DM21312F, then repair the wiring between pin 4 of connector DM21312F and this circuit breaker:

(WDM 21-31-11)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	13	C21609	L FWD OFL VLV

- 7) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
- 8) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If there is 28 VDC at pin 4 of connectors DM21312D and DM21312F, then continue.
- (f) Re-connect connectors DM21312D and DM21312F.
- (4) Do this check of the wiring from the left air supply cabin pressure controller (ASCPC-L) to the forward outflow valve:
- (a) Remove the ASCPC-L, M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- (b) Disconnect connector DM21312F from the outflow valve, M21312.
- (c) Do a wiring check between these pins of connector DM36111AB at the E1-2 shelf and connector DM21312F (WDM 21-31-11):

DM36111AB	DM21312F
pin C7	pin 6
pin D7	pin 8
pin C5	pin 9
pin D5	pin 11

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21312F.
 - 4) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (5) Do this check of the wiring from the ASCPC-R to the forward outflow valve:
- (a) Remove the ASCPC-R, M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- (b) Disconnect connector DM21312D from the outflow valve, M21312.

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- (c) Do a wiring check between these pins of connector DM36112AB at the E2-2 shelf and connector DM21312D (WDM 21-31-12):

DM36112AB	DM21312D
pin C7	pin 6
pin D7	pin 8
pin C5	pin 9
pin D5	pin 11

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21312D.
 - 4) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (6) Examine the aft outflow valve doors, door seals, and frame for damage.
- (a) If damage is found, do these steps to replace the outflow valve:
- These are the tasks:
- Outflow Valve Assembly Removal, AMM TASK 21-31-03-000-806-001
- Outflow Valve Assembly Installation, AMM TASK 21-31-03-400-806-001
- Cabin Pressure Outflow Valve (CPOV) Assembly Removal, AMM TASK 21-31-03-000-812-002
- Cabin Pressure Outflow Valve (CPOV) Assembly Installation, AMM TASK 21-31-03-400-811-002

END OF TASK

818. Landing Altitude Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43370.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Pull the LDG ALT selector out.
 - (b) Turn the LDG ALT selector clockwise and then release.
 - (c) Turn the LDG ALT selector counterclockwise and then release.
 - (d) Push the LDG ALT selector in (normal position).
 - (e) If the MAT shows ACTIVE for the maintenance message while the selector is in any of the above positions, then do the Fault Isolation Procedure below.

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- (f) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in all of the above positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the landing altitude selector, M36113S9 (WDM 21-31-31).
- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Pull the LDG ALT selector out.
 - 2) Turn the LDG ALT selector clockwise and then release.
 - 3) Turn the LDG ALT selector counterclockwise and then release.
 - 4) Push the LDG ALT selector in (normal position).
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in each of the above positions, then you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message while the selector is in any of the above positions, then continue.
- (2) Do this check of the wiring from the landing altitude selector to the left overhead panel cardfile (OPCF-L):
- (a) Remove the bleed air/pressurization module, M36113, from the P5 panel, but do not disconnect its electrical connectors.
- (b) Disconnect connector M36113DS9 from the landing altitude selector, M36113S9.
- (c) Disconnect connector DM23117M from the OPCF-L, M23117.
- (d) Do a wiring check between these pins of connector M36113DS9 at pilot's overhead panel, P5, and connector DM23117M, at the maintenance panel, P61 (WDM 21-31-31):

M36113DS9	DM23117M
pin A1	pin B1
pin A2	pin B2
pin A4	pin B3
pin AC	pin B4
pin B1	pin B5
pin B2	pin B6
pin B4	pin B7
pin BC	pin B8

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connectors M36113DS9 and DM23117M.
 - 3) Re-install the bleed air/pressurization module.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Pull the LDG ALT selector out.
 - b) Turn the LDG ALT selector clockwise and then release.
 - c) Turn the LDG ALT selector counterclockwise and then release.
 - d) Push the LDG ALT selector in (normal position).

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- 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in each of the above positions, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connectors M23117DS9 and DM23117M.
- (h) Re-install the bleed air/pressurization module.
- (3) Replace the OPCF-L chassis, M23117 at the maintenance panel, P61.
These are the tasks:
Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Pull the LDG ALT selector out.
 - 2) Turn the LDG ALT selector clockwise and then release.
 - 3) Turn the LDG ALT selector counterclockwise and then release.
 - 4) Push the LDG ALT selector in (normal position).
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in each of the above positions, then you corrected the fault.

————— END OF TASK —————

819. Remote Cabin Pressure Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 31-84101.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the wiring between the remote cabin pressure sensor and the connectors for the AIMS IOM modules M003 and M004:
 - (a) Disconnect connector DM21311 from the remote cabin pressure sensor, M21311 (WDM 21-31-31).
 - (b) Remove the IOM(M003) module from the left AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (c) Remove the IOM(M004) module from the left AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (d) Do a wiring check between these pins of connector DM21311 at the remote cabin pressure sensor (below the P310 panel) and connectors J240B and J250B at the IOM modules (WDM 21-31-31) (SSM 31-41-05):

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DM21311	J240B
pin 6	pin D12
pin 7	pin C13

DM21311	J250B
pin 6	pin D12
pin 7	pin C13

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21311.
 - 3) Re-install the IOM(M003) module into the left AIMS cabinet. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) Re-install the IOM(M004) module into the left AIMS cabinet. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (f) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the IOM(M003) module in the left AIMS cabinet.
- These are the tasks:
- Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the IOM(M004) module in the left AIMS cabinet.
- These are the tasks:
- Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the remote cabin pressure sensor, M21311.
- These are the tasks:
- Remote Cabin Pressure Sensor Removal, AMM TASK 21-31-07-000-801,
Remote Cabin Pressure Sensor Installation, AMM TASK 21-31-07-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

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820. Remote Cabin Pressure Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 31-84102.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the wiring between the remote cabin pressure sensor and the connectors for the AIMS IOM modules M003 and M004:
 - (a) Disconnect connector DM21311 from the remote cabin pressure sensor, M21311 (WDM 21-31-31).
 - (b) Remove the IOM(M003) module from the right AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (c) Remove the IOM(M004) module from the right AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (d) Do a wiring check between these pins of connector DM21311 at the remote cabin pressure sensor (below the P310 panel) and connectors J240B and J250 at the IOM modules (WDM 21-31-31) (SSM 31-41-05):

DM21311	J240B
pin 6	pin D12
pin 7	pin C13

DM21311	J250B
pin 6	pin D12
pin 7	pin C13

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21311.
 - 3) Re-install the IOM(M003) module into the right AIMS cabinet. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) Re-install the IOM(M004) module into the right AIMS cabinet. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (f) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the IOM(M003) module in the right AIMS cabinet.
These are the tasks:
Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.



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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the IOM(M004) module in the right AIMS cabinet.

These are the tasks:

Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,

Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the remote cabin pressure sensor, M21311.

These are the tasks:

Remote Cabin Pressure Sensor Removal, AMM TASK 21-31-07-000-801,

Remote Cabin Pressure Sensor Installation, AMM TASK 21-31-07-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

821. Remote Cabin Pressure Sensor Problems - Fault Isolation

A. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

B. Fault Isolation Procedure

- (1) Do this check of the wiring between the remote cabin pressure sensor and the connectors for the IOM modules M003 and M004 in the left AIMS cabinet:
 - (a) Disconnect connector DM21311 from the remote cabin pressure sensor, M21311 (WDM 21-31-31).
 - (b) Remove the IOM(M003) module from the left AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (c) Remove the IOM(M004) module from the left AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (d) Do a wiring check between these pins of connector DM21311 at the remote cabin pressure sensor (below the P310 panel) and connectors J240B and J250B at the IOM modules (WDM 21-31-31)(SSM 31-41-05):

DM21311

pin 6 pin D12
pin 7 pin C13

J240B

pin D12
pin C13

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DM21311	J250B
pin 6	pin D12
pin 7	pin C13

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21311.
 - 3) Re-install the IOM(M003) module into the left AIMS cabinet. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) Re-install the IOM(M004) module into the left AIMS cabinet. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (f) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do this check of the wiring between the remote cabin pressure sensor and the connectors for the IOM modules M003 and M004 in the right AIMS cabinet:
 - (a) Disconnect connector DM21311 from the remote cabin pressure sensor, M21311 (WDM 21-31-31).
 - (b) Remove the IOM(M003) module from the right AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (c) Remove the IOM(M004) module from the right AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (d) Do a wiring check between these pins of connector DM21311 at the remote cabin pressure sensor (below the P310 panel) and connectors J240B and J250B at the IOM modules (WDM 21-31-31)(SSM 31-41-05):

DM21311	J240B
pin 6	pin D12
pin 7	pin C13

DM21311	J250B
pin 6	pin D12
pin 7	pin C13

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21311.
 - 3) Re-install the IOM(M003) module into the right AIMS cabinet. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) Re-install the IOM(M004) module into the right AIMS cabinet. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (f) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the remote cabin pressure sensor, M21311.

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These are the tasks:

Remote Cabin Pressure Sensor Removal, AMM TASK 21-31-07-000-801,

Remote Cabin Pressure Sensor Installation, AMM TASK 21-31-07-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

822. Indication Problems - Fault Isolation

A. **Fault Isolation Procedure**

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT for ATA 21 Cabin Pressure Control System, 36 Air Supply and Cabin Pressure Controller, and 45 AIMS Central Maintenance Computing System.
 - (a) If a maintenance message related to the cabin pressure control system, the ASCPC or communication problems with AIMS shows in existing faults, then do these steps:
 - (b) Find each maintenance message in the applicable FIM Maintenance Message Index.

NOTE: The most likely causes for an indication fault would be the ASCPC, communication problems between the ASCPC and AIMS and problems with IOM (input output modules in AIMS).
 - (c) Do the specified task for each maintenance message.
- (2) Make sure the upper EICAS display shows the applicable indication.

————— **END OF TASK** —————

823. Remote Cabin Pressure Sensor Problems - Fault Isolation

A. **Maintenance Messages**

- (1) This task is for maintenance message: 21-39071.

B. **Initial Evaluation**

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. **Fault Isolation Procedure**

- (1) Do this check of the wiring between the remote cabin pressure sensor, M21311 and the Signal Interface Unit (SIU) 2, M24513:
 - (a) Disconnect connector DM21311 from the remote cabin pressure sensor, M21311 (WDM 21-31-31).
 - (b) Disconnect connector DM24513A from the SIU, M24513 (WDM 21-31-31).
 - (c) Do a wiring check between these pins of connector DM21311 at the remote cabin pressure sensor (below the P310 panel) and connector DM24513A (WDM 21-31-31):

DM21311	DM24513A
pin 10	pin 87
pin 11	pin 86

- (d) If you find a problem with the wiring, then do these steps:

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- 1) Repair the wiring.
- 2) Re-connect connector DM21311 to the sensor.
- 3) Re-connect connector DM24513A to the SIU.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check for electrical power to the remote cabin pressure sensor.
 - (a) Disconnect connector DM21311 from the remote cabin pressure sensor, M21311 (WDM 21-31-31).
 - (b) Do a check for 28 VDC at pin 4 of connector DM21311 to structure ground (WDM 21-31-31).
 - (c) If there is not 28 VDC at pin 4 of connector DM21311, then do these steps:
 - 1) Disconnect connector D31012P from the P310 panel.
 - 2) Do a wiring check between these pins of connector D31012P at the P310 panel and connector DM21311 at the pressure sensor, M21311 (WDM 21-31-31):

D31012P	DM21311
pin 7	pin 4
pin 9	pin 8
- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connectors D31012P and DM21311.
 - c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If there is 28 VDC at pin 4 of connector DM21311, then do these steps:
 - 1) Re-connect connectors D31012P and DM21311, then continue.
- (3) Replace the remote cabin pressure sensor, M21311.

These are the tasks:

Remote Cabin Pressure Sensor Removal, AMM TASK 21-31-07-000-801,
Remote Cabin Pressure Sensor Installation, AMM TASK 21-31-07-400-801.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Do a check of the Signal Interface Unit 2, M24513.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

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824. Outflow Valve Control Unit (AFT) or ECU (R-AFT) Motor Control Circuit is Open or Shorted - Fault Isolation

NOTE: Spurious/nuisance EICAS status messages for “OUTFLOW VLV AFT” and “OUTFLOW VLV FWD” can occur if the Cabin Pressure Control System Pre-Flight BIT is interrupted. Refer to Boeing Maintenance Tip 777 MT 21-054.

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39082.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do these steps:
 - (a) To reset the maintenance message, do this step:
 - 1) Set the FWD and AFT outflow valve switches on the overhead panel, P5, to the MAN position and then to the AUTO position within 5 seconds.

NOTE: The manual reset function can take up to 10 seconds to reset the system and clear any messages. Multiple presses of the switches will delay the reset task from completing or cause the test to fail.
 - (b) If the maintenance message show on the ground test display, then do the Fault Isolation Procedure below.
 - (c) If the maintenance message becomes NOT ACTIVE, then continue.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then examine the aft outflow valve door seals and frame for damage.
 - (c) If damage is found, replace the outflow valve.

These are the tasks.

Outflow Valve Assembly Removal, AMM TASK 21-31-03-000-806-001

Outflow Valve Assembly Installation, AMM TASK 21-31-03-400-806-001

Cabin Pressure Outflow Valve (CPOV) Assembly Removal, AMM TASK 21-31-03-000-812-002

Cabin Pressure Outflow Valve (CPOV) Assembly Installation, AMM TASK 21-31-03-400-811-002
 - (d) If no damage is found, there was an intermittent fault.

C. Fault Isolation Procedure

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- (1) Replace the valve control unit (VCU) for the aft outflow valve, M21313M1.

These are the tasks:

Valve Control Unit (VCU) Removal, AMM TASK 21-31-03-000-807-001,

Valve Control Unit (VCU) Installation, AMM TASK 21-31-03-400-810-001.

 - (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.

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- (2) Replace the right electronic control unit (ECU) for the aft outflow valve, M21313M1.

These are the tasks:

Electronic Control Unit (ECU) Removal, AMM TASK 21-31-03-000-817-002,

Electronic Control Unit (ECU) Installation, AMM TASK 21-31-03-400-816-002.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (3) Do this check for voltage at the aft outflow valve:

- (a) Disconnect connectors DM21313D and DM21313F from the aft outflow valve, M21313M1.
- (b) Do a check for 28 VDC from pin 4 of connector DM21313D to structure ground (WDM 21-31-31).
- (c) Do a check for 28 VDC from pin 4 of connector DM21313F to structure ground (WDM 21-31-31).
 - 1) If you did not find 28 VDC at pin 4 of connector DM21313D, then repair the wiring between pin 4 of connector DM21313D and the circuit breaker:
(WDM 21-31-31)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	8	C21612	R AFT OFL VLV

- 2) If you did not find 28 VDC at pin 4 of connector DM21313F, then repair the wiring between pin 4 of connector DM21313F and this circuit breaker:
(WDM 21-31-31)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	C21611	L AFT OFL VLV

- 3) Re-connect connectors DM21313D and DM21313F.
- 4) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
- 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If there is 28 VDC at pin 4 of connectors DM21313D and DM21313F, then continue.
- (4) Do this check for path to ground for the aft outflow valve:

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- (a) Do a wiring check between pin 7 of connector DM21313D and the structure ground (WDM 21-31-31).
- (b) Do a wiring check between pin 7 of connector DM21313F and the structure ground (WDM 21-31-31).
 - 1) If you find a problem, then repair the wiring (WDM 21-31-31).
 - 2) Re-connect connectors DM21312D and DM21313F.
 - 3) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (c) If you do not find a problem with the wiring, then re-connect connectors DM21313D and DM21313F.
- (5) Do this check of the wiring from the left air supply cabin pressure controller (ASCPC-L) to the aft outflow valve:
 - (a) Remove the ASCPC-L, M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Disconnect connector DM21313F from the aft outflow valve, M21313M1.
 - (c) Do a wiring check between these pins of connector DM36111AB at the E1-2 shelf and connector DM21313F (WDM 21-31-11):

DM36111AB	DM21313F
pin A7	pin 6
pin B7	pin 8
pin C5	pin 9
pin D5	pin 11

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21313F.
 - 4) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the wiring from the ASCPC-R to the aft outflow valve:
 - (a) Remove the ASCPC-R, M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Disconnect connector DM21313D from the outflow valve, M21313M1.
 - (c) Do a wiring check between these pins of connector DM36112AB at the E2-2 shelf and connector DM21313D (WDM 21-31-12):

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DM36112AB

pin A7
pin B7
pin C5
pin D5

DM21313D

pin 6
pin 8
pin 9
pin 11

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21313D.
 - 4) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (7) Examine the aft outflow valve doors, door seals, and frame for damage.
- (a) If damage is found, do these steps to replace the outflow valve:
- These are the tasks:
- Outflow Valve Assembly Removal, AMM TASK 21-31-03-000-806-001
- Outflow Valve Assembly Installation, AMM TASK 21-31-03-400-806-001
- Cabin Pressure Outflow Valve (CPOV) Assembly Removal, AMM TASK 21-31-03-000-812-002
- Cabin Pressure Outflow Valve (CPOV) Assembly Installation, AMM TASK 21-31-03-400-811-002

END OF TASK

825. Outflow Valve Control Unit (FWD) or ECU (R-FWD) Motor Control Circuit is Open or Shorted - Fault Isolation

NOTE: Spurious/nuisance EICAS status messages for "OUTFLOW VLV AFT" and "OUTFLOW VLV FWD" can occur if the Cabin Pressure Control System Pre-Flight BIT is interrupted. Refer to Boeing Maintenance Tip 777 MT 21-054.

A. Maintenance Messages

- (1) This task is for maintenance message: 21-39092.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do these steps:
- (a) To reset the maintenance message, do this step:

- 1) Set the FWD and AFT outflow valve switches on the overhead panel, P5, to the MAN position and then to the AUTO position within 5 seconds.

NOTE: The manual reset function can take up to 10 seconds to reset the system and clear any messages. Multiple presses of the switches will delay the reset task from completing or cause the test to fail.

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- (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (c) If the maintenance message becomes NOT ACTIVE, then continue.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then examine the forward outflow valve door seals and frame for damage.
 - (c) If damage is found, replace the forward outflow valve.

These are the tasks:

Outflow Valve Assembly Removal, AMM TASK 21-31-03-000-806-001

Outflow Valve Assembly Installation, AMM TASK 21-31-03-400-806-001

Cabin Pressure Outflow Valve (CPOV) Assembly Removal, AMM TASK 21-31-03-000-812-002

Cabin Pressure Outflow Valve (CPOV) Assembly Installation, AMM TASK 21-31-03-400-811-002.
 - (d) If no damage is found, there was an intermittent fault.

C. Fault Isolation Procedure

ARO ALL; AIRPLANES WITH OUTFLOW VALVE P/N 2214420

- (1) Replace the valve control unit (VCU) for the forward outflow valve, M21312M1.

These are the tasks:

Valve Controller Assembly (VCA) Removal, AMM TASK 21-31-03-000-813-002,

Valve Controller Assembly (VCA) Installation, AMM TASK 21-31-03-400-812-002.

 - (a) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.

ARO ALL; AIRPLANES WITH OUTFLOW VALVE P/N 2119160

- (2) Replace the right electronic control unit (ECU) for the forward outflow valve, M21312M1.

These are the tasks:

Electronic Control Unit (ECU) Removal, AMM TASK 21-31-03-000-817-002,

Electronic Control Unit (ECU) Installation, AMM TASK 21-31-03-400-816-002.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (3) Do this check for voltage at the forward outflow valve:
 - (a) Disconnect connectors DM21312D and DM21312F from the outflow valve, M21312.

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- (b) Do a check for 28 VDC from pin 4 of connector DM21312D to structure ground (WDM 21-31-31).
- (c) Do a check for 28 VDC from pin 4 of connector DM21312F to structure ground (WDM 21-31-31).
 - 1) If you did not find 28 VDC at pin 4 of connector DM21312D, then repair the wiring between pin 4 of connector DM21312D and the circuit breaker:

(WDM 21-31-31)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	7	C21610	R FWD OFL VLV

- 2) If you did not find 28 VDC at pin 4 of connector DM21312F, then repair the wiring between pin 4 of connector DM21312F and the circuit breaker:

(WDM 21-31-31)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	13	C21609	L FWD OFL VLV

- 3) Re-connect connectors DM21312D and DM21312F.
 - 4) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If there is 28 VDC at pin 4 of connectors DM21312D and DM21312F, then continue.
- (4) Do this check for path to ground for the forward outflow valve:
- (a) Do a wiring check between pin 7 of connector DM21312D and the structure ground (WDM 21-31-31).
 - (b) Do a wiring check between pin 7 of connector DM21312F and the structure ground (WDM 21-31-31).
 - 1) If you find a problem, then repair the wiring (WDM 21-31-31).
 - 2) Re-connect connectors DM21312D and DM21312F.
 - 3) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If you do not find a problem with the wiring, then re-connect connectors DM21312D and DM21312F and continue.
- (5) Do this check of the wiring from the left air supply cabin pressure controller (ASCPC-L) to the forward outflow valve:
- (a) Remove the ASCPC-L, M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Disconnect connector DM21312F from the outflow valve, M21312.
 - (c) Do a wiring check between these pins of connector DM36111AB at the E2-2 shelf and connector DM21312F (WDM 21-31-11):

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DM36111AB	DM21312F
pin C7	pin 6
pin D7	pin 8
pin C5	pin 9
pin D5	pin 11

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21312F.
 - 4) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the wiring from the ASCPC-R to the forward outflow valve:
- (a) Remove the ASCPC-R, M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Disconnect connector DM21312D from the outflow valve, M21312.
 - (c) Do a wiring check between these pins of connector DM36112AB at the E1-2 shelf and connector DM21312D (WDM 21-31-12):

DM36112AB	DM21312D
pin C7	pin 6
pin D7	pin 8
pin C5	pin 9
pin D5	pin 11

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Re-connect connector DM21312D.
 - 4) Do this ground test on the MAT: 21 Cabin Pressure Control System, System Test, Left and Right Cabin Pressure Control System.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (7) Examine the aft outflow valve doors, door seals, and frame for damage.
- (a) If damage is found, do these steps to replace the outflow valve:
These are the tasks:
Outflow Valve Assembly Removal, AMM TASK 21-31-03-000-806-001
Outflow Valve Assembly Installation, AMM TASK 21-31-03-400-806-001

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Cabin Pressure Outflow Valve (CPOV) Assembly Removal, AMM
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Cabin Pressure Outflow Valve (CPOV) Assembly Installation, AMM
TASK 21-31-03-400-811-002

———— **END OF TASK** ————

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806. Flight Crew Rest (FCR) Heater Problems - Fault Isolation

A. General

- (1) The FCR heater, B21411, is located in the FCR air supply duct above the FCR module. Access to the heater is through a ceiling panel in front of the FCR.
- (2) The heater control, R21411, is used to operate the heater. The heater control is located on the aft wall of the lower berth.
- (3) The FCR heater can operate when one of the two cooling packs is on.
- (4) The FCR heater is cycled on and off at a fixed rate when the heater control is moved away from the OFF position. The heater control position determines how long the heater is on during each cycle.

B. Initial Evaluation

- (1) Make sure that the left utility bus has power.
NOTE: The FCR heater receives power from the left utility bus.
- (2) Supply conditioned air to the FCR, do this task: Supply Conditioned Air to the Airplane, AMM TASK 21-00-00-800-801.
NOTE: Conditioned air must be supplied to the FCR from one of the two cooling packs to operate the heater.
- (3) Put the FLT DECK TEMP switch on the P5 forward overhead panel in the C (cold) position.
NOTE: The conditioned air for the FCR is supplied from the same duct that supplies the flight deck. The temperature of the conditioned air supplied to the FCR is controlled by the FLT DECK TEMP switch.
- (4) Do these steps to operate the FCR heater:
 - (a) Turn the MODULE HEATER knob to the HIGH position.
 - (b) Feel the airflow from the FCR air outlets.
 - (c) Turn the MODULE HEATER knob to the OFF position.
 - (d) Feel the airflow from the FCR air outlets.
 - (e) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then there was an intermittent fault.
 - (f) If the airflow is cool when the knob is in the HIGH position, then do this procedure below: Fault Isolation Procedure - No Heat.
 - (g) If the airflow becomes warmer when the knob is in the HIGH position but is not fully warm, then do this procedure below: Fault Isolation Procedure - Partial Heat.
 - (h) If the airflow does not become cool when the knob is in the OFF position, then do this procedure below: Fault Isolation Procedure - Continuous Heat.

C. Fault Isolation Procedure - No Heat

- (1) Make sure that this circuit breaker is closed:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	18	C21693	DR 1 CREW REST CTRL/SMK DET PWR

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- (2) Look at this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C21326	DR 1 CREW REST HTR PWR

- (3) If the circuit breaker is open, then do these steps:

- (a) Remove the power from the FCR wiring:

Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C21326	DR 1 CREW REST HTR PWR

- (b) Disconnect connector DK21013 from the FCR heater relay.
(c) Disconnect connector DB21411 from the FCR heater.
(d) Do a wiring check between these pins of connector DK21013 at the FCR heater relay and this circuit breaker:

(WDM 21-41-21)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C21326	DR 1 CREW REST HTR PWR

DK21013	CB21326
pin A2	pin A2
pin B2	pin B2
pin C2	pin C2

- (e) Do a wiring check between these pins of connector DK21013 at the FCR heater relay and connector DB21411 at the FCR heater (WDM 21-41-21):

DK21013	DB21411
pin A1	pin 4
pin B1	pin 7
pin C1	pin 10

- (f) If you find a problem with the wiring, then repair the wiring.
(g) Reconnect connector DK21013 to the FCR heater relay.
(h) Reconnect connector DB21411 to the FCR heater.
(i) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C21326	DR 1 CREW REST HTR PWR

- (j) Turn the MODULE HEATER knob to the HIGH position.
(k) Feel the airflow from the FCR air outlets.
(l) Turn the MODULE HEATER knob to the OFF position.

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- (m) Feel the airflow from the FCR air outlets.
- (n) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
- (o) If the airflow is cool when the knob is in the HIGH position, then continue.
- (p) Look at this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C21326	DR 1 CREW REST HTR PWR

- (q) If the circuit breaker is open, then do these steps:
 - 1) Replace the FCR heater.
These are the tasks:
Flight Crew Rest (FCR) Heater Removal, AMM TASK 21-41-03-000-801,
Flight Crew Rest (FCR) Heater Installation, AMM TASK 21-41-03-400-801.
 - 2) Turn the MODULE HEATER knob to the HIGH position.
 - 3) Feel the airflow from the FCR air outlets.
 - 4) Turn the MODULE HEATER knob to the OFF position.
 - 5) Feel the airflow from the FCR air outlets.
 - 6) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
 - 7) If the airflow is cool when the knob is in the HIGH position, then continue.
- (r) Look at this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C21326	DR 1 CREW REST HTR PWR

- (s) If the circuit breaker is open, then do these steps:
 - 1) Replace this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C21326	DR 1 CREW REST HTR PWR

- 2) Make sure the circuit breaker is closed.
 - 3) Turn the MODULE HEATER knob to the HIGH position.
 - 4) Feel the airflow from the FCR air outlets.
 - 5) Turn the MODULE HEATER knob to the OFF position.
 - 6) Feel the airflow from the FCR air outlets.
 - 7) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
 - 8) If the airflow is cool when the knob is in the HIGH position, then continue.
- (4) If the circuit breaker is closed, then do these steps:
 - (a) Replace the FCR heater.

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These are the tasks:

Flight Crew Rest (FCR) Heater Removal, AMM TASK 21-41-03-000-801,
Flight Crew Rest (FCR) Heater Installation, AMM TASK 21-41-03-400-801.

- (b) Turn the MODULE HEATER knob to the HIGH position.
- (c) Feel the airflow from the FCR air outlets.
- (d) Turn the MODULE HEATER knob to the OFF position.
- (e) Feel the airflow from the FCR air outlets.
- (f) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
- (g) If the airflow is cool when the knob is in the HIGH position, then continue.
- (5) Do these steps to do a check for 115 VAC power at the FCR heater:
 - (a) Disconnect connector DB21411 from the FCR heater.
 - (b) Do a check for 115 VAC between these pins of connector DB21411 (WDM 21-41-21):

DB21411	DB21411
pin 7	pin 4
pin 10	pin 4
pin 10	pin 7

- (6) If you find 115 VAC, then do these steps:
 - (a) Do a check of the wiring between pin 2 of DB21411 and structure ground (WDM 21-41-21).
 - (b) If you find a problem with the wiring, then repair the wiring.
 - (c) If you do not find a problem with the wiring, then replace the FCR heater control.

These are the tasks:

Flight Crew Rest (FCR) Heater Control Removal, AMM TASK 21-41-04-000-801,
Flight Crew Rest (FCR) Heater Control Installation, AMM TASK 21-41-04-400-801.

- (d) Reconnect connector DB21411 to the FCR heater.
- (e) Turn the MODULE HEATER knob to the HIGH position.
- (f) Feel the airflow from the FCR air outlets.
- (g) Turn the MODULE HEATER knob to the OFF position.
- (h) Feel the airflow from the FCR air outlets.
- (i) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
- (j) If the airflow is cool when the knob is in the HIGH position, then continue.
- (k) Disconnect connector DB21411 from the FCR heater.
- (l) Disconnect connector DR21411 from the FCR heater control.
- (m) Do a wiring check between these pins of connector DB21411 at the FCR heater and connector DR21411 at the FCR heater control (WDM 21-41-21):

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DB21411	DR21411
pin 9	pin 1
pin 11	pin 9
pin 12	pin 3

- (n) Do a wiring check between these pins of connector DR21411 at the FCR heater control (WDM 21-41-21).

DR21411	DR21411
pin 2	pin 10

- (o) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Reconnect connector DB21411 to the FCR heater.
 - 3) Reconnect connector DR21411 to the FCR heater control.
 - 4) Turn the MODULE HEATER knob to the HIGH position.
 - 5) Feel the airflow from the FCR air outlets.
 - 6) Turn the MODULE HEATER knob to the OFF position.
 - 7) Feel the airflow from the FCR air outlets.
 - 8) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
- (7) If you do not find 115 VAC, then do these steps:
- (a) Replace the FCR heater relay, K21013 (WDM 21-41-21).
 - (b) Reconnect connector DB21411 to the FCR heater.
 - (c) Turn the MODULE HEATER knob to the HIGH position.
 - (d) Feel the airflow from the FCR air outlets.
 - (e) Turn the MODULE HEATER knob to the OFF position.
 - (f) Feel the airflow from the FCR air outlets.
 - (g) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
 - (h) If the airflow is cool when the knob is in the HIGH position, then continue.
 - (i) Remove power from the FCR heater wiring.
Open this circuit breaker and install safety tag:
Left Power Management Panel, P110

Row	Col	Number	Name
C	5	C21326	DR 1 CREW REST HTR PWR
 - (j) Disconnect connector DK21013 from the FCR heater relay.
 - (k) Disconnect connector DB21411 from the FCR heater.
 - (l) Do a wiring check between these pins of connector DK21013 at the FCR heater relay and this circuit breaker:
(WDM 21-41-21)

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Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C21326	DR 1 CREW REST HTR PWR

DK21013	CB21326
pin A2	pin A2
pin B2	pin B2
pin C2	pin C2

- (m) Do a wiring check between these pins of connector DK21013 at the FCR heater relay and connector DB21411 at the FCR heater (WDM 21-41-21):

DK21013	DB21411
pin A1	pin 4
pin B1	pin 7
pin C1	pin 10

- (n) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Reconnect connector DK21013 to the FCR heater relay.
 - 3) Reconnect connector DB21411 to the FCR heater.
 - 4) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C21326	DR 1 CREW REST HTR PWR

- 5) Turn the MODULE HEATER knob to the HIGH position.
 - 6) Feel the airflow from the FCR air outlets.
 - 7) Turn the MODULE HEATER knob to the OFF position.
 - 8) Feel the airflow from the FCR air outlets.
 - 9) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
 - 10) If the airflow is cool when the knob is in the HIGH position, then continue.
- (o) Disconnect connector DK21013 from the FCR heater relay (WDM 21-41-21).
- (p) Do a check for 28 VDC at pin X1 of connector DK21013.
- (q) If you find 28 VDC, then do these steps:
- 1) Disconnect connector DM24505B at the P110 panel.
 - 2) Do a check of the wiring between these pins of connector DK21013 at the FCR heater relay and connector DM24505B at the P110 panel (WDM 21-41-21).

DK21013	DM24505B
pin X2	pin 20

- 3) If you find a problem with the wiring, then repair the wiring.

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- 4) If you do not find a problem with the wiring, then replace the I/O card, M24505, in the P110 panel.
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - 5) Reconnect connector DM24505B at the P110 panel.
 - 6) Reconnect connector DK21013 to the FCR heater relay.
 - 7) Turn the MODULE HEATER knob to the HIGH position.
 - 8) Feel the airflow from the FCR air outlets.
 - 9) Turn the MODULE HEATER knob to the OFF position.
 - 10) Feel the airflow from the FCR air outlets.
 - 11) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
- (r) If you do not find 28 VDC, then do these steps:
- (s) Do a wiring check between these pins of connector DK21013 at the FCR heater relay and this circuit breaker:
- (WDM 21-41-21)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	18	C21693	DR 1 CREW REST CTRL/SMK DET PWR

DK21013 DB21693

pin X1 pin 2

- 1) If you find a problem with the wiring, then repair the wiring.
- 2) If you do not find a problem with the wiring, then replace this circuit breaker:
(WDM 21-41-21)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	18	C21693	DR 1 CREW REST CTRL/SMK DET PWR

- 3) Reconnect connector DK21013 to the FCR heater relay (WDM 21-41-21).
- 4) Turn the MODULE HEATER knob to the HIGH position.
- 5) Feel the airflow from the FCR air outlets.
- 6) Turn the MODULE HEATER knob to the OFF position.
- 7) Feel the airflow from the FCR air outlets.
- 8) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.

D. Fault Isolation Procedure - Partial Heat

- (1) Replace the FCR heater.

These are the tasks:

Flight Crew Rest (FCR) Heater Removal, AMM TASK 21-41-03-000-801.

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Flight Crew Rest (FCR) Heater Installation, AMM TASK 21-41-03-400-801.

- (a) Turn the MODULE HEATER knob to the HIGH position.
 - (b) Feel the airflow from the FCR air outlets.
 - (c) Turn the MODULE HEATER knob to the OFF position.
 - (d) Feel the airflow from the FCR air outlets.
 - (e) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
 - (f) If the airflow becomes warmer when the knob is in the HIGH position but is not fully warm, then continue.
- (2) Do these steps to isolate a fault in the wiring or in the heater control.
- (a) Disconnect connector DB21411 from the FCR heater.
 - (b) Do a check for 115 VAC between these pins of connector DB21411:

DB21411		DB21411	
pin 7	.....	pin 4	
pin 10	.....	pin 4	
pin 10	.....	pin 7	

- (c) If you do not find 115 VAC between each pair of pins, then do these steps:
- 1) Remove power from the FCR wiring.
Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
C	5	C21326	DR 1 CREW REST HTR PWR

- 2) Disconnect connector DK21013 from the FCR heater relay.
- 3) Do a wiring check between these pins of connector DK21013 at the FCR heater relay and this circuit breaker:

(WDM 21-41-21)

Left Power Management Panel, P110

Row	Col	Number	Name
C	5	C21326	DR 1 CREW REST HTR PWR

DK21013		CB21326	
pin A2	.....	pin A2	
pin B2	.....	pin B2	
pin C2	.....	pin C2	

- 4) Do a wiring check between these pins of connector DK21013 at the FCR heater relay and connector DB21411 at the FCR heater (WDM 21-41-21):

DK21013		DB21411	
pin A1		pin 4	
pin B1		pin 7	
pin C1		pin 10	

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- 5) If you find a problem with the wiring, then repair the wiring.
- 6) If you do not find a problem with the wiring, then replace the heater relay, K21013.
- 7) Reconnect connector DK21013 to the FCR heater relay.
- 8) Reconnect connector DB21411 to the FCR heater.
- 9) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C21326	DR 1 CREW REST HTR PWR

- 10) Turn the MODULE HEATER knob to the HIGH position.
 - 11) Feel the airflow from the FCR air outlets.
 - 12) Turn the MODULE HEATER knob to the OFF position.
 - 13) Feel the airflow from the FCR air outlets.
 - 14) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
- (d) If you find 115 VAC between each pair of pins, then do these steps:
- 1) Replace the FCR heater control.
These are the tasks:
Flight Crew Rest (FCR) Heater Control Removal, AMM TASK 21-41-04-000-801,
Flight Crew Rest (FCR) Heater Control Installation, AMM TASK 21-41-04-400-801.
 - 2) Turn the MODULE HEATER knob to the HIGH position.
 - 3) Feel the airflow from the FCR air outlets.
 - 4) Turn the MODULE HEATER knob to the OFF position.
 - 5) Feel the airflow from the FCR air outlets.
 - 6) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.

E. Fault Isolation Procedure - Continuous Heat

- (1) Replace the FCR heater.

These are the tasks:

Flight Crew Rest (FCR) Heater Removal, AMM TASK 21-41-03-000-801,
Flight Crew Rest (FCR) Heater Installation, AMM TASK 21-41-03-400-801.

- (a) Turn the MODULE HEATER knob to the HIGH position.
 - (b) Feel the airflow from the FCR air outlets.
 - (c) Turn the MODULE HEATER knob to the OFF position.
 - (d) Feel the airflow from the FCR air outlets.
 - (e) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.
 - (f) If the airflow does not become cool when the knob is in the OFF position, then continue.
- (2) Do these steps to isolate a fault in the heater control.
 - (a) Disconnect connector DB21411 from the FCR heater.
 - (b) Disconnect connector DR21411 from the FCR heater control.

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- (c) Do a wiring check of these pins between connector DB21411 at the FCR heater and connector DR21411 at the FCR heater control (WDM 21-41-21):

DB21411	DR21411
pin 9	pin 1
pin 11	pin 9
pin 12	pin 3

- (d) Do a wiring check between these pins of connector DR21411 at the FCR heater control (WDM 21-41-21).

DR21411	DR21411
pin 2	pin 10

- (e) If you find a problem with the wiring, then repair the wiring.
- (f) If you do not find a problem with the wiring, then replace the FCR heater control.
- These are the tasks:
- Flight Crew Rest (FCR) Heater Control Removal, AMM TASK 21-41-04-000-801,
Flight Crew Rest (FCR) Heater Control Installation, AMM TASK 21-41-04-400-801.
- (g) Reconnect connector DB21411 to the FCR heater.
- (h) Reconnect connector DR21411 to the FCR heater control.
- (i) Turn the MODULE HEATER knob to the HIGH position.
- (j) Feel the airflow from the FCR air outlets.
- (k) Turn the MODULE HEATER knob to the OFF position.
- (l) Feel the airflow from the FCR air outlets.
- (m) If the airflow is warm when the knob is in the HIGH position and cool when the knob is in the OFF position, then you corrected the fault.

———— **END OF TASK** ————

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803. Fwd Cargo Compartment Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12013.

B. Initial Evaluation

NOTE: If this message is displayed and is not associated with an ECS CARD L or ECS CARD R status message (with associated CMC messages 21-18891 or 21-18892, respectively) then ignore this nuisance message.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the forward cargo compartment temperature sensor, M21431:
 - (a) Disconnect connector DM21431 from the forward cargo compartment temperature sensor, M21431.
 - (b) Measure the resistance between pins 1 and 2 of the connector on the temperature sensor (WDM 21-43-11).
 - (c) If the resistance is not 1K-1000K ohms between pins 1 and 2, then do these steps:
 - 1) Replace the temperature sensor, M21431.
These are the tasks:
Forward Cargo Temperature Sensor Removal, AMM TASK 21-43-02-000-801,
Forward Cargo Temperature Sensor Installation, AMM TASK 21-43-02-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K between pins 1 and 2, then do these steps:
 - 1) Remove the right ECS Miscellaneous Card (ECSCMC), A14, from the Right Systems Cardfile, P84. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
 - 2) Do a wiring check between these pins of connector XA14 in the Right Systems Cardfile, P84, and connector DM21431 at the temperature sensor, M21431 (WDM 21-43-11).
- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reconnect connector DM21431 to the temperature sensor, M21431.
 - c) Reinstall the right ECSCMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If you do not find a problem with the wiring, then continue.

XA14	DM21431
pin 45	pin 1
pin 44	pin 2

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- (2) Replace the right ECSMC, A14.

These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

————— **END OF TASK** —————

804. Forward Cargo Heater Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13054.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message 21-13053, then do the Fault Isolation Procedure for that task before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do these steps to do a check for electrical power to the heater:
- (a) Disconnect connector DB21430 from the forward cargo heater.
- (b) Do a check for 3-phase 115/208 VAC between these pins of connector DB21430 (WDM 21-43-11):

DB21430	DB21430
pin 1	pin 2
pin 1	pin 3
pin 2	pin 3

- (c) If you do find 115/208 VAC between pins 1, 2, and 3 of DB21430, then do these steps:
- 1) Replace the heater, B21430. To replace the heater,
- These are the tasks:
- Forward Cargo Heater Removal, AMM TASK 21-43-01-000-801,
- Forward Cargo Heater Installation, AMM TASK 21-43-01-400-801.
- 2) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
- 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If you do not find 115/208 VAC between pins 1, 2, and 3 of DB21430, then do the steps that follow:

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- 1) Repair the wiring between the connector DK21430 and the connector DB21430 (WDM 21-43-11).
 - 2) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (2) Do a check of the path to ground for the heater:
- (a) Disconnect connector DB21430 from the forward cargo heater.
 - (b) Do a continuity check between pin 4 and the structure ground.
 - (c) If there is not continuity between the pin 4 and the structure ground, do these steps:
 - 1) Repair the wiring (WDM 21-41-31).
 - 2) Re-connect the connector DB21430 to the heater.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If there is continuity between the pin 4 and the structure ground, then continue.
- (3) Replace the Current Monitor Card, M24024, in the P210 panel.
- These are the tasks:
- Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— END OF TASK —————

805. Relay (FWD CARGO HEAT) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13053.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
 - (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (c) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the forward cargo heater relay, K21430, in the P210 panel (WDM 21-43-11).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the Current Monitor Card, M24024, in the P210 panel.

These are the tasks:

Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
 - (b) Follow the instructions on the MAT to complete the ground test.
 - (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the internal wiring in the P210 forward cargo heater relay circuit (WDM 21-43-11).

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- (a) Do a check of the wiring between electrical connector DK21430 and this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	24	C21329	FWD CARGO HTR

- (b) Do a check of the wiring between electrical connector DK21430 and this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	11	C21697	FWD CARGO HTR CTRL

- (c) Do a check of the wiring between pin C1 of electrical connector DK21430 and pin 75 electrical connector DM24509A.
- (d) Do a check of the wiring between pin X2 of electrical connector DK21430 and pin 17 electrical connector DM24509B.
- (e) Do a check of the wiring between pin A1 of electrical connector DK21430 and pin 95 electrical connector DM24509C.
- (f) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, SYSTEM TEST, Forward Cargo Heat.
 - 3) Follow the instructions on the MAT to complete the ground test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

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801. Aft Cargo Compartment Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12011.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the aft cargo compartment temperature sensor, M21441:
 - (a) Disconnect connector DM21441 from the aft cargo compartment temperature sensor, M21441.
 - (b) Measure the resistance between pins 1 and 2 of the connector on the temperature sensor (WDM 21-44-11).
 - (c) If the resistance is not 1K-1000K ohms between pins 1 and 2, then do these steps:
 - 1) Replace the temperature sensor, M21441.
These are the tasks:
Aft Cargo Compartment Temperature Sensor Removal, AMM TASK 21-44-05-000-801,
Aft Cargo Compartment Temperature Sensor Installation, AMM TASK 21-44-05-400-801.
 - (d) If the resistance is 1K-1000K between pins 1 and 2, then do these steps:
 - 1) Remove the left ECS Miscellaneous Card (ECSCMC), A14, from the Left Systems Cardfile, P85. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
 - 2) Do a wiring check between these pins of connector XA14 in the Left Systems Cardfile, P85, and connector DM21441 at the temperature sensor, M21441 (WDM 21-44-11).

XA14	DM21441
pin 51	pin 1
pin 50	pin 2
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21441 to the temperature sensor, M21441.
 - c) Re-install the left ECSCMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 4) If you do not find a problem with the wiring, then continue.
 - (2) Replace the left ECSCMC, A14.

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These are the tasks:

ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,

ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

802. Cargo Heat Shutoff Valve (Aft) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12021.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the aft cargo heat shutoff valve, V21441.

These are the tasks:

Aft Cargo Heat Shutoff Valve and Temperature Control Valve Removal, AMM TASK 21-44-01-000-801,

Aft Cargo Heat Shutoff Valve and Temperature Control Valve Installation, AMM TASK 21-44-01-000-802.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the aft cargo overheat switch, S21293.

These are the tasks:

Aft Cargo Compartment Overheat Switch Removal, AMM TASK 21-44-10-000-801,

Aft Cargo Compartment Overheat Switch Installation, AMM TASK 21-44-10-400-801.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Disconnect connector DV21441 from the shutoff valve, V21441 (WDM 21-44-11).
 - (4) Do a check for 28 VDC between pin 12 of connector DV21441 and structure ground (WDM 21-44-11).

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- (5) If there is 28 VDC between pin 12 of connector DV21441 and structure ground, then do these steps:
- (a) Disconnect connector DK21459 from the aft cargo overheat relay, K21459 (WDM 21-44-11).
 - (b) Do a wiring check between pin A3 of connector DK21459, in the P39 panel and pin 5 of connector DV21441 (WDM 21-44-11).
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If you do not find a problem with the wiring, then continue.
 - (e) Replace the aft cargo overheat relay, K21459, in the P39 panel (WDM 21-44-11).
 - 1) Re-connect connector DV21441 to the shutoff valve, V21441.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
 - a) Disconnect connector DV21441 from the shutoff valve, V21441 (WDM 21-44-11).
 - (f) Do a continuity check between pin 6 of connector DV21441 and structure ground (WDM 21-44-11).
 - (g) Do a continuity check between pin 11 of connector DV21441 and structure ground (WDM 21-44-11).
 - (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (i) If you do not find a problem with the wiring, then continue.
 - (j) Remove the left ECS Miscellaneous Card (ECSCMC), A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
 - (k) Do a wiring check between these pins of connector XA14 at the Left Systems Cardfile, P85, and the connector at the shutoff valve, V21441 (WDM 21-44-11):

XA14	DV21441
pin 74	pin 10
pin 77	pin 9

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- (l) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV21441.
 - 3) Re-install the left ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Aft Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (m) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DV21441.
 - 2) Install a new left ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (6) If there is not 28 VDC between pins 12 of connector DV21441 and structure ground, then do these steps:
 - (a) Repair the wiring between circuit breaker C21615 on the Left Power Management Panel, P110, and pin 12 of connector DV21441 (WDM 21-44-11).
 - 1) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

804. Cargo Heat Temperature Control Valve (Aft) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12031.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the aft cargo heat temperature control valve, V21442.

These are the tasks:

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Aft Cargo Heat Shutoff Valve and Temperature Control Valve Removal, AMM TASK 21-44-01-000-801,

Aft Cargo Heat Shutoff Valve and Temperature Control Valve Installation, AMM TASK 21-44-01-000-802.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the aft cargo overheat switch, S21293.
- These are the tasks:
- Aft Cargo Compartment Overheat Switch Removal, AMM TASK 21-44-10-000-801,
Aft Cargo Compartment Overheat Switch Installation, AMM TASK 21-44-10-400-801.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Disconnect connector DV21442 from the temperature control valve, V21442 (WDM 21-44-11):
- (4) Do a check for 28 VDC between pin 12 of connector DV21442 and structure ground (WDM 21-44-11).
- (5) If there is 28 VDC between pin 12 of connector DV21442 and structure ground, then do these steps:
- (a) Disconnect connector DK21459 from the aft cargo overheat relay, K21459 (WDM 21-44-11).
 - (b) Do a wiring check between pin B3 of connector DK21459, in the P39 panel and pin 5 of connector DV21442 (WDM 21-44-11).
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If you do not find a problem with the wiring, then continue.
 - (e) Replace the aft cargo overheat relay, K21459, in the P39 panel (WDM 21-44-11).
 - 1) Re-connect connector DV21444 to the temperature control valve, V21444.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.

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- a) Disconnect connector DV21441 from the shutoff valve, V21441 (WDM 21-44-11).
- (f) Do a continuity check between pin 6 of connector DV21442 and structure ground (WDM 21-44-11).
- (g) Do a continuity check between pin 11 of connector DV21442 and structure ground (WDM 21-44-11).
- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (i) If you do not find a problem with the wiring, then continue.
- (j) Remove the left ECS Miscellaneous Card (ECSCMC), A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
- (k) Do a wiring check between these pins of connector XA14 at the Left Systems Cardfile, P85, and the connector at the temperature control valve, V21442 (WDM 21-44-11):

XA14	DV21442
pin 68	pin 10
pin 71	pin 9
- (l) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV21442.
 - 3) Re-install the left ECSCMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (m) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DV21442.
 - 2) Install a new left ECSCMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (6) If there is not 28 VDC between pin 12 of connector DV21442 and structure ground, then do these steps:
 - (a) Repair the wiring between circuit breaker C21619 on the Left Power Management Panel, P110, and pin 12 of connector DV21442 (WDM 21-44-11).

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- 1) Do this ground test on the MAT: 21 Environmental Control System, System Test, Equipment Cooling System.
- 2) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

806. Aft Cargo Temperature Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43180.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the AFT CARGO TEMP selector first to OFF, then to LOW, and then to HIGH.
 - (b) If the MAT shows ACTIVE for the maintenance message while the selector is in the OFF, LOW or HIGH position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in the OFF, LOW and HIGH positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the aft cargo temperature selector, M21016S1.
These are the tasks:
Aft Cargo Heat Temperature Selector Removal, AMM TASK 21-44-07-000-801,
Aft Cargo Heat Temperature Selector Installation, AMM TASK 21-44-07-400-801.
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the AFT CARGO TEMP selector first to OFF, then to LOW, and then to HIGH.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the OFF, LOW and HIGH positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the selector is in the OFF, LOW or HIGH position, then continue.
- (2) Do this check of the wiring from the aft cargo temperature selector to the right overhead panel cardfile:
 - (a) Remove the cargo temp select module, M21016 (WDM 21-44-11).
 - (b) Disconnect connector M21016DS1 from the aft cargo temperature selector.
 - (c) Disconnect connector DM23217N from the right overhead card file, M23217.
 - (d) Do a wiring check between these pins of connector M21016DS1 and connector DM23217N, at the maintenance panel, P61 (WDM 21-44-11):

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M21016DS1

pin K
pin J
pin H
pin G

DM23217N

pin A4
pin A1
pin A2
pin A3

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector M21016DS1.
 - 3) Re-connect connector DM23217N.
 - 4) Re-install the cargo temp select module, M21016.
 - 5) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the AFT CARGO TEMP selector first to OFF, then to LOW, and then to HIGH.
 - 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the OFF, LOW and HIGH positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M21016DS1 to the aft cargo temperature selector, M21016S1.
- (h) Re-install the cargo temp select module, M21016.
- (3) Replace the right overhead panel card file chassis, M23217 at the maintenance panel, P61.
- These are the tasks:
- Overhead Panel Interface Card (OPIC) Removal, AMM TASK 23-93-02-000-801,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Set the AFT CARGO TEMP selector first to OFF, then to LOW, and then to HIGH.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the OFF, LOW and HIGH positions, you corrected the fault.

————— **END OF TASK** —————

807. Bulk Cargo Temperature Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43190.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the BULK CARGO TEMP selector first to OFF, then to LOW, and then to HIGH.
 - (b) If the MAT shows ACTIVE for the maintenance message while the selector is in the OFF, LOW or HIGH position, then do the Fault Isolation Procedure below.

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- (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in the OFF, LOW and HIGH positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the bulk cargo temperature selector, M21016S2.

These are the tasks:

Bulk Cargo Heat Temperature Selector Removal, AMM TASK 21-44-08-000-801,
Bulk Cargo Heat Temperature Selector Installation, AMM TASK 21-44-08-400-801.

- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Set the BULK CARGO TEMP selector first to OFF, then to LOW, and then to HIGH.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the OFF, LOW and HIGH positions, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message while the selector is in the OFF, LOW or HIGH position, then continue.
- (2) Do this check of the wiring from the bulk cargo temperature selector to the right overhead panel cardfile:
- (a) Remove the cargo temp select module, M21016 (WDM 21-44-21).
 - (b) Disconnect connector M21016DS2 from the bulk cargo temperature selector.
 - (c) Disconnect connector DM23217N from the right overhead card file, M23217.
 - (d) Do a wiring check between these pins of connector M21016DS2 and connector DM23217N, at the maintenance panel, P61 (WDM 21-44-21):

M21016DS2	DM23217N
pin K	pin A8
pin J	pin A5
pin H	pin A6
pin G	pin A7

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector M21016DS2.
 - 3) Re-connect connector DM23217N.
 - 4) Re-install the cargo temp select module, M21016.
 - 5) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the BULK CARGO TEMP selector first to OFF, then to LOW, and then to HIGH.
 - 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the OFF, LOW and HIGH positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M21016DS2 to the bulk cargo temperature selector, M21016S2.
- (h) Re-install the cargo temp select module, M21016.
- (3) Replace the right overhead panel card file chassis, M23217 at the maintenance panel, P61.

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These are the tasks:

Overhead Panel Interface Card (OPIC) Removal, AMM TASK 23-93-02-000-801,

Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the BULK CARGO TEMP selector first to OFF, then to LOW, and then to HIGH.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the OFF, LOW and HIGH positions, you corrected the fault.

————— END OF TASK —————

808. Bulk Cargo Compartment Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12012.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the bulk cargo compartment temperature sensor, M21442:
 - (a) Disconnect connector DM21442 from the bulk cargo compartment temperature sensor, M21442.
 - (b) Measure the resistance between pins 1 and 2 of the connector on the temperature sensor (WDM 21-44-12).
 - (c) If the resistance is not 1K-1000K ohms between pins 1 and 2, then do these steps:
 - 1) Replace the temperature sensor, M21442.

These are the tasks:

Bulk Cargo Compartment Temperature Sensor Removal, AMM TASK 21-44-06-000-801,

Bulk Cargo Compartment Temperature Sensor Installation, AMM TASK 21-44-06-400-801.
 - (d) If the resistance is 1K-1000K between pins 1 and 2, then do these steps:
 - 1) Remove the right ECS Miscellaneous Card (ECSMC), A14, from the Right Systems Cardfile, P84, do this task: ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801.
 - 2) Do a wiring check between these pins of connector XA14 in the Right Systems Cardfile, P84, and connector DM21442 at the temperature sensor, M21442 (WDM 21-44-12).

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XA14

pin 51 pin 1
pin 50 pin 2

DM21442

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21442 to the temperature sensor, M21442.
 - c) Re-install the right ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the right ECSMC, A14.
- These are the tasks:
- ECS Miscellaneous Card (ECSMC) Removal, AMM TASK 21-00-10-000-801,
ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

809. Cargo Heat Shutoff Valve (Bulk) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12022.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the bulk cargo heat shutoff valve, V21443.

These are the tasks:

Bulk Cargo Heat Shutoff Valve and Temperature Control Valve Removal, AMM TASK 21-44-03-000-801,

Bulk Cargo Heat Shutoff Valve and Temperature Control Valve Installation, AMM TASK 21-44-03-000-802.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the bulk cargo overheat switch, S21294.
These are the tasks:
Bulk Cargo Compartment Overheat Switch Removal, AMM TASK 21-44-10-000-802,
Bulk Cargo Compartment Overheat Switch Installation, AMM TASK 21-44-10-400-802.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Disconnect connector DV21443 from the shutoff valve, V21443 (WDM 21-44-21)
- (4) Do a check for 28 VDC between pin 12 of connector DV21443 and structure ground (WDM 21-44-21).
- (5) If there is 28 VDC between pin 12 of connector DV21443 and structure ground, then do these steps:
 - (a) Remove the bulk cargo heat SOV relay, K21443, in the P210 panel.
 - (b) Do a wiring check between pin A1 of connector DK21443 and pin 5 of connector DV21443 (WDM 21-44-21).
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector.
 - 3) Re-install the bulk cargo heat SOV relay, K21443.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If you do not find a problem with the wiring, then continue.
 - (e) Replace the bulk cargo overheat relay, K21460, in the P39 panel (WDM 21-44-21).
 - 1) Re-connect connector DV21443 to the shutoff valve, V21443.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
 - a) Disconnect connector DV21443 from the shutoff valve, V21443 (WDM 21-44-21).
 - (f) Do a continuity check between pin 6 of connector DV21443 and structure ground (WDM 21-44-21).
 - (g) Do a continuity check between pin 11 of connector DV21443 and structure ground (WDM 21-44-21).
 - (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.

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- 2) Re-connect the connector.
- 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (i) If you do not find a problem with the wiring, then continue.
- (j) Remove the right ECS Miscellaneous Card (ECSCMC), A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
- (k) Do a wiring check between these pins of connector XA14 at the Right Systems Cardfile, P84, and the connector at the shutoff valve, V21443 (WDM 21-44-21):

XA14	DV21443
pin 74	pin 10
pin 77	pin 9

- (l) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV21443.
 - 3) Re-install the right ECSCMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Bulk Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (m) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DV21443.
 - 2) Install a new right ECSCMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (6) If there is not 28 VDC between pins 12 of connector DV21443 and structure ground, then do these steps:
 - (a) Repair the wiring between circuit breaker C21616 on the Right Power Management Panel, P210, and pin 12 of connector DV21443 (WDM 21-44-21).
 - 1) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

810. Cargo Heat Temperature Control Valve (Bulk) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12032.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the bulk cargo heat temperature control valve, V21444.

These are the tasks:

Bulk Cargo Heat Shutoff Valve and Temperature Control Valve Removal, AMM TASK 21-44-03-000-801,

Bulk Cargo Heat Shutoff Valve and Temperature Control Valve Installation, AMM TASK 21-44-03-000-802.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the bulk cargo overheat switch, S21294.

These are the tasks:

Bulk Cargo Compartment Overheat Switch Removal, AMM TASK 21-44-10-000-802,

Bulk Cargo Compartment Overheat Switch Installation, AMM TASK 21-44-10-400-802.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Disconnect connector DV21444 from the temperature control valve, V21444 (WDM 21-44-21).
- (4) Do a check for 28 VDC between pin 12 of connector DV21444 and structure ground (WDM 21-44-21).
- (5) If there is 28 VDC between pin 12 of connector DV21444 and structure ground, then do these steps:
 - (a) Remove the bulk cargo heat TCV relay, K21444, in the P210 panel.
 - (b) Do a wiring check between pin A1 of connector DK21444 and pin 5 of connector DV21444 (WDM 21-44-21).
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector DV21444 to the temperature control valve, V21444.
 - 3) Re-install the bulk cargo heat TCV relay, K21444.

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- 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (e) Replace the bulk cargo overheat relay, K21460, in the P39 panel (WDM 21-44-21).
 - 1) Re-connect connector DV21444 to the temperature control valve, V21444.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message shows on the ground test display, then continue.
 - a) Disconnect connector DV21444 from the temperature control valve, V21444 (WDM 21-44-21).
- (f) Do a continuity check between pin 6 of connector DV21444 and structure ground (WDM 21-44-21).
- (g) Do a continuity check between pin 11 of connector DV21444 and structure ground (WDM 21-44-21).
- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector DV21444 to the temperature control valve, V21444.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (i) If you do not find a problem with the wiring, then continue.
- (j) Remove the right ECS Miscellaneous Card (ECSCMC), A14. To remove it, do this task: ECS Miscellaneous Card (ECSCMC) Removal, AMM TASK 21-00-10-000-801.
- (k) Do a wiring check between these pins of connector XA14 at the Right Systems Cardfile, P84, and the connector at the temperature control valve, V21444 (WDM 21-44-21):

XA14	DV21444
pin 68	pin 10
pin 71	pin 9

- (l) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector DV21444 to the temperature control valve, V21444.
 - 3) Re-install the right ECSCMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSCMC) Installation, AMM TASK 21-00-10-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Bulk Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (m) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect the connector DV21444 to the temperature control valve, V21444.
 - 2) Install a new right ECSMC, A14. To install it, do this task: ECS Miscellaneous Card (ECSMC) Installation, AMM TASK 21-00-10-400-801.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (6) If there is not 28 VDC between pins 12 of connector DV21444 and structure ground, then do these steps:
 - (a) Repair the wiring between circuit breaker C21620 on the Right Power Management Panel, P210, and pin 12 of connector DV21444 (WDM 21-44-21).
 - 1) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
- (7) Replace the bulk cargo heat temperature control valve relay, K21444, in the P210 panel (WDM 21-44-21).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

813. Relay (AFT CARGO HEAT SOV) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13174.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the aft cargo heat shutoff valve relay, K21441, in the P110 panel (WDM 21-44-11).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.

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- (2) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P110 panel for the aft cargo heat shutoff valve relay (WDM 21-44-11).
- (a) Remove the aft cargo heat shutoff valve relay, K21441, in the P110 panel (WDM 21-44-11).
- (b) Disconnect the electrical connectors DM24505A and DM24505B from the SIU, M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
- (c) Do a check of the wiring between pins X1 and A2 of connector DK21441 and this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	25	C21615	AFT CGO HT SOV

- (d) Do a check of the wiring between pin X2 of connector DK21441 and the pin 6 of connector DM24505B.
- (e) Do a check of the wiring between pin A1 of connector DK21441 and the pin 15 of connector DM24505A.
- (f) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Install the aft cargo heat shutoff valve relay, K21441, in the P110 panel (WDM 21-44-11).
 - 3) Re-connect the electrical connectors DM24505A and DM24505B to the SIU, M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

814. Relay (BULK CARGO HEAT SOV) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12123.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the bulk cargo heat shutoff valve relay, K21443, in the P210 panel (WDM 21-44-21).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P210 panel for the bulk cargo heat shutoff valve relay (WDM 21-44-21).
 - (a) Remove the bulk cargo heat shutoff valve relay, K21443, in the P210 panel (WDM 21-44-21).
 - (b) Disconnect the electrical connectors DM24509A and DM24509B from the SIU, M24509. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (c) Do a check of the wiring between pins X1 and A2 of connector DK21443 and this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	3	C21616	BULK CGO HT SOV

- (d) Do a check of the wiring between pin X2 of connector DK21443 and the pin 3 of connector DM24509B.
- (e) Do a check of the wiring between pin A1 of connector DK21441 and the pin 11 of connector DM24509A.
- (f) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Install the bulk cargo heat shutoff valve relay, K21443, in the P210 panel (WDM 21-44-21).

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- 3) Re-connect the electrical connectors DM24509A and DM24509B to the SIU, M24509. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
- 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

815. Relay (AFT CARGO HEAT TCV) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13175.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the aft cargo heat temperature control valve relay, K21442, in the P110 panel (WDM 21-44-11).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P110 panel for the aft cargo heat temperature control valve relay (WDM 21-44-11).
 - (a) Remove the aft cargo heat temperature control valve relay, K21442, in the P110 panel (WDM 21-44-11).
 - (b) Disconnect the electrical connectors DM24505A and DM24505B from the SIU, M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002

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- (c) Do a check of the wiring between pins X1 and A2 of connector DK21442 and this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	24	C21619	AFT CGO HT TCV

- (d) Do a check of the wiring between pin X2 of connector DK21442 and the pin 7 of connector DM24505B.
- (e) Do a check of the wiring between pin A1 of connector DK21442 and the pin 16 of connector DM24505A.
- (f) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Install the aft cargo heat temperature control valve relay, K21442, in the P110 panel (WDM 21-44-11).
 - 3) Re-connect the electrical connectors DM24505A and DM24505B to the SIU, M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

816. Relay (BULK CARGO HEAT TCV) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12133.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the bulk cargo heat shutoff temperature control valve relay, K21444, in the P210 panel (WDM 21-44-21).
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.

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This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the internal wiring in the P210 panel for the bulk cargo heat temperature control valve relay (WDM 21-44-21).
 - (a) Remove the bulk cargo heat temperature control valve relay, K21444, in the P210 panel (WDM 21-44-21).
 - (b) Disconnect the electrical connectors DM24509A and DM24509B from the SIU, M24509. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (c) Do a check of the wiring between pins X1 and A2 of connector DK21444 and this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	4	C21620	BULK CGO HT TCV

- (d) Do a check of the wiring between pin X2 of connector DK21444 and the pin 4 of connector DM24509B.
- (e) Do a check of the wiring between pin A1 of connector DK21444 and the pin 12 of connector DM24509A.
- (f) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Install the bulk cargo heat temperature control valve relay, K21444, in the P210 panel (WDM 21-44-21).
 - 3) Re-connect the electrical connectors DM24509A and DM24509B to the SIU, M24509. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Bulk Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

817. Aft Cargo Overheat Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12014.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Replace the Aft Cargo Overheat Switch, S21293.

These are the tasks:

Aft Cargo Compartment Overheat Switch Removal, AMM TASK 21-44-10-000-801,

Aft Cargo Compartment Overheat Switch Installation, AMM TASK 21-44-10-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the Aft Cargo Overheat relay, K21459, in the P39 panel (WDM 21-44-11).
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the wiring from the Aft Cargo Overheat Switch, S21293, to the P39 panel (WDM 21-44-11):
- (a) Disconnect connector DS21293 from the Aft Cargo Overheat Switch, S21293.
- (b) Disconnect connector D7318P from the P39 panel.
- (c) Do a wiring check between these pins of connector DS21293 at the Aft Cargo Overheat Switch, S21293, and connector D7318P at the P39 panel (WDM 21-44-11):

DS21293	D7318P
1	22
2	18

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DS21293.
 - 3) Re-connect connector D7318P.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (e) If you do not find a problem with the wiring, then continue.

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- (f) Re-connect connector DS21293.
- (5) Do this check of the wiring for the Aft CGO OVERHEAT relay, K21459 (WDM 21-44-11):
 - (a) Remove the Aft CGO OVERHEAT relay, K21459, from the P39 panel.
 - (b) Do a wiring check between these pins of connector D7318P at the P39 panel, and connector DK21459 at the Aft CGO OVERHEAT relay, K21459 (WDM 21-44-11):

D7318P	DK21459
16	A2
17	B2
18	B2
19	A3
20	B3
22	B1
22	X1
30	X2

- (c) Do a check for continuity between pin 30 of connector D7318P and structure ground (WDM 21-44-11).
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Install the Aft CGO OVERHEAT relay, K21459, into the P39 panel.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Install the Aft CGO OVERHEAT relay, K21459, in to the P39 panel.

———— **END OF TASK** ————

818. Bulk Cargo Overheat Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-12015.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the Bulk Cargo Overheat Switch, S21294.

These are the tasks:

Bulk Cargo Compartment Overheat Switch Removal, AMM TASK 21-44-10-000-802,

Bulk Cargo Compartment Overheat Switch Installation, AMM TASK 21-44-10-400-802.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the Bulk Cargo Overheat relay, K21460, in the P39 panel (WDM 21-44-21).
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel,
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the wiring from the Bulk Cargo Overheat Switch, S21294 to the P39 panel (WDM 21-44-21):
 - (a) Disconnect connector DS21294 from the Bulk Cargo Overheat Switch, S21294.
 - (b) Do a wiring check between these pins of connector DS21294 at the Aft Cargo Overheat Switch, S21294, and connector D7319P at the P39 panel(WDM 21-44-21):

DS21294	D7319P
1	29
2	26
- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DS21294.
 - 3) Re-connect connector D7319P.
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 5) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (d) If you do not find a problem with the wiring, then continue.
- (e) Re-connect connector DS21294.
- (5) Do this check of the wiring for the BULK CGO OVERHEAT relay, K21460 (WDM 21-44-21):
 - (a) Remove the BULK CGO OVERHEAT relay, K21460, from the P39 panel.
 - (b) Do a wiring check between these pins of connector D7319P at the P39 panel, and connector DK21460 at the BULK CGO OVERHEAT relay (WDM 21-44-21):

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D7319P	DK21460
24	A2
25	B2
26	B2
27	A3
28	B3
29	B1
29	X1
30	X2

- (c) Do a check for continuity between pin 30 of connector D7319P and structure ground (WDM 21-44-21).
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the BULK CGO OVERHEAT relay, K21460, into the P39 panel.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Aft Cargo Heat.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the BULK CGO OVERHEAT relay, K21460, in to the P39 panel.

———— **END OF TASK** ————

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810. Door Area Heater (Left 2) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13021.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left door area heat relay, K21451, from the Left Power Management Panel, P110 (WDM 21-45-21).
- (2) Measure the resistance between pin B1 and structure ground at connector DK21451 on the P110 panel (WDM 21-45-21) .
- (3) If the resistance between pin B1 and structure ground at connector DK21451 is not 25-28 ohms, then do these steps:
 - (a) Disconnect connector DB21456 from the left door area heater, B21456.
 - (b) Do a continuity check between pin 2 of connector DB21456 and structure ground (WDM 21-45-21).
 - 1) If there is not continuity between pin 2 of connector DB21456, and structure ground, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21456.
 - c) Re-install the relay, K21451.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If there is continuity between pin 2 of connector DB21456, and structure ground, then continue.
 - (c) Measure the resistance between pins 1 and 2 on the heater.
 - (d) If the resistance between pins 1 and 2 is not 25-28 ohms, then do these steps:
 - 1) Replace the heater, B21456.

These are the tasks:
Door Area Heater Removal, AMM TASK 21-45-03-000-801,
Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - 2) Re-install the relay, K21451.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.

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- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the resistance between pins 1 and 2 is 25-28 ohms, then do these steps:
 - 1) Do a wiring check between these pins of connector DK21451 on the P110 panel and connector DB21456 at the heater B21456 (WDM 21-45-21):

DK21451	DB21456
pin B1	pin 1
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DB21456.
 - c) Re-install the relay, K21451.
 - d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
- (4) If the resistance between pin B1 and structure ground at connector DK21451 is 25-28 ohms, then continue.
- (5) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the current monitor, M24606, in the P110 panel.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (7) Do a check of the internal wiring in the P110 panel door area heater circuit (WDM 21-45-21).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

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818. Captain's and First Officer's Foot Heater Problems - Fault Isolation

A. Initial Evaluation



OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (2) Do the steps that follow to help you determine what type of foot heater fault exists:
 - (a) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel each foot heater to see if it operates.

NOTE: The foot heater will not operate if the temperature of the foot heater is more than 75°F (23.9°C). You have to cool down the foot heater to less than 75°F (23.9°C) for it to operate. You can use an ice pack as a cooling source to cool down the foot heater.
 - 1) If the left and right foot heaters do not operate when the switch is in the LOW and HIGH position, then do the Fault Isolation Procedure - Inoperative in LOW and HIGH.
 - 2) If the left and right foot heaters do not operate when the switch is in the LOW position, but do operate with the switch in the HIGH position, then do the Fault Isolation Procedure - Inoperative in LOW.
 - 3) If the left and right foot heaters do not operate when the switch is in the HIGH position, but do operate with the switch in the LOW position, then do the Fault Isolation Procedure - Inoperative in HIGH.
 - 4) If only one foot heater does not operate when the switch is in the LOW and HIGH position, then do the Fault Isolation Procedure - One Heater Inoperative.
 - 5) If the left and right foot heaters operate in the LOW and HIGH position, then there was an intermittent fault.
- (3) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.

B. Fault Isolation Procedure - Inoperative in LOW and HIGH

- (1) Look at the Extended Maintenance, Present Leg Faults display on the MAT.
 - (a) If a maintenance message related to the applicable FT & SHLDR HTR relay shows in Present Leg Faults, then do these steps:
 - 1) Find the message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - (b) If a maintenance message related to the applicable FT & SHLDR HTR relay does not show in Present Leg Faults, then continue.
- (2) Move the applicable HEATERS-SHOULDER selector to the HIGH position.
 - (a) If the shoulder heater operates with the switch in the HIGH position, then do these steps:
 - 1) Replace the applicable Captain's or First Officer's foot heater switch, S00001 (WDM 21-45-11) (WDM 21-45-12).

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- a) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - b) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel each foot heater to see if it operates.
 - c) If the foot heaters operate with the switch in the LOW and HIGH position, then you corrected the fault.
 - d) If the foot heaters do not operate with the switch in the LOW and HIGH position, then continue.
- 2) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - 3) Repair the wiring between SM2 and the applicable foot heater switch S1 (WDM 21-45-11) (WDM 21-45-12).
 - a) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - b) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel each foot heater to see if it operates.
 - c) If the foot heaters operate with the switch in the LOW and HIGH position, then you corrected the fault.
 - d) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (b) If the shoulder heater does not operate with the switch in the HIGH position, then do these steps:
- 1) If the foot heaters for the Captain do not operate, then do these steps:
 - a) Repair the wiring between pin 82 of connector DM24504C in the P110 panel and terminal SM2 in the left integration AE0231 (WDM 21-45-11).
 - b) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - c) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel each foot heater to see if it operates.
 - d) If the foot heaters operate with the switch in the LOW and HIGH position, then you corrected the fault.
 - e) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - 2) If the foot heaters for the First officer do not operate, then do these steps:
 - a) Repair the wiring between pin 84 of connector DM24509C in the P210 panel and terminal SM1 in the right integration AE0231 (WDM 21-45-12).
 - b) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - c) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel each foot heater to see if it operates.
 - d) If the foot heaters operate with the switch in the LOW and HIGH position, then you corrected the fault.
 - e) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.

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C. Fault Isolation Procedure - Inoperative in LOW

- (1) Do this check for continuity between the applicable switch and structure ground:
 - (a) Disconnect connector S00001 from the applicable Captain's or First Officer's foot heater switch, S00001 (WDM 21-45-11) (WDM 21-45-12).
 - (b) Do a check for continuity between pin C of connector S00001 and structure ground (WDM 21-45-11) (WDM 21-45-12).
 - (c) If there is no continuity between pin C and structure ground, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector S00001.
 - 3) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - 4) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel each foot heater to see if it operates.
 - 5) If the foot heaters operate with the switch in the LOW and HIGH position, then you corrected the fault.
 - 6) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - (d) If there is continuity between pin C and structure ground, then continue.
- (2) Replace the applicable Captain's or First Officer's foot heater switch, S00001 (WDM 21-45-11) (WDM 21-45-12).
 - (a) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - (b) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel each foot heater to see if it operates.
 - (c) If the foot heaters operate with the switch in the LOW and HIGH position, then you corrected the fault.
 - (d) If the foot heaters do not operate with the switch in the LOW and HIGH position, then continue.
 - (e) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.

D. Fault Isolation Procedure - Inoperative in HIGH

- (1) Disconnect connector S00001 from the applicable switch S00001.
- (2) Do a check for 115 VAC from pin D of connector S00001 to structure ground.
 - (a) If there is 115VAC at pin D of connector S00001, then do these steps:
 - 1) Replace the applicable Captain's or First Officer's foot heater switch, S00001 (WDM 21-45-11) (WDM 21-45-12).
 - 2) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - 3) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel each foot heater to see if it operates.
 - 4) If the foot heaters operate with the switch in the LOW and HIGH position, then you corrected the fault.

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- 5) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (b) If there is not 115VAC at pin D of connector S00001, then do these steps:
 - 1) If the foot heaters for the Captain do not operate, then do these steps:
 - a) Repair the wiring between pin D of connector S00001 and terminal SM3 in the left integration AE0231 (WDM 21-45-11).
 - b) Re-connect connector S00001.
 - c) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - d) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel each foot heater to see if it operates.
 - e) If the foot heaters operate with the switch in the LOW and HIGH position, then you corrected the fault.
 - f) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - 2) If the foot heaters for the First officer do not operate, then do these steps:
 - a) Repair the wiring between pin D of connector S00001 and terminal SM2 in the right integration AE0232 (WDM 21-45-12).
 - b) Re-connect connector S00001.
 - c) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - d) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel each foot heater to see if it operates.
 - e) If the foot heaters operate with the switch in the LOW and HIGH position, then you corrected the fault.
 - f) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.

E. Fault Isolation Procedure - One Foot Heater Inoperative

- (1) Disconnect the connector below from the applicable foot heater:
 - (a) DB21207 - Left Captain's foot heater, B21207 (WDM 21-45-11)
 - (b) DB21453 - Right Captain's foot heater, B21453 (WDM 21-45-11)
 - (c) DB21207 - Left First Officer's foot heater, B21208 (WDM 21-45-12)
 - (d) DB21453 - Right First Officer's foot heater, B21451 (WDM 21-45-12).
- (2) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (3) Put the applicable HEATERS-FOOT switch in the LOW position.
- (4) Do a check for 115 VAC between pin 1 and pin 2 of the applicable connector (WDM 21-45-11) (WDM 21-45-12).
 - (a) If there is 115VAC between pin 1 and pin 2 of the applicable connector, then do these steps:
 - 1) Replace the applicable Captain's or First Officer's foot heater.

These are the tasks:

Captain's and First Officer's Foot Heater Removal, AMM TASK 21-45-01-000-801,

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Captain's and First Officer's Foot Heater Installation, AMM TASK 21-45-01-400-801.

- 2) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel the foot heater to see if it operates.
 - 3) If the foot heaters operate with the switch in the LOW and HIGH position, then you corrected the fault.
 - 4) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (b) If there is not 115VAC between pin 1 and pin 2 of the applicable connector, then do these steps:
- 1) Do a check for 115 VAC between pin 1 of the applicable connector, and structure ground.
 - 2) If there is 115VAC between pin 1 of the applicable connector and structure ground, then do these steps:
 - a) Repair the wiring between pin 2 of the applicable connector and terminal SM2 (WDM 21-45-11) (WDM 21-45-12).
 - b) Re-connect the applicable connector.
 - c) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - d) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel the foot heater to see if it operates.
 - e) If the foot heater operates with the switch in the LOW and HIGH position, then you corrected the fault.
 - f) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - 3) If there is not 115VAC between pin 1 of the applicable connector and structure ground, then do these steps:
 - a) Repair the wiring between pin 1 of the applicable connector and terminal SM1 (WDM 21-45-11) (WDM 21-45-12).
 - b) Re-connect the applicable connector.
 - c) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - d) Put the applicable HEATERS-FOOT switch in the LOW and HIGH position and feel the foot heater to see if it operates.
 - e) If the foot heaters operates with the switch in the LOW and HIGH position, then you corrected the fault.
 - f) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.

————— **END OF TASK** —————

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819. Captain's and First Officer's Shoulder Heater Problems - Fault Isolation

A. Initial Evaluation



OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (2) Put the applicable HEATERS-SHOULDER switch in the HIGH position and feel the air that exits the shoulder heater outlet.
 - (a) If the air that exits the shoulder heater outlet is cool, then do the Fault Isolation Procedure below.
 - (b) If the air that exits the shoulder heater outlet is warm, then there was an intermittent fault.
- (3) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.

B. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Present Leg Faults display on the MAT.
 - (a) If a maintenance message related to the applicable FT & SHLDR HTR relay shows in Present Leg Faults, then do these steps:
 - 1) Find the message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - (b) If a maintenance message related to the applicable FT & SHLDR HTR relay does not show in Present Leg Faults, then continue.
- (2) Replace the applicable Captain's or First Officer's shoulder heater.

These are the tasks:

Captain's and First Officer's Shoulder Heater Removal, AMM TASK 21-45-02-000-801,
Captain's and First Officer's Shoulder Heater Installation, AMM TASK 21-45-02-400-801.

 - (a) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - (b) Put the applicable HEATERS-SHOULDER switch in the HIGH position and feel the air that exits the shoulder heater outlet.
 - (c) If the air that exits the shoulder heater outlet is warm, then you corrected the fault.
 - (d) If the air that exits the shoulder heater outlet is not warm, then continue.
- (3) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (4) Replace the applicable Captain's or First Officer's shoulder heater switch (WDM 21-45-11) (WDM 21-45-12).
 - (a) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - (b) Put the applicable HEATERS-SHOULDER switch in the HIGH position and feel the air that exits the shoulder heater outlet.
 - (c) If the air that exits the shoulder heater outlet is warm, then you corrected the fault.

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- (d) If the air that exits the shoulder heater outlet is not warm, then continue.
- (5) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (6) Do a check of the wiring between the applicable shoulder heater switch and the shoulder heater (WDM 21-45-11) (WDM 21-45-12).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - 3) Put the applicable HEATERS-SHOULDER switch in the HIGH position and feel the air that exits the shoulder heater outlet.
 - 4) If the air that exits the shoulder heater outlet is warm, then you corrected the fault.
 - 5) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - (b) If you do not find a problem with the wiring, then continue.
- (7) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (8) Do a check of the wiring between the applicable shoulder heater and the left (right) integration bracket (WDM 21-45-11) (WDM 21-45-12).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Put the air/ground system in the air mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
 - 3) Put the applicable HEATERS-SHOULDER switch in the HIGH position and feel the air that exits the shoulder heater outlet.
 - 4) If the air that exits the shoulder heater outlet is warm, then you corrected the fault.
 - 5) Put the air/ground system in the ground mode. To do this, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.

————— **END OF TASK** —————

820. Galley Heat Problems - Fault Isolation

A. Initial Evaluation

- (1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.

NOTE: Conditioned air must be supplied from one of the air conditioning packs to operate the galley heater.
- (2) Do these steps to do an operational test of the galley heater:
 - (a) Put the applicable galley heat switch in the HIGH position.

NOTE: The galley heat switch is found on the galley control panel.
 - (b) Feel the airflow from the galley heat outlet grill.

NOTE: The galley heat outlet grill is found near the floor.
 - (c) Put the applicable galley heat switch in the OFF position.
 - (d) Feel the airflow from the galley heat outlet grill.

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- (3) If the airflow is cool (or not fully warm) with the switch in the HIGH position or if the airflow is warm with the switch in the OFF position, then do the applicable Fault Isolation Procedure below.
- (4) If the airflow is warm with the switch in the HIGH position and cool with the switch in the OFF position, then there was an intermittent fault.

B. Forward Galley Heat Fault Isolation Procedure

- (1) If there is a problem with the forward galley heat, do these steps:
 - (a) Replace the forward galley heat relay, K21456 (WDM 21-45-41).
 - 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Put the forward galley heat switch in the warmest position and feel the air that exits the heater outlets.
 - 3) If the air that exits the heater outlets is warm, then you corrected the fault.
 - 4) If the air that exits the heater outlets is cool, then continue.
 - (b) Replace the forward galley heater, B21204.

These are the tasks:

Forward Galley Heater Removal, AMM TASK 21-45-04-000-801,

Forward Galley Heater Installation, AMM TASK 21-45-04-400-801.

 - 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Put the forward galley heat switch in the warmest position and feel the air that exits the heater outlets.
 - 3) If the air that exits the heater outlets is warm, then you corrected the fault.
 - 4) If the air that exits the heater outlets is cool, then continue.
 - (c) Replace the forward galley heat switch module, M21454 (WDM 21-45-41).
 - 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Put the forward galley heat switch in the warmest position and feel the air that exits the heater outlets.
 - 3) If the air that exits the heater outlets is warm, then you corrected the fault.
 - 4) If the air that exits the heater outlets is cool, then continue.

C. Aft Galley Heat Fault Isolation Procedure

- (1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
- (2) Put the aft galley heater switch in the warmest position and feel the air that exits each of the heater outlets.
- (3) If the air that exits both the left and the right heater outlets is cool, then do these steps:
 - (a) Replace the aft galley heat switch module, M21453 (WDM 21-45-45).
 - 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Put the aft galley heat switch in the warmest position and feel the air that exits the heater outlets.

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- 3) If the air that exits the heater outlets is warm, then you corrected the fault.
- (4) If the air that exits the left outlet (looking forward) is cool, do these steps:
 - (a) Replace the aft galley heat relay, K21457 (WDM 21-45-46).
 - 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Put the aft galley heat switch in the warmest position and feel the air that exits the left heater outlet.
 - 3) If the air that exits the left heater outlet is warm, then you corrected the fault.
 - 4) If the air that exits the left heater outlet is cool, then continue.
 - (b) Replace the left aft galley heater, B21210.

These are the tasks:

Aft Galley Heater Removal, AMM TASK 21-45-04-000-802,
Aft Galley Heater Installation, AMM TASK 21-45-04-400-802.

 - 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Put the aft galley heat switch in the warmest position and feel the air that exits the left heater outlet.
 - 3) If the air that exits the left heater outlet is warm, then you corrected the fault.
 - 4) If the air that exits the left heater outlet is cool, then continue.

- (5) If the air that exits the right outlet (looking forward) is cool, do these steps:
 - (a) Replace the aft galley heat relay, K21455 (WDM 21-45-31).
 - 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Put the aft galley heat switch in the warmest position and feel the air that exits the right heater outlet.
 - 3) If the air that exits the right heater outlet is warm, then you corrected the fault.
 - 4) If the air that exits the right heater outlet is cool, then continue.
 - (b) Replace the right aft galley heater, B21205.

These are the tasks:

Aft Galley Heater Removal, AMM TASK 21-45-04-000-802,
Aft Galley Heater Installation, AMM TASK 21-45-04-400-802.

 - 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Put the aft galley heat switch in the warmest position and feel the air that exits the right heater outlet.
 - 3) If the air that exits the right heater outlet is warm, then you corrected the fault.
 - 4) If the air that exits the right heater outlet is cool, then continue.

D. Fault Isolation Procedure - Mid Galley Heat Problems

- (1) Replace the mid galley heater relay, K21458 (WDM 21-45-47).
 - (a) Do these steps to do an operational test of the mid galley heater:

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- 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
- 2) Put the galley heat switch in the HIGH position.
- 3) Feel the airflow from the galley heat outlet grill.
- 4) Put the galley heat switch in the OFF position.
- 5) Feel the airflow from the galley heat outlet grill.
- (b) If the airflow is warm with the switch in the HIGH position and cool with the switch in the OFF position, then you corrected the fault.
- (c) If the airflow is cool (or not fully warm) with the switch in the HIGH position or if the airflow is warm with the switch in the OFF position, then continue.
- (2) Replace the mid galley heater, B21450 (AMM PAGEBLOCK 21-45-04/401).
 - (a) Do these steps to do an operational test of the galley heater:
 - 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Put the galley heat switch in the HIGH position.
 - 3) Feel the airflow from the galley heat outlet grill.
 - 4) Put the galley heat switch in the OFF position.
 - 5) Feel the airflow from the galley heat outlet grill.
 - (b) If the airflow is warm with the switch in the HIGH position and cool with the switch in the OFF position, then you corrected the fault.
 - (c) If the airflow is cool (or not fully warm) with the switch in the HIGH position or if the airflow is warm with the switch in the OFF position, then continue.
- (3) Replace the mid galley heater switch module, M21455 (WDM 21-45-47).
 - (a) Do these steps to do an operational test of the galley heater:
 - 1) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Put the galley heat switch in the HIGH position.
 - 3) Feel the airflow from the galley heat outlet grill.
 - 4) Put the galley heat switch in the OFF position.
 - 5) Feel the airflow from the galley heat outlet grill.
 - (b) If the airflow is warm with the switch in the HIGH position and cool with the switch in the OFF position, then you corrected the fault.
 - (c) If the airflow is cool (or not fully warm) with the switch in the HIGH position or if the airflow is warm with the switch in the OFF position, then continue.
- (4) Do a check of the wiring between the mid galley heater switch module and the mid galley heater:
 - (a) This circuit breaker is inoperative and should remain open:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C21328	MID GLY HTR (ZONE E) (INOP)

- (b) Disconnect connector D833 from the heater switch module.

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- (c) Disconnect connector DB21450 from the heater.
- (d) Do a wiring check between these pins of connector D833 at the switch module and connector DB21450 at the heater (WDM 21-45-47).

D833	DB21450
pin 16	pin 9
pin 17	pin 12
pin 18	pin 11

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Reconnect connector D833 to the heater switch module.
 - 3) Reconnect connector DB21450 to the heater.
 - 4) This circuit breaker is inoperative and should remain open:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C21328	MID GLY HTR (ZONE E) (INOP)

- 5) Do these steps to do an operational test of the mid galley heater:
 - a) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - b) Put the galley heat switch in the HIGH position.
 - c) Feel the airflow from the galley heat outlet grill.
 - d) Put the galley heat switch in the OFF position.
 - e) Feel the airflow from the galley heat outlet grill.
- 6) If the airflow is warm with the switch in the HIGH position and cool with the switch in the OFF position, then you corrected the fault.
- 7) If the airflow is cool (or not fully warm) with the switch in the HIGH position or if the airflow is warm with the switch in the OFF position, then continue.
- (f) If you do not find a problem with the wiring, then reconnect connector D833 to the heater switch module and continue.
- (5) Do a check of the wiring between the mid galley heater and the mid galley heater relay:
 - (a) Disconnect connector DK21458 from the heater relay.
 - (b) Do a wiring check between these pins of connector DB21450 at the heater and connector DK21458 at the relay (WDM 21-45-47).

DB21450	DK21458
pin 4	pin A1
pin 7	pin B1
pin 10	pin C1

- (c) Do a wiring check between pin 2 of connector DB21450 at the heater and structure ground (WDM 21-45-47).
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.

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- 2) Reconnect connector DB21450 to the heater.
- 3) Reconnect connector DK21458 to the heater relay.
- 4) This circuit breaker is inoperative and should remain open:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C21328	MID GLY HTR (ZONE E) (INOP)

- 5) Do these steps to do an operational test of the mid galley heater:
 - a) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - b) Put the galley heat switch in the HIGH position.
 - c) Feel the airflow from the galley heat outlet grill.
 - d) Put the galley heat switch in the OFF position.
 - e) Feel the airflow from the galley heat outlet grill.
- 6) If the airflow is warm with the switch in the HIGH position and cool with the switch in the OFF position, then you corrected the fault.
- 7) If the airflow is cool (or not fully warm) with the switch in the HIGH position or if the airflow is warm with the switch in the OFF position, then continue.
- (e) If you do not find a problem with the wiring, then reconnect connector DB21450 to the heater and continue.
- (6) Do a check of the wiring to the mid galley heater relay:
 - (a) Do a wiring check between these pins of connector DK21458 at the heater relay and this circuit breaker (WDM 21-45-47):

Do a wiring check between these pins of connector DK21458 at the heater relay and this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	19	C21696	MID GLY HTR (ZONE E) CTRL (INOP)

DK21458	CB21696
pin X1	pin 2

- (b) Disconnect connector DP443 from the M24400 ELMS unit at the P110 panel.
- (c) Do a wiring check between these pins of connector DK21458 at the heater relay and connector DP443 at the P110 panel (WDM 21-45-47).

DK21458	DP443
pin X2	pin 118

- (d) Do a wiring check between these pins of connector DK21458 at the heater relay and this circuit breaker (WDM 21-45-47):

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C. Fault Isolation Procedure

- (1) Do a check for power to the left door area heat relay, K21451, in the P110 panel:
 - (a) Remove the left door area heat relay, K21451, in the P110 panel (WDM 21-45-21).
 - (b) Do a check for 28V DC at pin X1 of connector DK21451 at the P110 panel.
 - (c) If there is not 28V DC at pin X1 of connector DK21451, then do the steps that follow:
 - 1) Repair the wiring between pin X1 of DK21451 and pin 2 of this circuit breaker:
(WDM 21-45-21)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	27	C21684	L DR 1-5 HTR CTRL

- 2) Re-install the left door area heat relay, K21451, in the P110 panel (WDM 21-45-21).
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (d) If there is 28V DC at pin X1 of connector DK21451, then continue.
- (2) Do a check for path to ground for the left door area heat relay, K21451, in the P110 panel:
 - (a) Disconnect the electrical connector DM24504B from the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Do a wiring check between pin X2 of connector DK21451 and pin 12 of DM24504B.
 - (c) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin X2 of connector DK21451 and pin 12 of DM24504B.
 - 2) Re-connect the electrical connector DM24504B to the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the left door area heat relay, K21451, in the P110 panel (WDM 21-45-21).
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
 - (d) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Replace the left door area heat relay, K21451, in the P110 panel (WDM 21-45-21).
 - 2) Re-connect the electrical connector DM24504B to the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.

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- (3) Do a check of the wiring between the relay, K21451, and the SIU, M24504:
- Remove the left door area heat relay, K21451, in the P110 panel (WDM 21-45-21).
 - Disconnect the electrical connector DM24504C from the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - Do a wiring check between pin A1 of connector DK21451 and pin 88 of DM24504C.
 - If there is a problem with the wiring, then do the steps that follow:
 - Repair the wiring between pin A1 of connector DK21451 and pin 88 of DM24504C.
 - Re-connect the electrical connector DM24504C to the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - Re-install the left door area heat relay, K21451, in the P110 panel (WDM 21-45-21).
 - Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - If the maintenance message does not show on the ground test display, you corrected the fault.
 - If the maintenance message shows on the ground test display, then continue.
 - If there is not a problem with the wiring, then do the steps that follow:
 - Re-install the left door area heat relay, K21451, in the P110 panel (WDM 21-45-21).
 - Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - If the maintenance message does not show on the ground test display, you corrected the fault.
 - If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor card, M24518, in the P110 panel.
- These are the tasks:
- Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
- Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - If the maintenance message does not show on the ground test display, you corrected the fault.
 - If the maintenance message shows on the ground test display, then continue.
- (5) Replace the current monitor, M24605, in the P110 panel.
- These are the tasks:
- Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
- Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.



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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (6) Do a check of the internal wiring in the P110 panel for the left door area heat relay circuit (WDM 21-45-21).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

830. Relay (DR HEAT R1 and R2) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13113.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for power to the right door area heat relay, K21452, in the P210 panel:
 - (a) Remove the right door area heat relay, K21452, in the P210 panel (WDM 21-45-22).
 - (b) Do a check for 28V DC at pin X1 of connector DK21452 at the P210 panel.
 - (c) If there is not 28V DC at pin X1 of connector DK21452, then do the steps that follow:
 - 1) Repair the wiring between pin X1 of DK21452 and pin 2 of this circuit breaker:
(WDM 21-45-22)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	C21683	R DR 1-5 HTR CTRL

- 2) Re-install the right door area heat relay, K21452, in the P210 panel (WDM 21-45-22).
- 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- 5) If the maintenance message shows on the ground test display, then continue.

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- (d) If there is 28V DC at pin X1 of connector DK21452, then continue.
- (2) Do a check for path to ground for the right door area heat relay, K21452, in the P210 panel:
 - (a) Disconnect the electrical connector DM24508B from the Signal Interface Unit (1), M24508. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Do a wiring check between pin X2 of connector DK21452 and pin 7 of DM24508B.
 - (c) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin X2 of connector DK21452 and pin 7 of DM24508B.
 - 2) Re-connect the electrical connector DM24508B to the Signal Interface Unit (1), M24508. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the right door area heat relay, K21452, in the P210 panel (WDM 21-45-22).
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
 - (d) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Replace the right door area heat relay, K21452, in the P210 panel (WDM 21-45-21).
 - 2) Re-connect the electrical connector DM24508B to the Signal Interface Unit (1), M24508. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the wiring between the relay, K21452, and the SIU, M24508:
 - (a) Remove the right door area heat relay, K21452, in the P210 panel (WDM 21-45-22).
 - (b) Disconnect the electrical connector DM24508C from the Signal Interface Unit (1), M24508. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (c) Do a wiring check between pin A1 of connector DK21452 and pin 80 of DM24508C. (WDM 21-45-22)
 - (d) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin A1 of connector DK21452 and pin 80 of DM24508C.
 - 2) Re-connect the electrical connector DM24508C to the Signal Interface Unit (1), M24508. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the right door area heat relay, K21452, in the P210 panel (WDM 21-45-22).
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.

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- 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- 6) If the maintenance message shows on the ground test display, then continue.
- (e) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Re-install the right door area heat relay, K21452, in the P210 panel (WDM 21-45-22).
 - 2) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.

This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor card, M24519, in the P210 panel.

These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the current monitor, M24639, in the P210 panel.

These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (6) Do a check of the internal wiring in the P110 panel for the right door area heat relay circuit (WDM 21-45-22).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

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831. Relay (DR HEAT L3, L4 and L5) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13083.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for power to the left door area heat relay, K21018, in the P110 panel:
 - (a) Remove the left door area heat relay, K21018, in the P110 panel (WDM 21-45-21).
 - (b) Do a check for 28V DC at pin X1 of connector DK21018 at the P110 panel.
 - (c) If there is not 28V DC at pin X1 of connector DK21018, then do the steps that follow:
 - 1) Repair the wiring between pin X1 of DK21018 and pin 2 of this circuit breaker:
(WDM 21-45-21)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	27	C21684	L DR 1-5 HTR CTRL
 - 2) Re-install the left door area heat relay, K21018, in the P110 panel (WDM 21-45-21).
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
 - (d) If there is 28V DC at pin X1 of connector DK21018, then continue.
- (2) Do a check for path to ground for the left door area heat relay, K21018, in the P110 panel:
 - (a) Disconnect the electrical connector DM24504B from the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Do a wiring check between pin X2 of connector DK21018 and pin 14 of DM24504B.
 - (c) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin X2 of connector DK21018 and pin 14 of DM24504B.
 - 2) Re-connect the electrical connector DM24504B to the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the left door area heat relay, K21018, in the P110 panel (WDM 21-45-21).
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.

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- 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- 6) If the maintenance message shows on the ground test display, then continue.
- (d) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Replace the left door area heat relay, K21018, in the P110 panel (WDM 21-45-21).
 - 2) Re-connect the electrical connector DM24504B to the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the wiring between the relay, K21018, and the SIU, M24504:
 - (a) Remove the left door area heat relay, K21018, in the P110 panel (WDM 21-45-21).
 - (b) Disconnect the electrical connector DM24504C from the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (c) Do a wiring check between pin D1 of connector DK21018 and pin 83 of DM24504C.
 - (d) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin D1 of connector DK21018 and pin 83 of DM24504C.
 - 2) Re-connect the electrical connector DM24504C to the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the left door area heat relay, K21018, in the P110 panel (WDM 21-45-21).
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
 - (e) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Re-install the left door area heat relay, K21018, in the P110 panel (WDM 21-45-21).
 - 2) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor card, M24518, in the P110 panel.
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,

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Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the current monitor, M24607, in the P110 panel.

These are the tasks:

Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,

Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (6) Do a check of the internal wiring in the P110 panel for the left door area heat relay circuit (WDM 21-45-21).
- (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

832. Relay (DR HEAT R3, R4 and R5) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13084.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for power to the right door area heat relay, K21019, in the P210 panel:
 - (a) Remove the right door area heat relay, K21019, in the P210 panel (WDM 21-45-22).
 - (b) Do a check for 28V DC at pin X1 of connector DK21019 at the P210 panel.
 - (c) If there is not 28V DC at pin X1 of connector DK21019, then do the steps that follow:

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- 1) Repair the wiring between pin X1 of DK21019 and pin 2 of this circuit breaker:
(WDM 21-45-22)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	C21683	R DR 1-5 HTR CTRL

- 2) Re-install the right door area heat relay, K21019, in the P210 panel (WDM 21-45-22).
- 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- 5) If the maintenance message shows on the ground test display, then continue.
- (d) If there is 28V DC at pin X1 of connector DK21019, then continue.
- (2) Do a check for path to ground for the right door area heat relay, K21019, in the P210 panel:
 - (a) Disconnect the electrical connector DM24508B from the Signal Interface Unit (1), M24508. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Do a wiring check between pin X2 of connector DK21019 and pin 6 of DM24508B.
 - (c) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin X2 of connector DK21019 and pin 6 of DM24508B.
 - 2) Re-connect the electrical connector DM24508B to the Signal Interface Unit (1), M24508. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the right door area heat relay, K21019, in the P210 panel (WDM 21-45-22).
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
 - (d) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Replace the right door area heat relay, K21019, in the P210 panel (WDM 21-45-21).
 - 2) Re-connect the electrical connector DM24508B to the Signal Interface Unit (1), M24508. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the wiring between the relay, K21019, and the SIU, M24508:
 - (a) Remove the right door area heat relay, K21019, in the P210 panel (WDM 21-45-22).

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- (b) Disconnect the electrical connector DM24508C from the Signal Interface Unit (1), M24508. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
- (c) Do a wiring check between pin D1 of connector DK21019 and pin 79 of DM24508C. (WDM 21-45-22)
- (d) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin D1 of connector DK21019 and pin 79 of DM24508C.
 - 2) Re-connect the electrical connector DM24508C to the Signal Interface Unit (1), M24508. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the right door area heat relay, K21019, in the P210 panel (WDM 21-45-22).
 - 4) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (e) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Re-install the right door area heat relay, K21019, in the P210 panel (WDM 21-45-22).
 - 2) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor card, M24519, in the P210 panel.
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the current monitor, M24641, in the P210 panel.
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.



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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (6) Do a check of the internal wiring in the P110 panel for the right door area heat relay circuit (WDM 21-45-22).
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

833. Door Area Heater (Left 1) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13013.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message 21-13176, then do the Fault Isolation Procedure for that maintenance message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for electrical power to the left door 1 area heater, B21455:
 - (a) Disconnect connector DB21455 from the left door 1 area heater, B21455.
 - (b) Do a check for 115V AC between pin 1 of connector DB21455 and the structure ground (WDM 21-45-21).
 - (c) If there is 115V AC between pin 1 of connector DB21455, and structure ground, then do these steps:
 - 1) Replace the heater, B21455.
These are the tasks:
Door Area Heater Removal, AMM TASK 21-45-03-000-801,
Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (d) If there is not 115V AC between pin 1 of connector DB21455, and structure ground, then do these steps:
 - 1) Repair the wiring between pin 1 of connector DB21455 and pin A1 of connector DK21451 (WDM 21-45-21).
 - 2) Re-connect connector DB21455 to the heater, B21455.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check for path to ground for the left door 1 area heater, B21455:
 - (a) Disconnect connector DB21455 from the left door 1 area heater, B21455.
 - (b) Do a continuity check between pins 2 and 3 of connector DB21455 and the structure ground (WDM 21-45-21).
 - (c) If there is not continuity between pins 2 and 3 of connector DB21455 and the structure ground, then do these steps:
 - 1) Repair the wiring (WDM 21-45-21).
 - 2) Re-connect connector DB21455 to the heater, B21455.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is continuity between pins 2 and 3 of connector DB21455 and the structure ground, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor card, M24518, in the P110 panel. To replace the current monitor, These are the tasks:

Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,

Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the current monitor card, M24605, in the P110 panel. To replace the current monitor,

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These are the tasks:

Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,

Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

834. Door Area Heater (Right 1) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13014.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message 21-13113, then do the Fault Isolation Procedure for that maintenance message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for electrical power to the right door 1 area heater, B21459:
 - (a) Disconnect connector DB21459 from the right door 1 area heater, B21459.
 - (b) Do a check for 115V AC between pin 1 of connector DB21459 and the structure ground (WDM 21-45-22).
 - (c) If there is 115V AC between pin 1 of connector DB21459, and structure ground, then do these steps:
 - 1) Replace the heater, B21459.

These are the tasks:
Door Area Heater Removal, AMM TASK 21-45-03-000-801,
Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is not 115V AC between pin 1 of connector DB21459, and structure ground, then do these steps:
 - 1) Repair the wiring between pin 1 of connector DB21459 and pin A1 of connector DK21452 (WDM 21-45-22).
 - 2) Re-connect connector DB21459 to the heater, B21459.

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- 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check for path to ground for the right door 1 area heater, B21459:
- (a) Disconnect connector DB21459 from the right door 1 area heater, B21459.
 - (b) Do a continuity check between pins 2 and 3 of connector DB21459 and the structure ground (WDM 21-45-22).
 - (c) If there is not continuity between pins 2 and 3 of connector DB21459 and the structure ground, then do these steps:
 - 1) Repair the wiring (WDM 21-45-22).
 - 2) Re-connect connector DB21459 to the heater, B21459.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is continuity between pins 2 and 3 of connector DB21459 and the structure ground, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor card, M24519, in the P210 panel. To replace the current monitor, These are the tasks:
- Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the current monitor card, M24639, in the P210 panel. To replace the current monitor, These are the tasks:
- Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.



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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

835. Door Area Heater (Right 2) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13023.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message 21-13113, then do the Fault Isolation Procedure for that maintenance message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for electrical power to the right door 2 area heater, B21200:
 - (a) Disconnect connector DB21200 from the right door 2 area heater, B21200.
 - (b) Do a check for 115V AC between pin 1 of connector DB21200 and the structure ground (WDM 21-45-22).
 - (c) If there is 115V AC between pin 1 of connector DB21200, and structure ground, then do these steps:
 - 1) Replace the heater, B21200.
These are the tasks:
Door Area Heater Removal, AMM TASK 21-45-03-000-801,
Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is not 115V AC between pin 1 of connector DB21200, and structure ground, then do these steps:
 - 1) Repair the wiring between pin 1 of connector DB21200 and pin B1 of connector DK21452 (WDM 21-45-22).
 - 2) Re-connect connector DB21200 to the heater, B21200.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.

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- (2) Do a check for path to ground for the right door 2 area heater, B21200:
 - (a) Disconnect connector DB21200 from the right door 2 area heater, B21200.
 - (b) Do a continuity check between pins 2 and 3 of connector DB21200 and the structure ground (WDM 21-45-22).
 - (c) If there is not continuity between pins 2 and 3 of connector DB21200 and the structure ground, then do these steps:
 - 1) Repair the wiring (WDM 21-45-22).
 - 2) Re-connect connector DB21200 to the heater, B21200.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is continuity between pins 2 and 3 of connector DB21200 and the structure ground, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor, M24640, in the P210 panel. To replace the current monitor, These are the tasks:

Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

836. Door Area Heater (Left 3) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13343.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message 21-13083, then do the Fault Isolation Procedure for that maintenance message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.

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- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for electrical power to the left door 3 area heater, B21460:
 - (a) Disconnect connector DB21460 from the left door 3 area heater, B21460.
 - (b) Do a check for 115V AC between pin 1 of connector DB21460 and the structure ground (WDM 21-45-21).
 - (c) If there is 115V AC between pin 1 of connector DB21460, and structure ground, then do these steps:
 - 1) Replace the heater, B21460.
These are the tasks:
Door Area Heater Removal, AMM TASK 21-45-03-000-801,
Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is not 115V AC between pin 1 of connector DB21460, and structure ground, then do these steps:
 - 1) Repair the wiring between pin 1 of connector DB21460 and pin D1 of connector DK21018 (WDM 21-45-21).
 - 2) Re-connect connector DB21460 to the heater, B21460.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check for path to ground for the left door 3 area heater, B21460:
 - (a) Disconnect connector DB21460 from the left door 3 area heater, B21460.
 - (b) Do a continuity check between pins 2 and 3 of connector DB21460 and the structure ground (WDM 21-45-21).
 - (c) If there is not continuity between pins 2 and 3 of connector DB21460 and the structure ground, then do these steps:
 - 1) Repair the wiring (WDM 21-45-21).
 - 2) Re-connect connector DB21460 to the heater, B21460.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is continuity between pins 2 and 3 of connector DB21460 and the structure ground, then continue.

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- (3) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor card, M24518, in the P110 panel. To replace the current monitor, These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the current monitor, M24607, in the P110 panel. To replace the current monitor, These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

837. Door Area Heater (Right 3) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13344.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message 21-13084, then do the Fault Isolation Procedure for that maintenance message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Do a check for electrical power to the right door 3 area heater, B21461:
 - (a) Disconnect connector DB21461 from the right door 3 area heater, B21461.
 - (b) Do a check for 115V AC between pin 1 of connector DB21461 and the structure ground (WDM 21-45-22).
 - (c) If there is 115V AC between pin 1 of connector DB21461, and structure ground, then do these steps:
 - 1) Replace the heater, B21461.
These are the tasks:
Door Area Heater Removal, AMM TASK 21-45-03-000-801,
Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is not 115V AC between pin 1 of connector DB21461, and structure ground, then do these steps:
 - 1) Repair the wiring between pin 1 of connector DB21461 and pin D1 of connector DK21019 (WDM 21-45-22).
 - 2) Re-connect connector DB21461 to the heater, B21461.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check for path to ground for the right door 3 area heater, B21461:
 - (a) Disconnect connector DB21461 from the right door 3 area heater, B21461.
 - (b) Do a continuity check between pins 2 and 3 of connector DB21461 and the structure ground (WDM 21-45-22).
 - (c) If there is not continuity between pins 2 and 3 of connector DB21461 and the structure ground, then do these steps:
 - 1) Repair the wiring (WDM 21-45-22).
 - 2) Re-connect connector DB21461 to the heater, B21461.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is continuity between pins 2 and 3 of connector DB21461 and the structure ground, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

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- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor card, M24519, in the P210 panel. To replace the current monitor, These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the current monitor, M24641, in the P210 panel. To replace the current monitor, These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

838. Door Area Heater (Left 4) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13073.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message 21-13083, then do the Fault Isolation Procedure for that maintenance message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for electrical power to the left door 4 area heater, B21457:
 - (a) Disconnect connector DB21457 from the left door 4 area heater, B21457.
 - (b) Do a check for 115V AC between pin 1 of connector DB21457 and the structure ground (WDM 21-45-21).

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- (c) If there is 115V AC between pin 1 of connector DB21457, and structure ground, then do these steps:
 - 1) Replace the heater, B21457.
These are the tasks:
Door Area Heater Removal, AMM TASK 21-45-03-000-801,
Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If there is not 115V AC between pin 1 of connector DB21457, and structure ground, then do these steps:
 - 1) Repair the wiring between pin 1 of connector DB21457 and pin C1 of connector DK21018 (WDM 21-45-21).
 - 2) Re-connect connector DB21457 to the heater, B21457.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check for path to ground for the left door 4 area heater, B21457:
 - (a) Disconnect connector DB21457 from the left door 4 area heater, B21457.
 - (b) Do a continuity check between pins 2 and 3 of connector DB21457 and the structure ground (WDM 21-45-21).
 - (c) If there is not continuity between pins 2 and 3 of connector DB21457 and the structure ground, then do these steps:
 - 1) Repair the wiring (WDM 21-45-21).
 - 2) Re-connect connector DB21457 to the heater, B21457.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is continuity between pins 2 and 3 of connector DB21457 and the structure ground, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor, M24608, in the P110 panel. To replace the current monitor,

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These are the tasks:

Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,

Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

839. Door Area Heater (Right 4) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13074.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message 21-13084, then do the Fault Isolation Procedure for that maintenance message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for electrical power to the right door 4 area heater, B21201:
 - (a) Disconnect connector DB21201 from the right door 4 area heater, B21201.
 - (b) Do a check for 115V AC between pin 1 of connector DB21201 and the structure ground (WDM 21-45-22).
 - (c) If there is 115V AC between pin 1 of connector DB21201, and structure ground, then do these steps:
 - 1) Replace the heater, B21201.

These are the tasks:

Door Area Heater Removal, AMM TASK 21-45-03-000-801,

Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is not 115V AC between pin 1 of connector DB21201, and structure ground, then do these steps:
 - 1) Repair the wiring between pin 1 of connector DB21201 and pin C1 of connector DK21019 (WDM 21-45-22).
 - 2) Re-connect connector DB21201 to the heater, B21201.

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- 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check for path to ground for the right door 4 area heater, B21201:
- (a) Disconnect connector DB21201 from the right door 4 area heater, B21201.
 - (b) Do a continuity check between pins 2 and 3 of connector DB21201 and the structure ground (WDM 21-45-22).
 - (c) If there is not continuity between pins 2 and 3 of connector DB21201 and the structure ground, then do these steps:
 - 1) Repair the wiring (WDM 21-45-22).
 - 2) Re-connect connector DB21201 to the heater, B21201.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is continuity between pins 2 and 3 of connector DB21201 and the structure ground, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor, M24642, in the P210 panel. To replace the current monitor, These are the tasks:
- Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

840. Door Area Heater (Left 5) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13333.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message 21-13083, then do the Fault Isolation Procedure for that maintenance message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for electrical power to the left door 5 area heater, B21458:
 - (a) Disconnect connector DB21458 from the left door 5 area heater, B21458.
 - (b) Do a check for 115V AC between pin 1 of connector DB21458 and the structure ground (WDM 21-45-21).
 - (c) If there is 115V AC between pin 1 of connector DB21458, and structure ground, then do these steps:
 - 1) Replace the heater, B21458.
These are the tasks:
Door Area Heater Removal, AMM TASK 21-45-03-000-801,
Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - (d) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (e) If the maintenance message does not show on the ground test display, you corrected the fault.
- (2) If there is not 115V AC between pin 1 of connector DB21458, and structure ground, then do these steps:
 - 1) Repair the wiring between pin 1 of connector DB21458 and pin B1 of connector DK21018 (WDM 21-45-21).
 - 2) Re-connect connector DB21458 to the heater, B21458.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check for path to ground for the left door 5 area heater, B21458:
 - (a) Disconnect connector DB21458 from the left door 5 area heater, B21458.
 - (b) Do a continuity check between pins 2 and 3 of connector DB21458 and the structure ground (WDM 21-45-21).
 - (c) If there is not continuity between pins 2 and 3 of connector DB21458 and the structure ground, then do these steps:
 - 1) Repair the wiring (WDM 21-45-21).

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- 2) Re-connect connector DB21458 to the heater, B21458.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If there is continuity between pins 2 and 3 of connector DB21458 and the structure ground, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor, M24600, in the P110 panel. To replace the current monitor, These are the tasks:
- Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

841. Door Area Heater (Right 5) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13334.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message 21-13084, then do the Fault Isolation Procedure for that maintenance message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for electrical power to the right door 5 area heater, B21202:
 - (a) Disconnect connector DB21201 from the right door 5 area heater, B21202.

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- (b) Do a check for 115V AC between pin 1 of connector DB21202 and the structure ground (WDM 21-45-22).
- (c) If there is 115V AC between pin 1 of connector DB21202, and structure ground, then do these steps:
 - 1) Replace the heater, B21202.
These are the tasks:
Door Area Heater Removal, AMM TASK 21-45-03-000-801,
Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If there is not 115V AC between pin 1 of connector DB21202, and structure ground, then do these steps:
 - 1) Repair the wiring between pin 1 of connector DB21202 and pin B1 of connector DK21019 (WDM 21-45-22).
 - 2) Re-connect connector DB21202 to the heater, B21202.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (2) Do a check for path to ground for the right door 5 area heater, B21202:
 - (a) Disconnect connector DB21202 from the right door 5 area heater, B21202.
 - (b) Do a continuity check between pins 2 and 3 of connector DB21202 and the structure ground (WDM 21-45-22).
 - (c) If there is not continuity between pins 2 and 3 of connector DB21202 and the structure ground, then do these steps:
 - 1) Repair the wiring (WDM 21-45-22).
 - 2) Re-connect connector DB21202 to the heater, B21202.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is continuity between pins 2 and 3 of connector DB21202 and the structure ground, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor, M24681, in the P210 panel. To replace the current monitor, These are the tasks:
 - Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
 - Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
- (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

842. Relay (Forward Galley Heater) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13178.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - (b) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do the steps that follow to check for electrical power to the forward galley heater relay, K21456:
 - (a) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (b) Remove the forward galley heater relay, K21456 (WDM 21-45-41).
 - (c) Do a check for 3-phase 115/208 VAC between these pins of connector DK21456 in the P110 panel:

DK21456		DK21456	
pin A2	.....	pin B2	
pin A2	.....	pin C2	
pin B2	.....	pin C2	

- (d) If you do not find 115/208 VAC between pins A2, B2, and C2, then do the steps that follow:
 - 1) Repair the wiring between connector DK21456 and this circuit breaker:
(WDM 21-45-41)

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Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C21303	FWD GLY HTR

- 2) Re-install the forward galley heater relay, K21456 (WDM 21-45-41).
 - 3) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 4) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 6) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (e) If you do find 115/208 VAC between pins A2, B2, and C2, then continue.
- (2) Do the steps that follow to check for electrical control for the forward galley heater relay, K21456:
- (a) Do a check for 28V DC at pin X1 of connector DK21456 at the P110 panel. (WDM 21-45-41)
 - (b) If there is not 28V DC at pin X1 of connector DK21456, then do the steps that follow:
 - 1) Repair the wiring between pin X1 of DK21456 and pin 2 of this circuit breaker: (WDM 21-45-41)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	22	C21649	FWD GLY HTR CTRL

- 2) Re-install the forward galley heater relay, K21456 (WDM 21-45-41).
 - 3) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 4) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 6) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (c) If there is 28V DC at pin X1 of connector DK21456, then do the steps that follow:
- 1) Replace the forward galley heater relay, K21456, in the P110 panel (WDM 21-45-41).
 - 2) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 3) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do a check of the wiring between the relay, K21456, and the SIU, M24504:
 - (a) Disconnect the electrical connectors DM24504B and DM24504C from the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the forward galley heater relay, K21456 (WDM 21-45-41).
 - (c) Do a wiring check between pin X2 of connector DK21456 and pin 13 of DM24504B. (WDM 21-45-41)
 - (d) Do a wiring check between pin A1 of connector DK21456 and pin 85 of DM24504C. (WDM 21-45-41)
 - (e) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring.
 - 2) Re-connect the electrical connectors DM24504B and DM24504C to the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the forward galley heater relay, K21456 (WDM 21-45-41).
 - 4) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 5) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 7) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
 - (f) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 2) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 3) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (4) Replace the current monitor card, M24518, in the P110 panel.
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.

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- (b) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

843. Relay (Aft Galley Heater 1) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13179.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - (b) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do the steps that follow to check for electrical power to the aft galley heater 1 relay, K21455:
 - (a) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (b) Remove the aft galley heater 1 relay, K21455 (WDM 21-45-31).
 - (c) Do a check for 3-phase 115/208 VAC between these pins of connector DK21455 in the P110 panel:

DK21455		DK21455	
pin A2	.....	pin B2	
pin A2	.....	pin C2	
pin B2	.....	pin C2	

- (d) If you do not find 115/208 VAC between pins A2, B2, and C2, then do the steps that follow:

- 1) Repair the wiring between connector DK21455 and this circuit breaker:
(WDM 21-45-31)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	2	C21304	AFT GLY HTR 1

- 2) Re-install the aft galley heater 1 relay, K21455 (WDM 21-45-31).
 - 3) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.

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- 4) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 6) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (e) If you do find 115/208 VAC between pins A2, B2, and C2, then continue.
- (2) Do the steps that follow to check for electrical control for the aft galley heater 1 relay, K21455:
- (a) Do a check for 28V DC at pin X1 of connector DK21455 at the P110 panel. (WDM 21-45-31)
 - (b) If there is not 28V DC at pin X1 of connector DK21455, then do the steps that follow:
 - 1) Repair the wiring between pin X1 of DK21455 and pin 2 of the circuit breaker, C21650 (WDM 21-45-31):
 - a) Repair the wiring between pin X1 of DK21455 and pin 2 of the circuit breaker, C21650:
- Left Power Management Panel, P110**
- | <u>Row</u> | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|------------|------------|---------------|------------------------|
| H | 21 | C21650 | AFT GLY HTR 1 & 2 CTRL |
- 2) Re-install the aft galley heater 1 relay, K21455 (WDM 21-45-31).
 - 3) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 4) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 6) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (c) If there is 28V DC at pin X1 of connector DK21455, then do the steps that follow:
- 1) Replace the aft galley heater 1 relay, K21455, in the P110 panel (WDM 21-45-31).
 - 2) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 3) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do a check of the wiring between the relay, K21455, and the SIU, M24504:
- (a) Disconnect the electrical connectors DM24504B and DM24504C from the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the aft galley heater 1 relay, K21455 (WDM 21-45-31).

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- (c) Do a wiring check between pin X2 of connector DK21455 and pin 11 of DM24504B. (WDM 21-45-31)
- (d) Do a wiring check between pin A1 of connector DK21455 and pin 84 of DM24504C. (WDM 21-45-31)
- (e) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring.
 - 2) Re-connect the electrical connectors DM24504B and DM24504C to the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the aft galley heater 1 relay, K21455 (WDM 21-45-31).
 - 4) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 5) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 7) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (f) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 2) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 3) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (4) Replace the current monitor card, M24518, in the P110 panel.
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - (b) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

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844. Relay (Aft Galley Heater 2) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13180.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - (b) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do the steps that follow to check for electrical power to the aft galley heater 2 relay, K21457:
 - (a) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (b) Remove the aft galley heater 2 relay, K21457 (WDM 21-45-32).
 - (c) Do a check for 3-phase 115/208 VAC between these pins of connector DK21457 in the P110 panel:

DK21457	DK21457
pin A2	pin B2
pin A2	pin C2
pin B2	pin C2

- (d) If you do not find 115/208 VAC between pins A2, B2, and C2, then do the steps that follow:

- 1) Repair the wiring between connector DK21457 and this circuit breaker:
(WDM 21-45-32)

Left Power Management Panel, P110

Row	Col	Number	Name
C	2	C21305	AFT GLY HTR 2

- 2) Re-install the aft galley heater 2 relay, K21457 (WDM 21-45-32).
- 3) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
- 4) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
- 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- 6) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
 - (e) If you do find 115/208 VAC between pins A2, B2, and C2, then continue.
 - (2) Do the steps that follow to check for electrical control for the aft galley heater 2 relay, K21457:
 - (a) Do a check for 28V DC at pin X1 of connector DK21457 at the P110 panel. (WDM 21-45-32)
 - (b) If there is not 28V DC at pin X1 of connector DK21457, then do the steps that follow:
 - 1) Repair the wiring between pin X1 of DK21457 and pin 2 of this circuit breaker:
(WDM 21-45-32)
- Left Power Management Panel, P110**
- | <u>Row</u> | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|------------|------------|---------------|------------------------|
| H | 21 | C21650 | AFT GLY HTR 1 & 2 CTRL |
- 2) Re-install the aft galley heater 2 relay, K21457 (WDM 21-45-32).
 - 3) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 4) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 6) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
 - (c) If there is 28V DC at pin X1 of connector DK21457, then do the steps that follow:
 - 1) Replace the aft galley heater 2 relay, K21457, in the P110 panel (WDM 21-45-32).
 - 2) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 3) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
 - (3) Do a check of the wiring between the relay, K21457, and the SIU, M24504:
 - (a) Disconnect the electrical connectors DM24504B and DM24504C from the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the aft galley heater 2 relay, K21457 (WDM 21-45-32).
 - (c) Do a wiring check between pin X2 of connector DK21457 and pin 8 of DM24504B. (WDM 21-45-32)
 - (d) Do a wiring check between pin A1 of connector DK21455 and pin 87 of DM24504C. (WDM 21-45-32)
 - (e) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring.

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- 2) Re-connect the electrical connectors DM24504B and DM24504C to the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the aft galley heater 2 relay, K21457 (WDM 21-45-32).
 - 4) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 5) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 7) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (f) If there is not a problem with the wiring, then do the steps that follow:



MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE ELMS PANELS BEFORE YOU REMOVE COMPONENTS OF THE PANELS. IF YOU DO NOT REMOVE ELECTRICAL POWER, DAMAGE TO EQUIPMENT CAN OCCUR.

- 1) Do a check of the Signal Interface Unit (SIU) 1, M24504 in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - a) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - b) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) on the existing faults display, then you corrected the fault.
NOTE: Wait up to 5 minutes, or until the maintenance message shows, after there is power to the ELMS panel before you read the status of the maintenance message from the MAT.
 - d) If the maintenance message shows on the existing fault display, then continue.
- (4) Replace the current monitor card, M24518, in the P110 panel.
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.
 - (a) Stop the air conditioning packs for 30 seconds, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - (b) Operate one of the air conditioning packs, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

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845. Relay (Captain's Foot and Shoulder Heaters) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13177.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:



OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
- (b) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
- (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
- (d) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do the steps that follow to check for electrical power to the Captain's foot and shoulder heaters relay, K21454:



OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
- (b) Remove the Captain's foot and shoulder heaters relay, K21454 (WDM 21-45-11).
- (c) Do a check for 3-phase 115/208 VAC between these pins of connector DK21454 in the P110 panel:

DK21454

pin A2	.....	pin B2
pin A2	.....	pin C2
pin B2	.....	pin C2

DK21454

- (d) If you do not find 115/208 VAC between pins A2, B2, and C2, then do the steps that follow:
 - 1) Repair the wiring between connector DK21454 and this circuit breaker:
(WDM 21-45-11)

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C21321	CAPT FT & SHLDR HTR

- 2) Re-install the Captain's foot and shoulder heaters relay, K21454 (WDM 21-45-11).
 - 3) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (e) If you do find 115/208 VAC between pins A2, B2, and C2, then continue.
- (2) Do the steps that follow to check for electrical control for the Captain's foot and shoulder heaters relay, K21454:



WARNING

OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
- (b) Do a check for 28V DC at pin X1 of connector DK21454 at the P110 panel. (WDM 21-45-11)
- (c) If there is not 28V DC at pin X1 of connector DK21454, then do the steps that follow:
 - 1) Repair the wiring between pin X1 of DK21454 and pin 2 of this circuit breaker: (WDM 21-45-11)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	20	C21654	CAPT FT & SHLDR HTR CTRL

- 2) Re-install the Captain's foot and shoulder heaters relay, K21454 (WDM 21-45-11).
 - 3) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (d) If there is 28V DC at pin X1 of connector DK21454, then do the steps that follow:
- 1) Replace the Captain's foot and shoulder heaters relay, K21454, in the P110 panel (WDM 21-45-11).
 - 2) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- 4) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do a check of the wiring between the relay, K21454, and the SIU, M24504:
 - (a) Disconnect the electrical connectors DM24504B and DM24504C from the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the Captain's foot and shoulder heaters relay, K21454, in the P110 panel (WDM 21-45-11).
 - (c) Do a wiring check between pin X2 of connector DK21454 and pin 10 of DM24504B. (WDM 21-45-11)
 - (d) Do a wiring check between pin A1 of connector DK21454 and pin 82 of DM24504C. (WDM 21-45-11)
 - (e) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring.
 - 2) Re-connect the electrical connectors DM24504B and DM24504C to the Signal Interface Unit (1), M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the Captain's foot and shoulder heaters relay, K21454, in the P110 panel (WDM 21-45-11).



WARNING

OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- 4) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
- 5) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
- 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 7) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (f) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.



WARNING

OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- 2) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
- 3) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.

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- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (4) Replace the current monitor card, M24518, in the P110 panel.

These are the tasks:

Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,

Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.



WARNING

OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
- (b) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

846. Relay (First Officer's Foot and Shoulder Heaters) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13153.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:



WARNING

OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
- (b) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
- (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
- (d) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Do the steps that follow to check for electrical power to the First Officer's foot and shoulder heaters relay, K21453:



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OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
- (b) Remove the First Officer's foot and shoulder heaters relay, K21453 (WDM 21-45-12).
- (c) Do a check for 3-phase 115/208 VAC between these pins of connector DK21453 in the P210 panel:

DK21453		DK21453
pin A2	.....	pin B2
pin A2	.....	pin C2
pin B2	.....	pin C2

- (d) If you do not find 115/208 VAC between pins A2, B2, and C2, then do the steps that follow:

- 1) Repair the wiring between connector DK21453 and this circuit breaker:
(WDM 21-45-12)

Right Power Management Panel, P210

Row	Col	Number	Name
B	27	C21320	F/O FT & SHLDR HTR

- 2) Re-install the First Officer's foot and shoulder heaters relay, K21453 (WDM 21-45-12).
- 3) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (e) If you do find 115/208 VAC between pins A2, B2, and C2, then continue.
- (2) Do the steps that follow to check for electrical control for the First Officer's foot and shoulder heaters relay, K21453:



WARNING

OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.

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- (b) Do a check for 28V DC at pin X1 of connector DK21453 at the P210 panel. (WDM 21-45-12)
- (c) If there is not 28V DC at pin X1 of connector DK21453, then do the steps that follow:
- 1) Repair the wiring between pin X1 of DK21453 and pin 2 of this circuit breaker: (WDM 21-45-12)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	5	C21653	F/O FT & SHLDR HTR CTRL

- 2) Re-install the First Officer's foot and shoulder heaters relay, K21453 (WDM 21-45-12).
 - 3) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (d) If there is 28V DC at pin X1 of connector DK21453, then do the steps that follow:
- 1) Replace the First Officer's foot and shoulder heaters relay, K21453, in the P210 panel (WDM 21-45-12).
 - 2) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 4) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do a check of the wiring between the relay, K21453, and the SIU, M24509:
- (a) Disconnect the electrical connectors DM24509B and DM24509C from the Signal Interface Unit (2), M24509. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the First Officer's foot and shoulder heaters relay, K21453, in the P210 panel (WDM 21-45-12).
 - (c) Do a wiring check between pin X2 of connector DK21453 and pin 5 of DM24509B. (WDM 21-45-12)
 - (d) Do a wiring check between pin A1 of connector DK21453 and pin 84 of DM24509C. (WDM 21-45-12)
 - (e) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring.
 - 2) Re-connect the electrical connectors DM24509B and DM24509C to the Signal Interface Unit (2), M24509. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the First Officer's foot and shoulder heaters relay, K21453, in the P210 panel (WDM 21-45-12).

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OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- 4) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
 - 5) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
 - 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 7) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (f) If there is not a problem with the wiring, then do the steps that follow:
- 1) Do a check of the Signal Interface Unit (2), M24509, in the P210 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.



OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- 2) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
 - 3) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 5) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (4) Replace the current monitor card, M24519, in the P210 panel.
These are the tasks:
Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.



OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Put the air/ground system in the air mode. To do this, do this task: Air Mode Simulation - Preparation, AMM TASK 32-09-00-040-801.
- (b) Put the air/ground system back to the ground mode. To do this, do this task: Air Mode Simulation - Restoration, AMM TASK 32-09-00-440-801.

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- 1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

853. Door Area Heater (Left 2) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-13024.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message 21-13176, then do the Fault Isolation Procedure for that maintenance message before you continue.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for electrical power to the left door 2 area heater, B21456:
 - (a) Disconnect connector DB21456 from the left door 2 area heater, B21456.
 - (b) Do a check for 115V AC between pin 1 of connector DB21456 and the structure ground (WDM 21-45-21).
 - (c) If there is 115V AC between pin 1 of connector DB21456, and structure ground, then do these steps:
 - 1) Replace the heater, B21456.
These are the tasks:
Door Area Heater Removal, AMM TASK 21-45-03-000-801,
Door Area Heater Installation, AMM TASK 21-45-03-400-801.
 - 2) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is not 115V AC between pin 1 of connector DB21456, and structure ground, then do these steps:
 - 1) Repair the wiring between pin 1 of connector DB21456 and pin B1 of connector DK21451 (WDM 21-45-21).
 - 2) Re-connect connector DB21456 to the heater, B21456.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.

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- (2) Do a check for path to ground for the left door 2 area heater, B21456:
 - (a) Disconnect connector DB21456 from the left door 2 area heater, B21456.
 - (b) Do a continuity check between pins 2 and 3 of connector DB21456 and the structure ground (WDM 21-45-21).
 - (c) If there is not continuity between pins 2 and 3 of connector DB21456 and the structure ground, then do these steps:
 - 1) Repair the wiring (WDM 21-45-21).
 - 2) Re-connect connector DB21456 to the heater, B21456.
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If there is continuity between pins 2 and 3 of connector DB21456 and the structure ground, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the current monitor card, M24518, in the P110 panel. To replace the current monitor, These are the tasks:

Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the current monitor card, M24606, in the P110 panel. To replace the current monitor, These are the tasks:

Current Monitor Card - Removal, AMM TASK 24-09-00-000-817-002,
Current Monitor Card - Installation, AMM TASK 24-09-00-400-813-002.

 - (a) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

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801. Left Pack Primary Heat Exchanger Inlet Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22801.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check at the primary heat exchanger temperature sensor:
 - (a) Disconnect connector DM21508 from the left pack primary heat exchanger inlet temperature sensor, M21508.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor, M21508 (WDM 21-51-51).
 - 1) Pin 1 and pin 4
 - 2) Pin 2 and pin 3
 - (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

 - 1) Replace the temperature sensor, M21508.

These are the tasks:
Primary Heat Exchanger Inlet Temperature Sensor Removal, AMM TASK 21-51-04-000-801,
Primary Heat Exchanger Inlet Temperature Sensor Installation, AMM TASK 21-51-04-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 500-575 ohms, then continue.

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.
 - (e) Re-connect DM21508.
- (2) Replace the left cabin temperature controller (CTC-L), M21631.

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These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the CTC-L to the temperature sensor:
 - (a) Remove the left cabin temperature controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DM21508 from the left pack primary heat exchanger inlet temperature sensor, M21508.
 - (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21508 at the temperature sensor, M21508 (WDM 21-51-51):

DM21631AD	DM21508
pin A1	pin 1
pin A2	pin 4
pin B1	pin 2
pin B2	pin 3

- (d) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21508 at the temperature sensor, M21508 (WDM 21-51-51).

DM21631AA	DM21508
pin J1	pin 2
pin J2	pin 3
pin K1	pin 1
pin K2	pin 4

- (e) If you find a problem with the wiring, do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21508.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

802. (CTC) Diff Press Sensor for the Left Pack Flow Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23001.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for damage to the tube assembly that connects the CTC differential pressure sensor to the left pack flow sensor, M21536.
 - (a) If the tube assembly is damaged, then do these steps:
 - 1) Repair the tube assembly.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the tube assembly is not damaged, then continue.
- (2) Disconnect connector DM21536B from the pressure sensor (WDM 21-51-51).
- (3) Do a check for 28 VDC at pin 1 and pin 2 of connector DM21536B (WDM 21-51-51).
- (4) If there is 28 VDC at pin 1 of connector DM21536B, then do these steps:
 - (a) Replace the flow sensor, M21536.

These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
 - (e) Remove the left Cabin Temperature Controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (f) Disconnect connector DM21536B from the pressure sensor.
 - (g) Do a wiring check between these pins of connectors DM21631AE and DM21631AB on the E1-2 shelf and connector DM21536B at the pressure sensor, M21536M2 (WDM 21-51-51):

DM21631AE

pin E2

pin E3

DM21536B

pin 3

pin 4

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DM21631AB

pin F2 pin 3
pin F3 pin 4

DM21536B

- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21536B.
 - 3) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (i) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DM21536B.
 - 2) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (5) If there is not 28 VDC at pin 1 of connector DM21536B, then do these steps (WDM 21-51-51):
 - (a) Do a continuity check between pin 2 of connector DM21536B and structure ground.
 - (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21536B.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If you do not find a problem with the wiring, then do these steps:
 - 1) Do a check for 28 VDC between terminal QB45 of terminal block TB1201 at the E1-2 shelf and structure ground (WDM 21-51-51):
 - 2) If there is not 28 VDC at terminal QB45 of TB1201, then do these steps:
 - a) Repair the wiring between circuit breaker C21627, on the Left Power Management Panel, P110, and terminal QB45 of TB1201 at the E1-2 shelf (WDM 21-51-51).
 - b) Re-connect connector DM21536B.
 - c) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If there is 28 VDC at terminal QB45 of terminal block TB1201, then do these steps:

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- a) Repair the wiring between terminal QB45 of terminal block TB1201 at the E1-2 shelf, and pin 1 of connector DM21536B on the pressure sensor (WDM 21-51-51).
- b) Re-connect connector DM21536B.
- c) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Left Cabin Temperature Controller.
- d) If the maintenance message does not show on the ground test display, you corrected the fault.

— END OF TASK —

803. Inlet Pressure Sensor for the L Flow Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23041.

B. Initial Evaluation

- (1) Use the MAT to do a check of the fault history for maintenance message 21-23041.
- (2) If the MAT shows a continuing history of fault message 21-23041 after the inlet pressure sensor has been replaced, then it is recommended that you do the fault isolation task for the left manifold pressure sensor: Manifold Pressure Sensor (Left) Signal Failed - Fault Isolation, 36-21 TASK 805.

NOTE: A continuing history of maintenance message 21-23041 can be an indication of a problem with the left manifold pressure sensor.

- (3) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for damage to the tube assembly that connects the inlet pressure sensor to the left pack flow sensor, M21536.
 - (a) If the tube assembly is damaged, then do these steps:
 - 1) Repair the tube assembly.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the tube assembly is not damaged, then continue.
- (2) Disconnect connector DM21536C from the pressure sensor (WDM 21-51-51).
- (3) Do a check for 28 VDC at pin 1 and pin 2 of connector DM21536C (WDM 21-51-51).
- (4) If there is 28 VDC at pin 1 and pin 2 of connector DM21536C, then do these steps:
 - (a) Replace the flow sensor, M21536.

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These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.

- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
- (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.
- (e) Remove the left Cabin Temperature Controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (f) Disconnect connector DM21536C from the pressure sensor.
- (g) Do a wiring check between these pins of connectors DM21631AE and DM21631AB on the E1-2 shelf and connector DM21536C at the pressure sensor, M21536M3 (WDM 21-51-51):

DM21631AE	DM21536C
pin C2	pin 3
pin C3	pin 4

DM21631AB	DM21536C
pin H2	pin 3
pin H3	pin 4

- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21536C.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (i) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DM21536C.
 - 2) Install a new CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (5) If there is not 28 VDC at pin 1 and pin 2 of connector DM21536C, then do these steps (WDM 21-51-51):
 - (a) Do a continuity check between pin 2 of connector DM21536C and structure ground.
 - (b) If you find a problem with the wiring, then do these steps:

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- 1) Repair the wiring.
 - 2) Re-connect connector DM21536C.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If you do not find a problem with the wiring, then do these steps:
- 1) Do a check for 28 VDC between terminal QB45 of terminal block TB1201 at the E1-2 shelf and structure ground (WDM 21-51-51).
 - 2) If there is not 28 VDC at terminal QB45 of terminal block TB1201, then do these steps:
 - a) Repair the wiring between circuit breaker C21627, on the Left Power Management Panel, P110, and terminal QB45 of terminal block TB1201 at the E1-2 shelf (WDM 21-51-51).
 - b) Re-connect connector DM21536C.
 - c) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If there is 28 VDC at terminal QB45 of terminal block TB1201, then do these steps:
 - a) Repair the wiring between terminal QB45 of terminal block TB1201 at the E1-2 shelf, and pin 1 of connector DM21536C on the pressure sensor (WDM 21-51-51).
 - b) Re-connect connector DM21536C.
 - c) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

804. (ASCP) Diff Press Sensor for the Left Pack Flow Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29911.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Do a check for damage to the tube assembly that connects the ASCPC differential pressure sensor to the left pack flow sensor, M21536.
 - (a) If the tube assembly is damaged, then do these steps:
 - 1) Repair the tube assembly.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the tube assembly is not damaged, then continue.

- (2) Disconnect connector DM21536A from the pressure sensor (WDM 21-51-51).
- (3) Do a check for 28 VDC at pin 1 and pin 2 of connector DM21536A (WDM 21-51-51).
- (4) If there is 28 VDC at pin 1 and pin 2 of connector DM21536A, then do these steps:

- (a) Replace the flow sensor, M21536.

These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.

- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message, then continue.
- (d) Remove the left Air Supply and Cabin Pressure Controller (ASCPC-L), M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- (e) Disconnect connector DM21536A from the pressure sensor.
- (f) Do a wiring check between these pins of connector DM36111AC at the E1-2 shelf and connector DM21536A at the pressure sensor, M21536M1 (WDM 21-51-51):

DM36111AC

pin C5 pin 3
pin D5 pin 4

DM21536A

- (g) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21536A.
 - 3) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (h) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect the connector DM21536A.
 - 2) Install a new ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- (5) If there is not 28 VDC at pin 1 of connector DM21536A, then do these steps (WDM 21-51-51):
- Remove the ASCPC-L, M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - Do a wiring check between these pins of connector DM36111AC at the E1-2 shelf and connector DM21536A at the pressure sensor, M21536M1 (WDM 21-51-51):

DM21536A

DM36111AC

pin 1 pin A5

- If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - Re-connect the connector DM21536A.
 - Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- If you do not find a problem with the wiring, then do these steps:
 - Re-connect the connector DM21536A.
 - Install a new ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

805. Left Pack Lower Flow Control and SOV (ASCPC Torque Motor) Problems - Fault Isolation

A. Initial Evaluation

- If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - If the maintenance message does not show on the ground test display, then there was an intermittent fault.

B. Fault Isolation Procedure

- Clean the lower flow control and shutoff valve filter:
Lower Flow Control and Shutoff Valve (FCSOV) Filter Cleaning, AMM TASK 21-51-02-000-803.
 - Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - If the maintenance message does not show on the ground test display, you corrected the fault.
 - If the maintenance message shows on the ground test display, then continue.
- Replace the lower flow control and shutoff valve filter:
These are the tasks:

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Lower Flow Control and Shutoff Valve (FCSOV) Filter Removal, AMM TASK 21-51-02-000-802.

Lower Flow Control and Shutoff Valve (FCSOV) Filter Installation, AMM TASK 21-51-02-400-802.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the lower flow control and shutoff valve, V21513.
- These are the tasks:
- Lower Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-02-000-801,
Lower Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-02-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring:
- (a) Disconnect connector DV21513C from the lower flow control and shutoff valve for the left pack, V21513.
 - (b) Remove the left air supply and cabin pressure controller (ASCPC-L) from the E1-2 shelf, M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (c) Do a wiring check between these pins of connector DM36111AB at the E1-2 shelf and connector DV21513C at the lower flow control and shutoff valve, V21513 (WDM 21-51-21):

DM36111AB	DV21513C
pin C2	pin 1
pin B2	pin 2

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector DV21513C.
 - 3) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DV21513C.
 - 2) Install a new ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.

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- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

806. Lower Flow Control and SOV (L Pack) Torque Motor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24001.

B. Initial Evaluation

- (1) Do these steps to check for a failed ASCPC compressor discharge temperature sensor:

NOTE: The ASCPC compressor discharge temperature sensor can fail in range with a high temperature indication. If the ASCPC senses a pack overheat condition, then it will close the two flow control valves independently of the CTC. When the CTC senses the two valves closed it transmits the two maintenance messages.

- (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - 4) 21 Cabin Temperature Control System
- (b) See if the fault display on the MAT shows the two maintenance messages 21-24001, Lower Flow Control and SOV (L Pack), and 21-24101, Upper Flow Control and SOV (L Pack).
- (2) If the two maintenance messages 21-24001 and 21-24101 show together on the MAT, then do these steps:
 - (a) Replace the ASCPC compressor discharge temperature sensor for the left pack, M21103.
To replace the temperature sensor, do the tasks that follow:
Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,
Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (c) If the two maintenance messages 21-24001 and 21-24101 do not show on the ground test display, then you corrected the fault.
 - (d) If only the maintenance message 21-24001 shows on the ground test display, then do the Fault Isolation - CTC to FCV Interface Problems procedure below.
 - (e) If only the maintenance message 21-24101 shows on the ground test display, then use the maintenance message index in the FIM to find the fault isolation task for the upper flow control valve.
- (3) Do this check of the control of the flow control and shutoff valve (FCV) by the cabin temperature controller (CTC):
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message shows on the ground test display, then do the Fault Isolation - CTC to FCV Interface Problems procedure below.

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- (c) If the maintenance message does not show on the ground test display, then continue.
- (4) Do this check of the control of the FCV by the air supply and cabin pressure controller (ASCPC):
 - (a) Make sure that the ADIRU switch is in the ON position.
 - (b) Make sure that the L ENG and the R ENG BLEED AIR switches are in the OFF position.
 - (c) Make sure that the L and the R engine START/IGNITION switches are in the NORM position.
 - 1) Put a DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
 - (d) Supply pneumatic power with the APU. To supply pneumatic power, do this task: Pressurize the Pneumatic System, AMM TASK 36-00-00-860-802.
 - (e) Supply conditioned air with the cooling packs. To supply conditioned air, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (f) Put the left and the right engine fuel control switches, located on the P10 control stand, in the RUN position.
 - (g) Wait approximately 6 minutes.
 - (h) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation - ASCPC to FCV Interface Problems procedure below.
 - (i) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then there was an intermittent fault. Do these steps to complete the task:
 - 1) Remove conditioned air. To remove conditioned air, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 2) Put the left and the right engine fuel control switches in the CUTOFF position.
 - 3) Remove the DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
- (5) Do this check of the control of the flow control and shutoff valve (FCV):
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) Visually verify that the Left Lower Flow Control and Shutoff Valve (FCV), V21513, moves during the ground test.
 - (c) If the FCV, V21513, moves and the maintenance message shows on the ground test display, then replace the proximity switch:

NOTE: The proximity switch is part of the FCV.

 - 1) Do these tasks to replace the proximity switch:
 - a) Do this task to remove the FCV, V21513: Lower Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-02-000-801.
 - b) Do this task to install the FCV, V21513: Lower Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-02-400-801.
 - 2) After replacing the proximity switch, perform the repair confirmation at the end of this task.
 - (d) If the maintenance message does not show on the ground test display, then continue.



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- (6) Do a visual check of the low limit valve:

NOTE: A low limit valve with an undiagnosed mechanical failure can let ice collect in the condenser/reheater.

- (a) Remove the low limit valve. To remove the low limit valve, do this task: Low Limit Valve Removal, AMM TASK 21-52-30-000-801.
- (b) Do an inspection of the low limit valve shaft and butterfly disk for damage.
- (c) If there is damage found, do the steps that follow:
 - 1) Install a new low limit valve. To install the low limit valve, do this task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If there is no damage found, re-install the valve and continue. To re-install the valve, do this task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801.

- (7) Do a check of the condenser/reheater performance:

NOTE: A reduced condenser/reheater airflow can cause the maintenance message to show on the MAT. Airflow can be reduced by blockage or by internal corrosion. Service experience shows that airflow will be reduced to an unacceptable level in 4000 to 8000 flight hours, depending on the operating conditions (777-SL-21-027).

NOTE: The condenser/reheater vendor has developed a condenser/reheater with a heat exchanger core that has a corrosion resistant coating called RockHard. They have also developed a repair and recoating process using RockHard. This repair can only be accomplished at an approved vendor repair facility. It is recommended that the condenser/reheater be replaced or repaired to utilize the corrosion resistant coating (777-SL-21-029).

- (a) To do a check of the condenser/reheater performance, do this task: Condenser/Reheater Flow Restriction Test, AMM TASK 21-52-03-000-802.
- (b) If the condenser/reheater performance is unacceptable, then replace the condenser/reheater.

To replace the condenser/reheater, do the tasks that follow:
Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,
Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.
- (c) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- (d) If the maintenance message does not show on the ground test display, then you corrected the fault.

- (8) Do these steps to examine the dual heat exchanger for blockage:

- (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door

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- (b) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
196JR	Heat Exchanger Door

- (c) Remove the access panel on the ram air duct.

- (d) If there is blockage, then do these steps:

- 1) Remove the blockage.
- 2) Install the access panel.
- 3) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door

- 4) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
196JR	Heat Exchanger Door

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- 6) If the maintenance message does not show on the ground test display, you corrected the fault.

- (e) If there is no blockage, then continue.

- (f) Install the access panel.

- (g) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door

- (h) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
196JR	Heat Exchanger Door

C. Fault Isolation - CTC to FCV Interface Problems

- (1) Put the L PACK switch in the OFF position.
- (2) Disconnect connector DV21513B from the FCV.
- (3) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21513B at the FCV.
- (4) If the voltage between pin 1 and pin 2 of connector DV21513B is less than 15 VDC, then do these steps:
 - (a) Remove the left cabin temperature controller (CTC-L), M21631. To remove the CTC-L, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Do a wiring check between these pins of connectors DM21631AB and DM21631AE at the E1-2 shelf and connector DV21513B at the left pack lower FCV, V21513 (WDM 21-51-21):

DM21631AB	DV21513B
pin H8	pin 1
pin G8	pin 2

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DM21631AE

pin C8 pin 1
pin D8 pin 2

DV21513B

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Reinstall the CTC-L, M21631. To install the CTC-L, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (d) If you do not find a problem with the wiring, then install a new CTC-L, M21631. To install the new CTC-L, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (e) Reconnect DV21513B.
- (f) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- (g) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (h) If the maintenance message shows on the ground test display, then continue.
- (5) If the voltage between pin 1 and pin 2 of DV21513B is more than 15 VDC, then do these steps:



WARNING

OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Put the air/ground system in the air mode. To put the system in air mode, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
NOTE: The air/ground system must be in the air mode to operate the lower flow control valve.
- (b) Put the L PACK switch in the AUTO position.
- (c) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21513B at the FCV.



WARNING

OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (d) Put the air/ground system in the ground mode. To put the system in ground mode, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (e) If the voltage between pin 1 and pin 2 of DV21513B is more than 15 VDC, then do these steps:
 - 1) Replace the CTC-L, M21631.
To replace the CTC-L, do the tasks that follow:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 2) Reconnect DV21513B.

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- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (f) If the voltage between pin 1 and pin 2 of DV21513B is less than 15 VDC, then do these steps:
 - 1) Replace the left pack lower FCV, V21513.
To replace the FCV, do the tasks that follow:
Lower Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-02-000-801,
Lower Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-02-400-801.
 - 2) Reconnect DV21513B.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (6) Do these steps to do a check of the FCV position sensor wiring:
 - (a) Disconnect connector DV21513A from the FCV.
 - (b) Do a check for 28 VDC at pin 2 of connector DV21513A.
 - (c) If you do not find 28 VDC at pin 2 of connector DV21513A, then do these steps:
 - 1) Reconnect DV21513A.
 - 2) Do a check for 28 VDC at pin 2 of circuit breaker C21645 (WDM 21-51-21).
 - 3) If you find 28 VDC, then repair the wiring between pin 2 of circuit breaker C21645 and pin 2 of connector DV21513A (WDM 21-51-21).
 - 4) If you do not find 28 VDC, then replace this circuit breaker:
Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	23	C21645	L ECV FCV POS SNSR
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 6) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If you find 28 VDC at pin 2 of connector DV21513A, then do a continuity check between pin 3 of connector DV21513A and structure ground (WDM 21-51-21).
 - (e) If you do not find continuity, then repair the wiring between pin 3 of connector DV21513A and structure ground.
 - (f) If you do find continuity, then do these steps:
 - 1) Remove the CTC-L, M21631. To remove the CTC-L, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.

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- 2) Do a wiring check between these pins of connectors DM21631AA and DM21631AD at the E1-2 shelf and connector DV21513A at the left pack lower FCV, V21513 (WDM 21-51-21):

DM21631AA	DV21513A
pin C10	pin 1

DM21631AD	DV21513A
pin H10	pin 1

- 3) If you find a problem with the wiring, then do these steps:
- a) Repair the wiring.
 - b) Reinstall the CTC-L, M21631. To install the CTC-L, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (g) If you do not find a problem with the wiring, then install a new CTC-L, M21631. To install the CTC-L, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (h) Reconnect DV21513A.
- (i) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- (j) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (k) If the maintenance message shows on the ground test display, then continue.
- (7) Replace the left pack flow sensor, M21536.
- To replace the flow sensor, do the tasks that follow:
- Flow Sensor Removal, AMM TASK 21-51-03-000-801,
- Flow Sensor Installation, AMM TASK 21-51-03-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (8) Inspect the left pack conditioned air check valve. To inspect the check valve, do this task: Conditioned Air Check Valve Removal, AMM TASK 21-52-12-000-802-002.
- (a) If the conditioned air check valve is not serviceable, then do these steps:
- 1) Install a new conditioned air check valve. To install the check valve, do this task: Conditioned Air Check Valve Installation, AMM TASK 21-52-12-400-802-002.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (b) If the conditioned air check valve is serviceable, then reinstall the conditioned air check valve and continue. To install the check valve, do this task: Conditioned Air Check Valve Installation, AMM TASK 21-52-12-400-802-002.
- (9) Do this check of the left pack ozone converter:

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- (a) Remove the ozone converter. To remove the ozone converter, do this task: Ozone Converter Removal, AMM TASK 21-73-01-000-801.
- (b) Inspect the ozone converter for damage.
- (c) If the ozone converter is not serviceable, then do these steps:
 - 1) Install a new ozone converter. To install the ozone converter, do this task: Ozone Converter Installation, AMM TASK 21-73-01-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

D. Fault Isolation - ASCPC to FCV Interface Problems

- (1) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
H	2	C21431	L CTC CHAN 1 (AC)
H	3	C21433	L CTC CHAN 2 (AC)
H	24	C21647	L CTC CHAN 2 (DC)
H	25	C21641	L CTC CHAN 1 (DC)

- (2) Put the L PACK switch in the OFF position.
- (3) Disconnect connector DV21513C from the FCV.
- (4) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21513C at the FCV.
- (5) If the voltage between pin 1 and pin 2 of connector DV21513C is less than 15 VDC, then do these steps:
 - (a) Remove the left air supply and pressure controller (ASCPC-L) from the E1-2 shelf, M36111. To remove the ASCPC-L, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Do a wiring check between these pins of connector DM36111AB at the E1-2 shelf and connector DV21513C at the left pack lower FCV, V21513 (WDM 21-51-21):

DM36111AB	DV21513C
pin C2	pin 1
pin B2	pin 2

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Reinstall the ASCPC-L, M36111. To install the ASCPC-L, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (d) If you do not find a problem with the wiring, then install a new ASCPC-L, M36111. To install the ASCPC-L, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (e) Reconnect connector DV21513C.

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- (f) Remove the safety tags and close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	2	C21431	L CTC CHAN 1 (AC)
H	3	C21433	L CTC CHAN 2 (AC)
H	24	C21647	L CTC CHAN 2 (DC)
H	25	C21641	L CTC CHAN 1 (DC)

- (g) Do the Repair Confirmation - ASCPC to FCV Interface Problems procedure below.
- (6) If the voltage between pin 1 and pin 2 of DV21513C is more than 15 VDC, then do these steps:

- (a) Set the L PACK switch to the AUTO position.
- (b) Do a check of the voltage between pin 1 and pin 2 of DV21513C at the FCV.
- (c) If the voltage between pin 1 and pin 2 of DV21513C is more than 15 VDC, then replace the ASCPC-L, M36111.

To replace the ASCPC-L, do the tasks that follow:

ASCPC Removal, AMM TASK 36-11-20-000-801,

ASCPC Installation, AMM TASK 36-11-20-400-801.

- (d) If the voltage between pins 1 and 2 of connector DV21513C is less than 15 VDC, then replace the left pack lower FCV, V21513.

To replace the flow control valve, do the tasks that follow:

Lower Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-02-000-801,

Lower Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-02-400-801.

- (e) Reconnect DV21513C.
- (f) Remove the safety tags and close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	2	C21431	L CTC CHAN 1 (AC)
H	3	C21433	L CTC CHAN 2 (AC)
H	24	C21647	L CTC CHAN 2 (DC)
H	25	C21641	L CTC CHAN 1 (DC)

- (g) Do the Repair Confirmation - ASCPC to FCV Interface Problems procedure below.

E. Repair Confirmation - ASCPC to FCV Interface Problems

NOTE: The air conditioning system must be in operation (from APU pneumatic power) for this check.

- (1) Make sure that the L ENG and the R ENG BLEED AIR switches are in the OFF position.
- (2) Make sure that the L and the R engine START/IGNITION switches are in the NORM position.
- (a) Put a DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
- (3) Put the left and the right engine fuel control switches, located on the P10 control stand, in the CUTOFF position.
- (4) Push the ADIRU switch to the OFF position and then to the ON position.

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- (5) Put the left and the right engine fuel control switches in the RUN position.
- (6) Wait approximately 6 minutes.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault. Do these steps to complete the task:
 - 1) Remove conditioned air. To remove conditioned air, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 2) Put the left and the right engine fuel control switches in the CUTOFF position.
 - 3) Remove the DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
 - (b) If the MAT shows ACTIVE or LATCHED, then continue with the subsequent step of this fault isolation procedure.

————— END OF TASK —————

807. L PACK Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43490.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Push the switch to the AUTO position.
 - (b) Push the switch to the OFF position.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or OFF position, then do the Fault Isolation Procedure below.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the AUTO and OFF positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the L PACK switch, M21314S8 (WDM 21-51-11).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Push the L PACK switch to the AUTO position.
 - 2) Push the L PACK switch to the OFF position.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and OFF positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or OFF position, then continue.
- (2) Do this check of the wiring from the L PACK switch to the left overhead panel cardfile (OPCF-L):
 - (a) Remove the air conditioning module, M21314, but do not disconnect its electrical connectors.
 - (b) Disconnect connector M21314DS8 from the L PACK switch.
 - (c) Disconnect connector DM23117L from the OPCF-L, M23117.

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- (d) Do a wiring check between these pins of connector M21314DS8 at pilot's overhead panel, P5, and connector DM23117L, at the maintenance panel, P61 (WDM 21-51-11):

M21314DS8	DM23117L
pin 4	pin B1
pin 5	pin B3
pin 6	pin B2

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connectors M21314DS8 and DM23117L.
 - 3) Re-install the air conditioning module, M21314.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Push the switch to the AUTO position.
 - b) Push the switch to the OFF position.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and OFF positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connectors M21314DS8 and DM23117L.
- (h) Re-install the air conditioning module, M21314.
- (3) Replace the OPCF-L chassis, M23117 at the maintenance panel, P61.
- These are the tasks:
- Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Push the switch to the AUTO position.
 - 2) Push the switch to the OFF position.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and OFF positions, you corrected the fault.

————— **END OF TASK** —————

808. Air Conditioning Reset Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43030.

B. Possible Causes

- (1) AIR COND RESET Switch, M21314S7
- (2) Wiring
- (3) Overhead Panel Card File Chassis (right), M23217

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C. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message 23-43030, then do the Fault Isolation Procedure below 23-43030.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Push and hold the AIR COND RESET switch on the P5 overhead panel for 5 seconds.
 - (b) Release the switch.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is pushed in or released, then do the Fault Isolation Procedure below.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message while the switch is pushed in and when the switch is released, then there was an intermittent fault.

D. Fault Isolation Procedure

- (1) Replace the AIR COND RESET switch, M21314S7 (WDM 21-61-12).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Push and hold the switch for 5 seconds.
 - 2) Release the switch.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is pushed in and when the switch is released, then you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is pushed in or released, then continue.
- (2) Do this check of the wiring between the AIR COND RESET switch and the right overhead panel cardfile (OPCF):
 - (a) Remove the air conditioning module, M21314, from the P5 panel, but do not disconnect its electrical connectors.
 - (b) Disconnect connector DM21314B from the air conditioning module, M21314.
 - (c) Disconnect connector DM23217L from the right OPCF, M23217.
 - (d) Do a wiring check between these pins of connector DM21314B at pilot's overhead panel, P5, and connector DM23217L, at the maintenance panel, P61 (WDM 21-61-12):

DM21314B

pin 41
pin 42
pin 43

DM23217L

pin B1
pin B3
pin B2

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DM21314B and DM23217L.
 - 3) Re-install the air conditioning module, M21314.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Push and hold the switch for 5 seconds.
 - b) Release the switch.

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- 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is pushed in and when the switch is released, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
 - 1) Re-connect connectors DM21314B and DM23217L.
 - 2) Re-install the air conditioning module, M21314.
- (3) Replace the right OPCF, M23217, at the maintenance panel, P61.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Push and hold the switch for 5 seconds.
 - 2) Release the switch.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is pushed in and when the switch is released, then you corrected the fault.

————— **END OF TASK** —————

809. Right Pack Primary Heat Exchanger Inlet Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22802.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - (a) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check at the primary heat exchanger temperature sensor:
 - (a) Disconnect connector DM21517 from the right pack primary heat exchanger inlet temperature sensor, M21517.
 - (b) Measure the resistance between these pairs of pins at the temperature sensor, M21517 (WDM 21-51-52).
 - 1) Pin 1 and pin 4
 - 2) Pin 2 and pin 3

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- (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Replace the temperature sensor, M21517.

These are the tasks:

Primary Heat Exchanger Inlet Temperature Sensor Removal, AMM
TASK 21-51-04-000-801,

Primary Heat Exchanger Inlet Temperature Sensor Installation, AMM
TASK 21-51-04-400-801.

- 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (d) If the resistance at each pair of pins is 500-575 ohms, then continue.

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- (e) Re-connect DM21517.

- (2) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the CTC-R to the temperature sensor:
- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DM21517 from the right pack primary heat exchanger inlet temperature sensor, M21517.
- (c) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21517 at the temperature sensor, M21517 (WDM 21-51-52).

DM21632AD

pin A1		pin 1
pin A2		pin 4
pin B1		pin 2
pin B2		pin 3

DM21517

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- (d) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21517 at the temperature sensor, M21517 (WDM 21-51-52).

DM21632AA	DM21517
pin J1	pin 2
pin J2	pin 3
pin K1	pin 1
pin K2	pin 4

- (e) If you find a problem with the wiring, do these steps:
- 1) Repair the wiring.
 - 2) Re-connect DM21517.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

810. (CTC) Diff Press Sensor for the Right Pack Flow Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23002.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for damage to the tube assembly that connects the CTC differential pressure sensor to the right pack flow sensor, M21521.
 - (a) If the tube assembly is damaged, then do these steps:
 - 1) Repair the tube assembly.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the tube assembly is not damaged, then continue.
- (2) Disconnect connector DM21521B from the pressure sensor (WDM 21-51-52).
- (3) Do a check for 28 VDC at pin 1 and pin 2 of connector DM21521B (WDM 21-51-52).

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(4) If there is 28 VDC at pin 1 of connector DM21521B, then do these steps:

- (a) Replace the flow sensor, M21521.

These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.

- (b) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Right Cabin Temperature Controller.
- (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.
- (e) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (f) Disconnect connector DM21521B from the pressure sensor.
- (g) Do a wiring check between these pins of connectors DM21632AE and DM21632AB on the E2-2 shelf and connector DM21521B at the pressure sensor, M21521M2 (WDM 21-51-52):

DM21632AE

pin E2 pin 3
pin E3 pin 4

DM21521B

DM21632AB

pin F2 pin 3
pin F3 pin 4

DM21521B

- (h) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.
- 2) Re-connect connector DM21521B.
- 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 4) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Right Cabin Temperature Controller.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

- (i) If you do not find a problem with the wiring, then do these steps:

- 1) Re-connect connector DM21521B.
- 2) Install a new CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.

- (5) If there is not 28 VDC at pin 1 and pin 2 of connector DM21521B, then do these steps (WDM 21-51-52):

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- (a) Do a continuity check between pin 2 of connector DM21521B and structure ground.
- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21521B.
 - 3) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If you do not find a problem with the wiring, then do these steps:
 - 1) Replace this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	6	C21628	R PACK & TRIM PRESS SNSR

- 2) Re-connect connector DM21521B.
 - a) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - c) If the maintenance message shows on the ground test display, then continue.
- 3) Do a check for 28 VDC between terminal QB5 of terminal block TB2202 at the E2-2 shelf and structure ground (WDM 21-51-52):
- 4) If there is not 28 VDC at terminal QB5 of TB2202, then do these steps:
 - a) Repair the wiring between circuit breaker C21628, on the Right Power Management Panel, P210, and terminal QB5 of TB2202 at the E2-2 shelf (WDM 21-51-52).
 - b) Re-connect connector DM21521B.
 - c) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- 5) If there is 28 VDC at terminal QB5 of terminal block TB2202, then do these steps:
 - a) Repair the wiring between terminal QB5 of terminal block TB2202 at the E2-2 shelf, and pin 1 of connector DM21521B on the pressure sensor (WDM 21-51-52).
 - b) Re-connect connector DM21521B.
 - c) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

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811. Pressure Sensor (L Pack and Trim Air) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-23011, 21-23013, 21-23015.

B. Initial Evaluation

- (1) Look at this circuit breaker to see if it is open:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	28	C21627	L PACK & TRIM PRESS SNSR

- (a) If the circuit breaker is open, then do these steps:
- 1) Close the circuit breaker.
 - 2) If the circuit breaker opens when you try to close it, then do the Fault Isolation Procedure - Circuit Breaker Open procedure below.
 - 3) If the circuit breaker stays closed and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) then there was an intermittent fault.
 - 4) If the circuit breaker stays closed and the MAT shows ACTIVE for the maintenance message then do the Fault Isolation Procedure - Circuit Breaker Closed procedure below.
- (b) If the circuit breaker is closed, then do the Fault Isolation Procedure - Circuit Breaker Closed procedure below.

C. Fault Isolation Procedure - Circuit Breaker Open

- (1) Replace this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	28	C21627	L PACK & TRIM PRESS SNSR

- (a) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (b) If the circuit breaker opens and the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do this check of the left trim air pressure sensor:
- (a) Disconnect connector DM21633 from the left trim air pressure sensor, M21633 (WDM 21-62-11).
- (b) Close circuit breaker C21627.
- 1) If the circuit breaker stays closed, then do these steps:
 - a) Replace the left trim air pressure sensor, M21633.
These are the tasks:
Trim Air Pressure Sensor Removal, AMM TASK 21-62-02-000-801,
Trim Air Pressure Sensor Installation, AMM TASK 21-62-02-400-801.
 - 2) If the circuit breaker opens, then continue.
- (3) Do this check of the CTC differential pressure sensor:

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- (a) Disconnect connector DM21536B from the CTC differential pressure sensor, M21536M2 (WDM 21-51-51).
- (b) Close circuit breaker C21627.
 - 1) If the circuit breaker stays closed, then do these steps:
 - a) Replace the flow sensor, M21536.

These are the tasks:
Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
 - 2) If the circuit breaker opens, then continue.
- (4) Do this check of the inlet pressure sensor:
 - (a) Disconnect connector DM21536C from the inlet pressure sensor, M21536M3 (WDM 21-51-51).
 - (b) Close circuit breaker C21627.
 - 1) If the circuit breaker stays closed, then do these steps:
 - a) Replace the flow sensor, M21536.

These are the tasks:
Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
 - 2) If the circuit breaker opens, then continue.
- (5) Do a wiring check between circuit breaker C21627 in the P110 panel and pin 1 of the connectors below (WDM 21-51-51):
 - (a) Connector DM21633 - left trim air pressure sensor (WDM 21-62-11).
 - (b) Connector DM21536B - CTC differential pressure sensor (WDM 21-51-51).
 - (c) Connector DM21536C - inlet pressure sensor (WDM 21-51-51).
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Close circuit breaker C21627.
 - 3) Re-connect connectors DM21536B, DM21536C, DM21633.
 - 4) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

D. Fault Isolation Procedure - Circuit Breaker Closed

- (1) Replace this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	28	C21627	L PACK & TRIM PRESS SNSR

- (a) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) then you corrected the fault.
- (b) If the circuit breaker opens and the MAT shows ACTIVE for the maintenance message then continue.

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- (2) Do a check of the internal wiring for the pressure sensor circuit in the P110 panel (WDM 21-51-51):
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

————— **END OF TASK** —————

812. Pressure Sensor (R Pack and Trim Air) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-23012, 21-23014, 21-23016.

B. Initial Evaluation

- (1) Look at this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	6	C21628	R PACK & TRIM PRESS SNSR

- (a) If the circuit breaker is open, then do these steps:
 - 1) Close the circuit breaker.
 - 2) If the circuit breaker opens when you try to close it, then do the Fault Isolation Procedure - Circuit Breaker Open procedure below.
 - 3) If the circuit breaker stays closed and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) then there was an intermittent fault.
 - 4) If the circuit breaker stays closed and the MAT shows ACTIVE for the maintenance message then do the Fault Isolation Procedure - Circuit Breaker Closed procedure below.
- (b) If the circuit breaker is closed, then do the Fault Isolation Procedure - Circuit Breaker Closed procedure below.

C. Fault Isolation Procedure - Circuit Breaker Open

- (1) Replace this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	6	C21628	R PACK & TRIM PRESS SNSR

- (a) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (b) If the circuit breaker opens and the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do this check of the right trim air pressure sensor:
 - (a) Disconnect connector DM21634 from the right trim air pressure sensor, M21634 (WDM 21-62-12).
 - (b) Close circuit breaker C21628.

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- 1) If the circuit breaker stays closed, then do these steps:
 - a) Replace the right trim air pressure sensor, M21634.
These are the tasks:
Trim Air Pressure Sensor Removal, AMM TASK 21-62-02-000-801,
Trim Air Pressure Sensor Installation, AMM TASK 21-62-02-400-801.
 - 2) If the circuit breaker opens, then continue.
- (3) Do this check of the CTC differential pressure sensor:
- (a) Disconnect connector DM21521B from the CTC differential pressure sensor, M21521M2 (WDM 21-51-52).
 - (b) Close circuit breaker C21628.
 - 1) If the circuit breaker stays closed, then do these steps:
 - a) Replace the flow sensor, M21521.
These are the tasks:
Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
 - 2) If the circuit breaker opens, then continue.
- (4) Do this check of the inlet pressure sensor:
- (a) Disconnect connector DM21521C from the inlet pressure sensor, M21521M3 (WDM 21-51-52).
 - (b) Close circuit breaker C21628.
 - 1) If the circuit breaker stays closed, then do these steps:
 - a) Replace the flow sensor, M21521.
These are the tasks:
Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
 - 2) If the circuit breaker opens, then continue.
- (5) Do a wiring check between circuit breaker C21628 in the P210 panel and pin 1 of the connectors below (WDM 21-51-51):
- (a) Connector DM21634 - right trim air pressure sensor (WDM 21-62-12).
 - (b) Connector DM21521B - CTC differential pressure sensor (WDM 21-51-52).
 - (c) Connector DM21521C - inlet pressure sensor (WDM 21-51-52).
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Close circuit breaker C21628.
 - 3) Re-connect connectors DM21521B, DM21521C, DM21634.
 - 4) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.



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D. Fault Isolation Procedure - Circuit Breaker Closed

- (1) Replace this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	6	C21628	R PACK & TRIM PRESS SNSR

- (a) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (b) If the circuit breaker opens and the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the internal wiring for the pressure sensor circuit in the P210 panel (WDM 21-51-52):
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

————— END OF TASK —————

813. Inlet Pressure Sensor for the R Flow Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23042.

B. Initial Evaluation

- (1) Use the MAT to do a check of the fault history for maintenance message 21-23042.
- (2) If the MAT shows a continuing history of fault message 21-23042 after the inlet pressure sensor has been replaced, then it is recommended that you do the fault isolation task for the right manifold pressure sensor: Manifold Pressure Sensor (Right) Signal Failed - Fault Isolation, 36-21 TASK 801.

NOTE: A continuing history of maintenance message 21-23042 can be an indication of a problem with the right manifold pressure sensor.

- (3) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (4) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for damage to the tube assembly that connects the inlet pressure sensor to the right pack flow sensor, M21521.
 - (a) If the tube assembly is damaged, then do these steps:
 - 1) Repair the tube assembly.

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- 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (b) If the tube assembly is not damaged, then continue.
- (2) Disconnect connector DM21521C from the pressure sensor (WDM 21-51-52).
- (3) Do a check for 28 VDC at pin 1 and pin 2 of connector DM21521C (WDM 21-51-52).
- (4) If there is 28 VDC at pin 1 and pin 2 of connector DM21521C, then do these steps:
 - (a) Replace the flow sensor, M21521.
These are the tasks:
Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
 - (e) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (f) Disconnect connector DM21521C from the pressure sensor.
 - (g) Do a wiring check between these pins of connectors DM21632AE and DM21632AB on the E2-2 shelf and connector DM21521C at the pressure sensor, M21521M3 (WDM 21-51-52):

DM21632AE	DM21521C
pin C2	pin 3
pin C3	pin 4
DM21632AB	DM21521C
pin H2	pin 3
pin H3	pin 4
- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21536C.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (i) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DM21521C.



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- 2) Install a new CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (5) If there is not 28 VDC at pin 1 and pin 2 of connector DM21521C, then do these steps (WDM 21-51-52):
- (a) Do a continuity check between pin 2 of connector DM21521C and structure ground.
 - (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21521C.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If you do not find a problem with the wiring, then do these steps:
 - 1) Do a check for 28 VDC between terminal QB5 of terminal block TB2202 at the E2-2 shelf and structure ground (WDM 21-51-52).
 - 2) If there is not 28 VDC at terminal QB5 of terminal block TB2202, then do these steps:
 - a) Repair the wiring between circuit breaker C21628, on the Right Power Management Panel, P210, and terminal QB5 of terminal block TB2202 at the E2-2 shelf (WDM 21-51-52).
 - b) Re-connect connector DM21521C.
 - c) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If there is 28 VDC at terminal QB45 of terminal block TB1201, then do these steps:
 - a) Repair the wiring between terminal QB5 of terminal block TB2202 at the E2-2 shelf, and pin 1 of connector DM21521C on the pressure sensor (WDM 21-51-52).
 - b) Re-connect connector DM21521C.
 - c) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

814. (ASCPC) Diff Press Sensor for the Right Pack Flow Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29912.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for damage to the tube assembly that connects the ASCPC differential pressure sensor to the right pack flow sensor, M21521.
 - (a) If the tube assembly is damaged, then do these steps:
 - 1) Repair the tube assembly.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the tube assembly is not damaged, then continue.
- (2) Disconnect connector DM21521A from the pressure sensor (WDM 21-51-52).
- (3) Do a check for 28 VDC at pin 1 and pin 2 of connector DM21521A (WDM 21-51-52).
- (4) If there is 28 VDC at pin 1 and pin 2 of connector DM21521A, then do these steps:
 - (a) Replace the flow sensor, M21521.

These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message, then continue.
 - (d) Remove the right air supply and cabin pressure controller (ASCPC-R), M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (e) Disconnect connector DM21521A from the pressure sensor.
 - (f) Do a wiring check between these pins of connector DM36112AC at the E2-2 shelf and connector DM21521A at the pressure sensor, M21521M1 (WDM 21-51-52):

DM36112AC		DM21521A
pin C5	.....	pin 3
pin D5	.....	pin 4
- (g) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21521A.

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- 3) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (h) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect the connector DM21521A.
 - 2) Install a new ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If there is not 28 VDC at pin 1 and pin 2 of connector DM21521A, then do these steps (WDM 21-51-52):
 - (a) Remove the ASCPC-R, M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Do a wiring check between these pins of connector DM36112AC at the E2-2 shelf and connector DM21521A at the pressure sensor, M21521M1 (WDM 21-51-52):

DM21521A

pin 1

DM36112AC

pin A5

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector DM21521A.
 - 3) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect the connector DM21521A.
 - 2) Install a new ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

815. Right Pack Lower Flow Control and SOV (ASCPC Torque Motor) Problems - Fault Isolation

A. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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B. Fault Isolation Procedure

- (1) Clean the lower flow control and shutoff valve filter:
Lower Flow Control and Shutoff Valve (FCSOV) Filter Cleaning, AMM TASK 21-51-02-000-803.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the lower flow control and shutoff valve filter:
These are the tasks:
Lower Flow Control and Shutoff Valve (FCSOV) Filter Removal, AMM TASK 21-51-02-000-802.
Lower Flow Control and Shutoff Valve (FCSOV) Filter Installation, AMM TASK 21-51-02-400-802.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the lower flow control and shutoff valve, V21514.
These are the tasks:
Lower Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-02-000-801,
Lower Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-02-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring:
 - (a) Disconnect connector DV21514C from the lower flow control and shutoff valve for the right pack, V21514.
 - (b) Remove the right air supply and cabin pressure controller (ASCPC-R) from the E2-2 shelf, M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (c) Do a wiring check between these pins of connector DM36112AB at the E2-2 shelf and connector DV21514C at the lower flow control and shutoff valve, V21514 (WDM 21-51-22):

DM36112AB	DV21514C
pin C2	pin 1
pin B2	pin 2
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector DV21514C.

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- 3) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then do these steps:
- 1) Re-connect connector DV21514C.
 - 2) Install a new ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.

———— END OF TASK ————

816. Lower Flow Control and SOV (R Pack) Torque Motor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24002.

B. Initial Evaluation

- (1) Do these steps to check for a failed ASCPC compressor discharge temperature sensor:

NOTE: The ASCPC compressor discharge temperature sensor can fail in range with a high temperature indication. If the ASCPC senses a pack overheat condition, then it will close the two flow control valves independently of the CTC. When the CTC senses the two valves closed it transmits the two maintenance messages.

- (a) Make these selections on the MAT:
- 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - 4) 21 Cabin Temperature Control System
- (b) See if the fault display on the MAT shows the two maintenance messages 21-24002, Lower Flow Control and SOV (R Pack), and 21-24102, Upper Flow Control and SOV (R Pack).
- (2) If the two maintenance messages 21-24002 and 21-24102 show together on the MAT, then do these steps:
- (a) Replace the ASCPC compressor discharge temperature sensor for the right pack, M21206.
- To replace the temperature sensor, do the tasks that follow:
- Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,
Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.
- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.

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- (c) If the two maintenance messages 21-24002 and 21-24102 do not show on the ground test display, then you corrected the fault.
 - (d) If only the maintenance message 21-24002 shows on the ground test display, then do the Fault Isolation - CTC to FCV Interface Problems procedure below.
 - (e) If only the maintenance message 21-24102 shows on the ground test display, then use the maintenance message index in the FIM to find the fault isolation task for the upper flow control valve.
- (3) Do this check of the control of the flow control and shutoff valve (FCV) by the cabin temperature controller (CTC):
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (b) If the maintenance message shows on the ground test display, then do the Fault Isolation - CTC to FCV Interface Problems procedure below.
 - (c) If the maintenance message does not show on the ground test display, then continue.
- (4) Do this check of the control of the FCV by the air supply and cabin pressure controller (ASCPC):
- (a) Make sure that the ADIRU switch is in the ON position.
 - (b) Make sure that the L ENG and the R ENG BLEED AIR switches are in the OFF position.
 - (c) Make sure that the L and the R engine START/IGNITION switches are in the NORM position.
 - 1) Put a DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
 - (d) Supply pneumatic power with the APU. To supply pneumatic power, do this task: Pressurize the Pneumatic System, AMM TASK 36-00-00-860-802.
 - (e) Supply conditioned air with the cooling packs. To supply conditioned air, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (f) Put the left and the right engine fuel control switches, located on the P10 control stand, in the RUN position.
 - (g) Wait approximately 6 minutes.
 - (h) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation - ASCPC to FCV Interface Problems procedure below.
 - (i) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then there was an intermittent fault. Do these steps to complete the task:
 - 1) Remove conditioned air. To remove conditioned air, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 2) Put the left and the right engine fuel control switches in the CUTOFF position.
 - 3) Remove the DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
- (5) Do this check of the control of the flow control and shutoff valve (FCV):
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (b) Visually verify that the Right Lower Flow Control and Shutoff Valve (FCV), V21514, moves during the ground test.

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- (c) If the FCV, V21514, moves and the maintenance message shows on the ground test display, then replace the proximity switch.

NOTE: The proximity switch is part of the FCV.

- 1) Do these tasks to replace the proximity switch:
 - a) Do this task to remove the FCV, V21514: Lower Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-02-000-801.
 - b) Do this task to install the FCV, V21514: Lower Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-02-400-801.
- 2) After replacing the proximity switch, perform the repair confirmation at the end of this task.

- (d) If the maintenance message does not show on the ground test display, then continue.

- (6) Do a visual check of the low limit valve:

NOTE: A low limit valve with an undiagnosed mechanical failure can let ice collect in the condenser/reheater.

- (a) Remove the low limit valve. To remove the low limit valve, do this task: Low Limit Valve Removal, AMM TASK 21-52-30-000-801.

- (b) Do an inspection of the low limit valve shaft and butterfly disk for damage.

- (c) If there is damage found, do the steps that follow:

- 1) Install a new low limit valve. To install the low limit valve, do this task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801
- 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

- (d) If there is no damage found, re-install the valve and continue. To re-install the valve, do this task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801.

- (7) Do a check of the condenser/reheater performance:

NOTE: A reduced condenser/reheater airflow can cause the maintenance message to show on the MAT. Airflow can be reduced by blockage or by internal corrosion. Service experience shows that airflow will be reduced to an unacceptable level in 4000 to 8000 flight hours, depending on the operating conditions (777-SL-21-027).

NOTE: The condenser/reheater vendor has developed a condenser/reheater with a heat exchanger core that has a corrosion resistant coating called RockHard. They have also developed a repair and recoating process using RockHard. This repair can only be accomplished at an approved vendor repair facility. It is recommended that the condenser/reheater be replaced or repaired to utilize the corrosion resistant coating (777-SL-21-029).

- (a) To do a check of the condenser/reheater performance, do this task: Condenser/Reheater Flow Restriction Test, AMM TASK 21-52-03-000-802.

- (b) If the condenser/reheater performance is unacceptable, then replace the condenser/reheater.

To replace the condenser/reheater, do the tasks that follow:

Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,

Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.

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- (c) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (d) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (8) Do these steps to examine the dual heat exchanger for blockage:
 - (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door
 - (b) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
196JR	Heat Exchanger Door
 - (c) Remove the access panel on the ram air duct.
 - (d) If there is blockage, then do these steps:
 - 1) Remove the blockage.
 - 2) Install the access panel.
 - 3) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door
 - 4) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
196JR	Heat Exchanger Door
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If there is no blockage, then continue.
 - (f) Install the access panel.
 - (g) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door
 - (h) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
196JR	Heat Exchanger Door

C. Fault Isolation - CTC to FCV Interface Problems

- (1) Put the R PACK switch in the OFF position.
- (2) Disconnect connector DV21514B from the FCV.
- (3) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21514B at the FCV.
- (4) If the voltage between pin 1 and pin 2 of connector DV21514B is less than 15 VDC, then do these steps:

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- (a) Remove the right cabin temperature controller (CTC-R), M21632. To remove the CTC-R, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Do a wiring check between these pins of connectors DM21632AB and DM21632AE at the E2-2 shelf and connector DV21514B at the right pack lower FCV, V21514 (WDM 21-51-22):

DM21632AB	DV21514B
pin H8	pin 1
pin G8	pin 2

DM21632AE	DV21514B
pin C8	pin 1
pin D8	pin 2

- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Reinstall the CTC-R, M21632. To install the CTC-R, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (d) If you do not find a problem with the wiring, then install a new CTC-R, M21632. To install the CTC-R, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (e) Reconnect DV21514B.
- (f) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (g) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (h) If the maintenance message shows on the ground test display, then continue.
- (5) If the voltage between pin 1 and pin 2 of DV21514B is more than 15 VDC, then do these steps:



WARNING

OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Put the air/ground system in the air mode. To put the system in air mode, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- NOTE: The air/ground system must be in the air mode to operate the lower flow control valve.
- (b) Put the R PACK switch in the AUTO position.
- (c) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21514B at the FCV.

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OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (d) Put the air/ground system in the ground mode. To put the system in ground mode, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.
- (e) If the voltage between pin 1 and pin 2 of DV21514B is more than 15 VDC, then do these steps:
 - 1) Replace the CTC-R, M21632.
To replace the CTC-R, do the tasks that follow:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 2) Reconnect DV21514B.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (f) If the voltage between pin 1 and pin 2 of DV21514B is less than 15 VDC, then do these steps:
 - 1) Replace the right pack lower FCV, V21514.
To replace the flow control valve, do the tasks that follow:
Lower Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-02-000-801,
Lower Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-02-400-801.
 - 2) Reconnect DV21514B.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (6) Do these steps to do a check of the FCV position sensor wiring:
 - (a) Disconnect connector DV21514A from the FCV.
 - (b) Do a check for 28 VDC at pin 2 of connector DV21514A.
 - (c) If you do not find 28 VDC at pin 2 of connector DV21514A, then do these steps:
 - 1) Reconnect DV21514A.
 - 2) Do a check for 28 VDC at pin 2 of circuit breaker C21646 (WDM 21-51-22).
 - 3) If you find 28 VDC, then repair the wiring between pin 2 of circuit breaker C21646 and pin 2 of connector DV21514A (WDM 21-51-22).

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- 4) If you do not find 28 VDC, then replace this circuit breaker:

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	4	C21646	R ECV/FCV POS SNSR

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- 6) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If you find 28 VDC at pin 2 of connector DV21514A, then do a continuity check between pin 3 of connector DV21514A and structure ground (WDM 21-51-22).
- (e) If you do not find continuity, then repair the wiring between pin 3 of connector DV21514A and structure ground.
- (f) If you do find continuity, then do these steps:
- 1) Remove the CTC-R, M21632. To remove the CTC-R, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connectors DM21632AA and DM21632AD at the E2-2 shelf and connector DV21514A at the right pack lower FCV, V21514 (WDM 21-51-22):
- | | |
|-------------------|-----------------|
| DM21632AA | DV21514A |
| pin C10 | pin 1 |
| DM21632AD | DV21514A |
| pin H10 | pin 1 |
- 3) If you find a problem with the wiring, then do these steps:
- a) Repair the wiring.
 - b) Reinstall the CTC-R, M21632. To install the CTC-R, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (g) If you do not find a problem with the wiring, then install a new CTC-R, M21632. To install a new CTC-R, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (h) Reconnect DV21514A.
- (i) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (j) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (k) If the maintenance message shows on the ground test display, then continue.
- (7) Replace the right pack flow sensor, M21521.
- To replace the flow sensor, do the tasks that follow:
- Flow Sensor Removal, AMM TASK 21-51-03-000-801,
- Flow Sensor Installation, AMM TASK 21-51-03-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.

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- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (8) Inspect the right pack conditioned air check valve. To inspect the check valve, do this task: Conditioned Air Check Valve Removal, AMM TASK 21-52-12-000-802-002.
 - (a) If the conditioned air check valve is not serviceable, then do these steps:
 - 1) Install a new conditioned air check valve. To install a new check valve, do this task: Conditioned Air Check Valve Installation, AMM TASK 21-52-12-400-802-002.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (b) If the conditioned air check valve is serviceable, then reinstall the conditioned air check valve and continue. To install the check valve, do this task: Conditioned Air Check Valve Installation, AMM TASK 21-52-12-400-802-002.
- (9) Do this check of the right pack ozone converter:
 - (a) Remove the ozone converter. To remove the ozone converter, do this task: Ozone Converter Removal, AMM TASK 21-73-01-000-801.
 - (b) Inspect the ozone converter for damage.
 - (c) If the ozone converter is not serviceable, then do these steps:
 - 1) Install a new ozone converter. To install a new ozone converter, do this task: Ozone Converter Installation, AMM TASK 21-73-01-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

D. Fault Isolation - ASCPC to FCV Interface Problems

- (1) Open these circuit breakers and install safety tags:

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21434	R CTC CHAN 2 (AC)
G	28	C21432	R CTC CHAN 1 (AC)
H	2	C21642	R CTC CHAN 1 (DC)
H	3	C21648	R CTC CHAN 2 (DC)

- (2) Put the R PACK switch in the OFF position.
- (3) Disconnect connector DV21514C from the FCV.
- (4) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21514C at the FCV.
- (5) If the voltage between pin 1 and pin 2 of connector DV21514C is less than 15 VDC, then do these steps:
 - (a) Remove the right air supply and pressure controller (ASCPC-R) from the E2-2 shelf, M36112. To remove the ASCPC-R, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.

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- (b) Do a wiring check between these pins of connector DM36112AB at the E2-2 shelf and connector DV21514C at the right pack lower FCV, V21514 (WDM 21-51-22):

DM36112AB	DV21514C
pin C2	pin 1
pin B2	pin 2

- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Reinstall the ASCPC-R, M36112. To install the ASCPC-R, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (d) If you do not find a problem with the wiring, then install a new ASCPC-R, M36112. To install a new ASCPC-R, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (e) Reconnect connector DV21514C.
- (f) Remove the safety tags and close these circuit breakers:

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21434	R CTC CHAN 2 (AC)
G	28	C21432	R CTC CHAN 1 (AC)
H	2	C21642	R CTC CHAN 1 (DC)
H	3	C21648	R CTC CHAN 2 (DC)

- (g) Do the Repair Confirmation - ASCPC to FCV Interface Problems procedure below.
- (6) If the voltage between pin 1 and pin 2 of DV21514C is more than 15 VDC, then do these steps:
- (a) Set the R PACK switch to the AUTO position.
- (b) Do a check of the voltage between pin 1 and pin 2 of DV21514C at the FCV.
- (c) If the voltage between pin 1 and pin 2 of DV21514C is more than 15 VDC, then replace the ASCPC-R, M36112.

To replace the ASCPC-R, do the tasks that follow:

ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.

- (d) If the voltage between pins 1 and 2 of connector DV21514C is less than 15 VDC, then replace the right pack lower FCV, V21514.
- To replace the flow control valve, do the tasks that follow:
- Lower Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-02-000-801,
Lower Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-02-400-801.
- (e) Reconnect DV21514C.
- (f) Remove the safety tags and close these circuit breakers:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21434	R CTC CHAN 2 (AC)
G	28	C21432	R CTC CHAN 1 (AC)

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	2	C21642	R CTC CHAN 1 (DC)
H	3	C21648	R CTC CHAN 2 (DC)

(g) Do the Repair Confirmation - ASCPC to FCV Interface Problems procedure below.

E. Repair Confirmation - ASCPC to FCV Interface Problems

NOTE: The air conditioning system must be in operation (from APU pneumatic power) for this check.

- (1) Make sure that the L ENG and the R ENG BLEED AIR switches are in the OFF position.
- (2) Make sure that the L and the R engine START/IGNITION switches are in the NORM position.
 - (a) Put a DO-NOT-OPERATE placard on the L and R engine START/IGNITION switches.
- (3) Put the left and the right engine fuel control switches, located on the P10 control stand, in the CUTOFF position.
- (4) Push the ADIRU switch to the OFF position and then to the ON position.
- (5) Put the left and the right engine fuel control switches in the RUN position.
- (6) Wait approximately 6 minutes.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault. Do these steps to complete the task:
 - 1) Remove conditioned air. To remove conditioned air, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 2) Put the left and the right engine fuel control switches in the CUTOFF position.
 - 3) Remove the DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
 - (b) If the MAT shows ACTIVE or LATCHED, then continue with the subsequent step of this fault isolation procedure.

— END OF TASK —

817. Upper Flow Control and SOV (L Pack) Torque Motor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24101.

B. Initial Evaluation

- (1) Do these steps to check for a failed ASCPC compressor discharge temperature sensor:

NOTE: The ASCPC compressor discharge temperature sensor can fail in range with a high temperature indication. If the ASCPC senses a pack overheat condition, then it will close the two flow control valves independently of the CTC. When the CTC senses the two valves closed it transmits the two maintenance messages.

- (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - 4) 21 Cabin Temperature Control System

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- (b) Look at the fault display on the MAT for maintenance messages 21-24001, Lower Flow Control and SOV (L Pack), and 21-24101, Upper Flow Control and SOV (L Pack).
- (2) If the two maintenance messages 21-24001 and 21-24101 show on the MAT, then do these steps:
 - (a) Replace the ASCPC compressor discharge temperature sensor for the left pack, M21103.
To replace the temperature sensor, do the tasks that follow:
Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,
Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (c) If the two maintenance messages 21-24001 and 21-24101 do not show on the ground test display, then you corrected the fault.
 - (d) If the maintenance message 21-24101 shows on the ground test display, then do the Fault Isolation - CTC to FCV Interface Problems procedure below.
 - (e) If the maintenance message 21-24001 shows on the ground test display, then use the maintenance message index in the FIM to find the fault isolation task for the lower flow control valve.
- (3) Do this check of the control of the flow control and shutoff valve (FCV) by the cabin temperature controller (CTC):
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message shows on the ground test display, then do the Fault Isolation - CTC to FCV Interface Problems procedure below.
 - (c) If the maintenance message does not show on the ground test display, then continue.
- (4) Do this check of the control of the FCV by the air supply and cabin pressure controller (ASCPC):
 - (a) Make sure that the ADIRU switch is in the ON position.
 - (b) Make sure that the L ENG and the R ENG BLEED AIR switches are in the OFF position.
 - (c) Make sure that the L and the R engine START/IGNITION switches are in the NORM position.
 - 1) Put a DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
 - (d) Supply pneumatic power with the APU. To supply pneumatic power, do this task: Pressurize the Pneumatic System, AMM TASK 36-00-00-860-802.
 - (e) Supply conditioned air with the cooling packs. To supply conditioned air, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (f) Put the left and the right engine fuel control switches, located on the P10 control stand, in the RUN position.
 - (g) Wait approximately 6 minutes.
 - (h) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation - ASCPC to FCV Interface Problems procedure below.
 - (i) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then there was an intermittent fault. Do these steps to complete the task:

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- 1) Remove conditioned air. To remove conditioned air, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 2) Put the left and the right engine fuel control switches in the CUTOFF position.
 - 3) Remove the DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
- (5) Do this check of the control of the flow control and shutoff valve (FCV):
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) Visually verify that the Left Upper Flow Control and Shutoff Valve (FCV), V21511, moves during the ground test.
 - (c) If the FCV, V21511, moves and the maintenance message shows on the ground test display, then replace the proximity switch.
 - 1) Do these tasks to replace the proximity switch:
NOTE: The proximity switch is part of the FCV.
 - a) Do this task to remove the FCV, V21511: Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-01-000-801.
 - b) Do this task to install the FCV, V21511: Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-01-400-801.
 - 2) After replacing the proximity switch, perform the repair confirmation at the end of this task.
 - (d) If the maintenance message does not show on the ground test display, then continue.
- (6) Do a visual check of the low limit valve:
- NOTE: A low limit valve with an undiagnosed mechanical failure can let ice collect in the condenser/reheater.
- (a) Remove the low limit valve. To remove the low limit valve, do this task: Low Limit Valve Removal, AMM TASK 21-52-30-000-801.
 - (b) Do an inspection of the low limit valve shaft and butterfly disk for damage.
 - (c) If there is damage found, do the steps that follow:
 - 1) Install a new low limit valve. To install a new valve, do this task. Low Limit Valve Installation, AMM TASK 21-52-30-400-801
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If there is no damage found, re-install the valve and continue. To re-install the valve, do this task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801.



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- (7) Do a check of the condenser/reheater performance:

NOTE: A reduced condenser/reheater airflow can cause the maintenance message to show on the MAT. Airflow can be reduced by blockage or by internal corrosion. Service experience shows that airflow will be reduced to an unacceptable level in 4000 to 8000 flight hours, depending on the operating conditions (777-SL-21-027).

NOTE: The condenser/reheater vendor has developed a condenser/reheater with a heat exchanger core that has a corrosion resistant coating called RockHard. They have also developed a repair and recoating process using RockHard. This repair can only be accomplished at an approved vendor repair facility. It is recommended that the condenser/reheater be replaced or repaired to utilize the corrosion resistant coating (777-SL-21-029).

- (a) To do a check of the condenser/reheater performance, do this task: Condenser/Reheater Flow Restriction Test, AMM TASK 21-52-03-000-802.

- (b) If the condenser/reheater performance is unacceptable, then replace the condenser/reheater.

To replace the condenser/reheater, do the tasks that follow:

Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,

Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.

- (c) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.

- (d) If the maintenance message does not show on the ground test display, then you corrected the fault.

- (8) Do these steps to examine the dual heat exchanger for blockage:

- (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>

196ER	Environmental Control Systems (ECS) Access Door

- (b) Open this access panel:

<u>Number</u>	<u>Name/Location</u>

196JR	Heat Exchanger Door

- (c) Remove the access panel on the ram air duct.

- (d) If there is blockage, then do these steps:

- 1) Remove the blockage.

- 2) Install the access panel.

- 3) Close this access panel:

<u>Number</u>	<u>Name/Location</u>

196ER	Environmental Control Systems (ECS) Access Door

- 4) Close this access panel:

<u>Number</u>	<u>Name/Location</u>

196JR	Heat Exchanger Door

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.

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- 6) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If there is no blockage, then continue.
- (f) Install the access panel.
- (g) Close this access panel:
- | <u>Number</u> | <u>Name/Location</u> |
|---------------|---|
| 196ER | Environmental Control Systems (ECS) Access Door |
- (h) Close this access panel:
- | <u>Number</u> | <u>Name/Location</u> |
|---------------|----------------------|
| 196JR | Heat Exchanger Door |

C. Fault Isolation - CTC to FCV Interface Problems

- (1) Put the L PACK switch in the OFF position.
- (2) Disconnect connector DV21511B from the FCV.
- (3) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21511B at the FCV.
- (4) If the voltage between pin 1 and pin 2 of connector DV21511B is less than 15 VDC, then do these steps:
- (a) Remove the left cabin temperature controller (CTC-L), M21631. To remove the CTC-L, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Do a wiring check between these pins of connectors DM21631AB and DM21631AE at the E1-2 shelf and connector DV21511B at the left pack upper FCV, V21511 (WDM 21-51-11):

DM21631AB	DV21511B
pin K8	pin 1
pin J8	pin 2

DM21631AE	DV21511B
pin A8	pin 1
pin B8	pin 2

- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
- 2) Reinstall the CTC-L, M21631. To install the CTC-L, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (d) If you do not find a problem with the wiring, then install a new CTC-L, M21631. To install the CTC-L, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (e) Reconnect DV21511B.
- (f) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- (g) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (h) If the maintenance message shows on the ground test display, then continue.

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- (5) If the voltage between pin 1 and pin 2 of DV21511B is more than 15 VDC, then do these steps:
- Reconnect connector DV21511B to the FCV.
 - Put the L PACK switch in the AUTO position.
 - Disconnect connector DV21511B from the FCV.
 - Do a check for 28 VDC between pin 1 and pin 2 of connector DV21511B at the FCV.
 - If the voltage between pin 1 and pin 2 of DV21511B is more than 15 VDC, then do these steps:
 - Replace the CTC-L, M21631.
To replace the CTC-L, do the tasks that follow:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - Reconnect DV21511B.
 - Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - If the maintenance message does not show on the ground test display, then you corrected the fault.
 - If the voltage between pin 1 and pin 2 of DV21511B is less than 15 VDC, then do these steps:
 - Replace the left pack upper FCV, V21511.
To replace the flow control valve, do the tasks that follow:
Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-01-000-801,
Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-01-400-801.
 - Reconnect DV21511B.
 - Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - If the maintenance message does not show on the ground test display, then you corrected the fault.
 - If the maintenance message shows on the ground test display, then continue.
- (6) Do these steps to do a check of the FCV position sensor wiring:
- Disconnect connector DV21511A from the FCV.
 - Do a check for 28 VDC at pin 2 of connector DV21511A.
 - If you do not find 28 VDC at pin 2 of connector DV21511A, then do these steps:
 - Reconnect DV21511A.
 - Do a check for 28 VDC at pin 2 of circuit breaker C21645 (WDM 21-51-11).
 - If you find 28 VDC, then repair the wiring between pin 2 of circuit breaker C21645 and pin 2 of connector DV21511A (WDM 21-51-11).

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- 4) If you do not find 28 VDC, then replace this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	23	C21645	L ECV FCV POS SNSR

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- 6) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If you find 28 VDC at pin 2 of connector DV21511A, then do a continuity check between pin 3 of connector DV21511A and structure ground (WDM 21-51-11).
- (e) If you do not find continuity, then repair the wiring between pin 3 of connector DV21511A and structure ground.
- (f) If you do find continuity, then do these steps:
- 1) Remove the CTC-L, M21631. To remove the CTC-L, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connectors DM21631AA and DM21631AD at the E1-2 shelf and connector DV21511A at the left pack upper FCV, V21511 (WDM 21-51-11):
- | | |
|-------------------|-----------------|
| DM21631AA | DV21511A |
| pin D10 | pin 1 |
-
DM21631AD	DV21511A
pin G10	pin 1
- 3) If you find a problem with the wiring, then do these steps:
- a) Repair the wiring.
 - b) Reinstall the CTC-L, M21631. To install the CTC-L, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (g) If you do not find a problem with the wiring, then install a new CTC-L, M21631. To install a new CTC-L, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (h) Reconnect DV21511A.
- (i) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- (j) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (k) If the maintenance message shows on the ground test display, then continue.
- (7) Replace the left pack flow sensor, M21536.
- To replace the flow sensor, do the tasks that follow:
- Flow Sensor Removal, AMM TASK 21-51-03-000-801,
- Flow Sensor Installation, AMM TASK 21-51-03-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.

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- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (8) Inspect the left pack conditioned air check valve. To inspect the check valve, do this task: Conditioned Air Check Valve Removal, AMM TASK 21-52-12-000-802-002.
 - (a) If the conditioned air check valve is not serviceable, then do these steps:
 - 1) Install a new conditioned air check valve. To install a new check valve, do this task: Conditioned Air Check Valve Installation, AMM TASK 21-52-12-400-802-002.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (b) If the conditioned air check valve is serviceable, then reinstall the conditioned air check valve and continue. To install the check valve, do this task: Conditioned Air Check Valve Installation, AMM TASK 21-52-12-400-802-002.
- (9) Do this check of the left pack ozone converter:
 - (a) Remove the ozone converter. To remove the ozone converter, do this task: Ozone Converter Removal, AMM TASK 21-73-01-000-801.
 - (b) Inspect the ozone converter for damage.
 - (c) If the ozone converter is not serviceable, then do these steps:
 - 1) Install a new ozone converter. To install a new ozone converter, do this task: Ozone Converter Installation, AMM TASK 21-73-01-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

D. Fault Isolation - ASCPC to FCV Interface Problems

- (1) Put the L PACK switch in the OFF position.
- (2) Disconnect connector DV21511C from the FCV.
- (3) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21511C at the FCV.
- (4) If the voltage between pin 1 and pin 2 of connector DV21511C is less than 15 VDC, then do these steps:
 - (a) Remove the left air supply and pressure controller (ASCPC-L) from the E1-2 shelf, M36111. To remove the ASCPC-L, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Do a wiring check between these pins of connector DM36111AB at the E1-2 shelf and connector DV21511C at the left pack upper FCV, V21511 (WDM 21-51-11):

DM36111AB	DV21511C
pin D2	pin 1
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.

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- 2) Reinstall the ASCPC-L, M36111. To install the ASCPC-L, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (d) If you do not find a problem with the wiring, then install a new ASCPC-L, M36111. To install the ASCPC-L, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (e) Reconnect connector DV21511C.
- (f) Do the Repair Confirmation - ASCPC to FCV Interface Problems procedure below.
- (5) If the voltage between pin 1 and pin 2 of DV21511C is more than 15 VDC, then do these steps:
 - (a) Set the L PACK switch to the AUTO position.
 - (b) Do a check of the voltage between pin 1 and pin 2 of DV21511C at the FCV.
 - (c) If the voltage between pin 1 and pin 2 of DV21511C is more than 15 VDC, then replace the ASCPC-L, M36111.

To replace the ASCPC-L, do the tasks that follow:
ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
 - (d) If the voltage between pins 1 and 2 of connector DV21511C is less than 15 VDC, then replace the left pack upper FCV, V21511.

To replace the, flow control valve, do the tasks that follow:
Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-01-000-801,
Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-01-400-801.
 - (e) Reconnect DV21511C.
 - (f) Do the Repair Confirmation - ASCPC to FCV Interface Problems procedure below.

E. Repair Confirmation - ASCPC to FCV Interface Problems

NOTE: The air conditioning system must be in operation (from APU pneumatic power) for this check.

- (1) Make sure that the L ENG and the R ENG BLEED AIR switches are in the OFF position.
- (2) Make sure that the L and the R engine START/IGNITION switches are in the NORM position.
 - (a) Put a DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
- (3) Put the left and the right engine fuel control switches, located on the P10 control stand, in the CUTOFF position.
- (4) Push the ADIRU switch to the OFF position and then to the ON position.
- (5) Put the left and the right engine fuel control switches in the RUN position.
- (6) Wait approximately 6 minutes.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault. Do these steps to complete the task:
 - 1) Remove conditioned air. To remove conditioned air, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 2) Put the left and the right engine fuel control switches in the CUTOFF position.
 - 3) Remove the DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.

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- (b) If the MAT shows ACTIVE or LATCHED, then continue with the subsequent step of this fault isolation procedure.

————— END OF TASK —————

818. Upper Flow Control and SOV (R Pack) Torque Motor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24102.

B. Initial Evaluation

- (1) Do these steps to check for a failed ASCPC compressor discharge temperature sensor:

NOTE: The ASCPC compressor discharge temperature sensor can fail in range with a high temperature indication. If the ASCPC senses a pack overheat condition, then it will close the two flow control valves independently of the CTC. When the CTC senses the two valves closed it transmits the two maintenance messages.

- (a) Make these selections on the MAT:
- 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - 4) 21 Cabin Temperature Control System
- (b) Look at the fault display on the MAT for maintenance messages 21-24002, Lower Flow Control and SOV (R Pack), and 21-24102, Upper Flow Control and SOV (R Pack).
- (2) If the two maintenance messages 21-24002 and 21-24102 show on the MAT, then do these steps:
- (a) Replace the ASCPC compressor discharge temperature sensor for the right pack, M21206.
- To replace the temperature sensor, do the tasks that follow:
Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,
Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.
- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (c) If the two maintenance messages 21-24002 and 21-24102 do not show on the ground test display, then you corrected the fault.
- (d) If the maintenance message 21-24102 shows on the ground test display, then do the Fault Isolation - CTC to FCV Interface Problems procedure below.
- (e) If the maintenance message 21-24002 shows on the ground test display, then use the maintenance message index in the FIM to find the fault isolation task for the upper flow control valve.
- (3) Do this check of the control of the flow control and shutoff valve (FCV) by the cabin temperature controller (CTC):
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (b) If the maintenance message shows on the ground test display, then do the Fault Isolation - CTC to FCV Interface Problems procedure below.
- (c) If the maintenance message does not show on the ground test display, then continue.

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- (4) Do this check of the control of the FCV by the air supply and cabin pressure controller (ASCPC):
- Make sure that the ADIRU switch is in the ON position.
 - Make sure that the L ENG and the R ENG BLEED AIR switches are in the OFF position.
 - Make sure that the L and the R engine START/IGNITION switches are in the NORM position.
 - Put a DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
 - Supply pneumatic power with the APU. To supply pneumatic power, do this task: Pressurize the Pneumatic System, AMM TASK 36-00-00-860-802.
 - Supply conditioned air with the cooling packs. To supply conditioned air, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - Put the left and the right engine fuel control switches, located on the P10 control stand, in the RUN position.
 - Wait approximately 6 minutes.
 - If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation - ASCPC to FCV Interface Problems procedure below.
 - If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then there was an intermittent fault. Do these steps to complete the task:
 - Remove conditioned air. To remove conditioned air, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - Put the left and the right engine fuel control switches in the CUTOFF position.
 - Remove the DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
- (5) Do this check of the control of the flow control and shutoff valve (FCV):
- Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - Visually verify that the Right Upper Flow Control and Shutoff Valve (FCV), V21512, moves during the ground test.
 - If the FCV, V21512, moves and the maintenance message shows on the ground test display, then replace the proximity switch.
 - Do these tasks to replace the proximity switch:
NOTE: The proximity switch is part of the FCV.
 - Do this task to remove the FCV, V21512: Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-01-000-801.
 - Do this task to install the FCV, V21512: Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-01-400-801.
 - After replacing the proximity switch, perform the repair confirmation at the end of this task.
 - If the maintenance message does not show on the ground test display, then continue.
- (6) Do a visual check of the low limit valve:
- NOTE: A low limit valve with an undiagnosed mechanical failure can let ice collect in the condenser/reheater.



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- (a) Remove the low limit valve. To remove the low limit valve, do this task: Low Limit Valve Removal, AMM TASK 21-52-30-000-801.
 - (b) Do an inspection of the low limit valve shaft and butterfly disk for damage.
 - (c) If there is damage found, do the steps that follow:
 - 1) Install a new low limit valve. To install a new valve, do this task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If there is no damage found, re-install the low limit valve. To re-install the valve, do this task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801.
- (7) Do a check of the condenser/reheater performance:
- NOTE:** A reduced condenser/reheater airflow can cause the maintenance message to show on the MAT. Airflow can be reduced by blockage or by internal corrosion. Service experience shows that airflow will be reduced to an unacceptable level in 4000 to 8000 flight hours, depending on the operating conditions (777-SL-21-027).
- NOTE:** The condenser/reheater vendor has developed a condenser/reheater with a heat exchanger core that has a corrosion resistant coating called RockHard. They have also developed a repair and recoating process using RockHard. This repair can only be accomplished at an approved vendor repair facility. It is recommended that the condenser/reheater be replaced or repaired to utilize the corrosion resistant coating (777-SL-21-029).
- (a) To do a check of the condenser/reheater performance, do this task: Condenser/Reheater Flow Restriction Test, AMM TASK 21-52-03-000-802.
 - (b) If the condenser/reheater performance is unacceptable, then replace the condenser/reheater.

To replace the condenser/reheater, do the tasks that follow:
Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,
Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.
 - (c) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (d) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (8) Do these steps to examine the dual heat exchanger for blockage:
- (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door
 - (b) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
196JR	Heat Exchanger Door
 - (c) Remove the access panel on the ram air duct.
 - (d) If there is blockage, then do these steps:

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- 1) Remove the blockage.
- 2) Install the access panel.
- 3) Close this access panel:

<u>Number</u>	<u>Name/Location</u>

196ER	Environmental Control Systems (ECS) Access Door

- 4) Close this access panel:

<u>Number</u>	<u>Name/Location</u>

196JR	Heat Exchanger Door

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- 6) If the maintenance message does not show on the ground test display, you corrected the fault.

- (e) If there is no blockage, then continue.

- (f) Install the access panel.

- (g) Close this access panel:

<u>Number</u>	<u>Name/Location</u>

196ER	Environmental Control Systems (ECS) Access Door

- (h) Close this access panel:

<u>Number</u>	<u>Name/Location</u>

196JR	Heat Exchanger Door

C. Fault Isolation - CTC to FCV Interface Problems

- (1) Put the R PACK switch in the OFF position.
- (2) Disconnect connector DV21512B from the FCV.
- (3) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21512B at the FCV.
- (4) If the voltage between pin 1 and pin 2 of connector DV21512B is less than 15 VDC, then do these steps:
 - (a) Remove the right cabin temperature controller (CTC-R), M21632. To remove the CTC-R, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Do a wiring check between these pins of connectors DM21632AB and DM21632AE at the E2-2 shelf and connector DV21512B at the right pack upper FCV, V21512 (WDM 21-51-12):

DM21632AB

pin K8	.....	pin 1
pin J8	.....	pin 2

DV21512B**DM21632AE**

pin A8	.....	pin 1
pin B8		pin 2

DV21512B

- (c) If you find a problem with the wiring, then do these steps:

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- 1) Repair the wiring.
- 2) Reinstall the CTC-R, M21632. To install the CTC-R, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (d) If you do not find a problem with the wiring, then install a new CTC-R, M21632. To install a new CTC-R, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (e) Reconnect DV21512B.
- (f) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (g) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (h) If the maintenance message shows on the ground test display, then continue.
- (5) If the voltage between pin 1 and pin 2 of DV21512B is more than 15 VDC, then do these steps:
 - (a) Put the R PACK switch in the AUTO position.
 - (b) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21512B at the FCV.
 - (c) If the voltage between pin 1 and pin 2 of DV21512B is more than 15 VDC, then do these steps:
 - 1) Replace the CTC-R, M21632.
To replace the CTC-R, do the tasks that follow:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 2) Reconnect DV21512B.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (d) If the voltage between pin 1 and pin 2 of DV21512B is less than 15 VDC, then do these steps:
 - 1) Replace the right pack upper FCV, V21512.
To replace the flow control valve, do the tasks that follow:
Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-01-000-801,
Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-01-400-801.
 - 2) Reconnect DV21512B.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (6) Do these steps to do a check of the FCV position sensor wiring:
 - (a) Disconnect connector DV21512A from the FCV.

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- (b) Do a check for 28 VDC at pin 2 of connector DV21512A.
- (c) If you do not find 28 VDC at pin 2 of connector DV21512A, then do these steps:
 - 1) Reconnect DV21512A.
 - 2) Do a check for 28 VDC at pin 2 of circuit breaker C21646 (WDM 21-51-12).
 - 3) If you find 28 VDC, then repair the wiring between pin 2 of circuit breaker C21646 and pin 2 of connector DV21512A (WDM 21-51-12).
 - 4) If you do not find 28 VDC, then replace this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	4	C21646	R ECV/FCV POS SNSR

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- 6) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If you find 28 VDC at pin 2 of connector DV21512A, then do a continuity check between pin 3 of connector DV21512A and structure ground (WDM 21-51-12).
- (e) If you do not find continuity, then repair the wiring between pin 3 of connector DV21512A and structure ground.
- (f) If you do find continuity, then do these steps:
 - 1) Remove the CTC-R, M21632. To remove the CTC-R, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connectors DM21632AA and DM21632AD at the E2-2 shelf and connector DV21512A at the right pack upper FCV, V21512 (WDM 21-51-12):

DM21632AA	DV21512A
pin D10	pin 1

DM21632AD	DV21512A
pin G10	pin 1

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reinstall the CTC-R, M21632. To install the CTC-R, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (g) If you do not find a problem with the wiring, then install a new CTC-R, M21632. To install a new CTC-R, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (h) Reconnect DV21512A.
- (i) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (j) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (k) If the maintenance message shows on the ground test display, then continue.

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- (7) Replace the right pack flow sensor, M21521.
To replace the flow sensor, do the tasks that follow:
Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (8) Inspect the right pack conditioned air check valve. To inspect the check valve, do this task: Conditioned Air Check Valve Removal, AMM TASK 21-52-12-000-802-002.
- (a) If the conditioned air check valve is not serviceable, then do these steps:
- 1) Install a new conditioned air check valve. To install a new check valve, do this task: Conditioned Air Check Valve Installation, AMM TASK 21-52-12-400-802-002.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (b) If the conditioned air check valve is serviceable, then reinstall the conditioned air check valve and continue. To install the check valve, do this task: Conditioned Air Check Valve Installation, AMM TASK 21-52-12-400-802-002.
- (9) Do this check of the right pack ozone converter:
- (a) Remove the ozone converter. To remove the ozone converter, do this task: Ozone Converter Removal, AMM TASK 21-73-01-000-801.
- (b) Inspect the ozone converter for damage.
- (c) If the ozone converter is not serviceable, then do these steps:
- 1) Install a new ozone converter. To install a new ozone converter, do this task: Ozone Converter Installation, AMM TASK 21-73-01-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - 3) If the maintenance message does not show on the ground test display, then you corrected the fault.

D. Fault Isolation - ASCPC to FCV Interface Problems

- (1) Put the R PACK switch in the OFF position.
- (2) Disconnect connector DV21512C from the FCV.
- (3) Do a check for 28 VDC between pin 1 and pin 2 of connector DV21512C at the FCV.
- (4) If the voltage between pin 1 and pin 2 of connector DV21512C is less than 15 VDC, then do these steps:
 - (a) Remove the right air supply and pressure controller (ASCPC-R) from the E2-2 shelf, M36112. To remove the ASCPC-R, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Do a wiring check between these pins of connector DM36112AB at the E2-2 shelf and connector DV21512C at the right pack upper FCV, V21512 (WDM 21-51-12):

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DM36112AB

pin D2 pin 1

DV21512C

pin 1

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Reinstall the ASCPC-R, M36112. To install the ASCPC-R, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (d) If you do not find a problem with the wiring, then install a new ASCPC-R, M36112. To install a new ASCPC-R, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (e) Reconnect connector DV21512C.
- (f) Do the Repair Confirmation - ASCPC to FCV Interface Problems procedure below.
- (g) If the repair confirmation does not show that you corrected the fault, then continue.
- (5) If the voltage between pin 1 and pin 2 of DV21512C is more than 15 VDC, then do these steps:
 - (a) Set the R PACK switch to the AUTO position.
 - (b) Do a check of the voltage between pin 1 and pin 2 of DV21512C at the FCV.
 - (c) If the voltage between pin 1 and pin 2 of DV21512C is more than 15 VDC, then replace the ASCPC-R, M36112.

To replace the ASCPC-R, do the tasks that follow:
ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
 - (d) If the voltage between pins 1 and 2 of connector DV21512C is less than 15 VDC, then replace the right pack upper FCV, V21512.

To replace the flow control valve, do the tasks that follow:
Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-01-000-801,
Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-01-400-801.
 - (e) Reconnect DV21512C.
 - (f) Do the Repair Confirmation - ASCPC to FCV Interface Problems procedure below.

E. Repair Confirmation - ASCPC to FCV Interface Problems

NOTE: The air conditioning system must be in operation (from APU pneumatic power) for this check.

- (1) Make sure that the L ENG and the R ENG BLEED AIR switches are in the OFF position.
- (2) Make sure that the L and the R engine START/IGNITION switches are in the NORM position.
 - (a) Put a DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
- (3) Put the left and the right engine fuel control switches, located on the P10 control stand, in the CUTOFF position.
- (4) Push the ADIRU switch to the OFF position and then to the ON position.
- (5) Put the left and the right engine fuel control switches in the RUN position.
- (6) Wait approximately 6 minutes.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault. Do these steps to complete the task:
 - 1) Remove conditioned air. To remove conditioned air, do this task: Remove Conditioned Air Supplied by a Cooling Pack, AMM TASK 21-00-00-800-804.
 - 2) Put the left and the right engine fuel control switches in the CUTOFF position.
 - 3) Remove the DO-NOT-OPERATE placard on the L and the R engine START/IGNITION switches.
- (b) If the MAT shows ACTIVE or LATCHED, then continue with the subsequent step of this fault isolation procedure.

————— **END OF TASK** —————

819. Left Pack Upper Flow Control and SOV (ASCPC Torque Motor) Problems - Fault Isolation

A. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

B. Fault Isolation Procedure

- (1) Clean the upper flow control and shutoff valve filter:
Upper Flow Control and Shutoff Valve (FCSOV) Filter Cleaning, AMM TASK 21-51-01-000-802.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the upper flow control and shutoff valve filter:
These are the tasks:
Upper Flow Control and Shutoff Valve (FCSOV) Filter Removal, AMM TASK 21-51-01-000-803.
Upper Flow Control and Shutoff Valve (FCSOV) Filter Installation, AMM TASK 21-51-01-400-802.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the upper flow control and shutoff valve, V21511.
These are the tasks:
Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-01-000-801,
Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-01-400-801.

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- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the left air supply and cabin pressure controller (ASCPC-L), M36111.
These are the tasks:
ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the wiring from the ASCPC-L and the flow control valve:
 - (a) Disconnect connector DV21511C from the upper flow control and shutoff valve for the left pack, V21511.
 - (b) Remove the left air supply and cabin pressure controller (ASCPC-L) from the E1-2 shelf, M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (c) Do a wiring check between these pins of connector DM36111AB at the E1-2 shelf and connector DV21511C at the upper flow control and shutoff valve, V21511 (WDM 21-51-11):

DM36111AB	DV21511C
pin D2	pin 1
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector DV21511C.
 - 3) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
 - 1) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (6) Do this check of the ground wiring:
 - (a) Do a continuity check between pin 2 of connector DV21511C and structure ground (WDM 21-51-11):
 - (b) If there is no continuity between pin 2 of connector DV21511C and structure ground, then do these steps:
 - 1) Repair the wiring.

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- 2) Re-connect connector DV21511C to the flow control valve, V21511.
- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

820. Right Pack Upper Flow Control and SOV (ASCPC Torque Motor) Problems - Fault Isolation

A. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

B. Fault Isolation Procedure

- (1) Clean the upper flow control and shutoff valve filter:
Upper Flow Control and Shutoff Valve (FCSOV) Filter Cleaning, AMM TASK 21-51-01-000-802.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the upper flow control and shutoff valve filter:
These are the tasks:
Upper Flow Control and Shutoff Valve (FCSOV) Filter Removal, AMM TASK 21-51-01-000-803.
Upper Flow Control and Shutoff Valve (FCSOV) Filter Installation, AMM TASK 21-51-01-400-802.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the upper flow control and shutoff valve, V21512.
These are the tasks:
Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-01-000-801,
Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-01-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the right air supply and cabin pressure controller (ASCPC-R), M36112.
- These are the tasks:
- ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the wiring from the ASCPC-R and the flow control valve:
- (a) Disconnect connector DV21512C from the upper flow control and shutoff valve for the right pack, V21512.
- (b) Remove the right air supply and cabin pressure controller (ASCPC-R) from the E2-2 shelf, M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- (c) Do a wiring check between these pins of connector DM36112AB at the E2-2 shelf and connector DV21512C at the upper flow control and shutoff valve, V21512 (WDM 21-51-12):
- | DM36112AB | DV21512C |
|------------------|-----------------|
| pin D2 | pin 1 |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect the connector DV21512C.
 - 3) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- 1) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
- (6) Do this check of the ground wiring:
- (a) Do a continuity check between pin 2 of connector DV21512C and structure ground (WDM 21-51-12):
- (b) If there is no continuity between pin 2 of connector DV21512C and structure ground, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DV21512C to the flow control valve, V21512.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.

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- 4) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

821. R PACK Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43850.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
- (a) Push the R PACK switch to the AUTO position.
- (b) Push the R PACK switch to the OFF position.
- (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or OFF position, then do the Fault Isolation Procedure below.
- (d) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the AUTO and OFF positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the R PACK switch, M21314S11 (WDM 21-51-12).
- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Push the switch to the AUTO position.
- 2) Push the switch to the OFF position.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and OFF positions, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or OFF position, then continue.
- (2) Do this check of the wiring from the R PACK switch to the right overhead panel cardfile (OPCF-R):
- (a) Remove the air conditioning module, M21314, but do not disconnect its electrical connectors.
- (b) Disconnect connector M21314DS11 from the R PACK switch.
- (c) Disconnect connector DM23217L from the OPCF-R, M23217.
- (d) Do a wiring check between these pins of connector M21314DS11 at pilot's overhead panel, P5, and connector DM23217L, at the maintenance panel, P61 (WDM 21-51-12):

M21314DS11	DM23217L
pin 4	pin B8
pin 6	pin B10
pin 5	pin B9

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
- 2) Re-connect connectors M21314DS11 and DM23217L.

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- 3) Re-install the air conditioning module, M21314.
- 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Push the switch to the AUTO position.
 - b) Push the switch to the OFF position.
- 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and OFF positions, you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
 - (g) Re-connect connectors M21314DS11 and DM23217L.
 - (h) Re-install the air conditioning module, M21314.
- (3) Replace the OPCF-R chassis, M23217, at the maintenance panel, P61.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,

Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Push the switch to the AUTO position.
 - 2) Push the switch to the OFF position.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the AUTO and OFF positions, you corrected the fault.

————— **END OF TASK** —————

822. Flow Control and Shutoff Valve Ground Test Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-23040, 21-23070.

B. Initial Evaluation

NOTE: This message can only occur when you do the Left or Right System Air On ground test on the MAT. It will occur if the ground test is failed. If the ground test passed the maintenance message will not show on the ground test display. This message will show on the ground test display if there is low duct pressure or if there is a failure of the upper flow control and shutoff valve or the lower flow control and shutoff valve. Low duct pressure can be caused by problems with the pressure source (APU, engines or ground cart), blockage in the pneumatic ducts or partially stuck valves.

- (1) If the maintenance message shows on the ground test display during the Left System Air On test and the Right System Air On test, then do the Fault Isolation Procedure - Low Duct Pressure Problems below.

NOTE: Operate one cooling pack at a time.

- (2) If the maintenance message shows on the ground test display during the Left System Air On test or the Right System Air On test, then do the Fault Isolation Procedure - Flow Control and Shutoff Valve Problems.

NOTE: If the maintenance message shows on the ground test display during only one of the ground tests then there is a problem with the air conditioning system.

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C. Fault Isolation Procedure - Low Duct Pressure Problems

- (1) Do a check for low pressure from the pneumatic source that you use for operating the air conditioning pack.
 - (a) If the pneumatic source does not supply sufficient pressure or if there is a problem with the pneumatic systems components (APU system, engine systems, air supply system), then do these steps:

NOTE: Use the maintenance access terminal (MAT) to look for existing faults for the above system components that can cause low duct pressure.

- 1) Repair the pneumatic source or the pneumatic system components.
- 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left and Right System Air On.
- 3) If the maintenance message does not show on the ground test display, you corrected the fault.

D. Fault Isolation Procedure - Flow Control and Shutoff Valve Problems

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (a) If a maintenance message related to the upper flow control and shutoff valve, lower flow control and shutoff valve, air supply and cabin pressure controller (ASCPC) or the cabin temperature controller (CTC) shows in Existing Faults, then do these steps:
 - 1) Find the message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) System Air On.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

823. Upper Flow Control Valve Failed During Ground Test - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23081.

B. Initial Evaluation

NOTE: This maintenance message occurs when you do a ground test on the MAT while the upper flow control valve for left or right pack is failed.

- (1) If one or more maintenance messages show on the ground test display, then do these steps:
 - (a) Find each maintenance message in the Maintenance Message Index.
 - (b) Do the specified fault isolation task.

————— END OF TASK —————

824. Lower Flow Control Valve Failed During Ground Test - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23082.

B. Initial Evaluation

NOTE: This maintenance message occurs when you do a ground test on the MAT while the lower flow control valve for left or right pack is failed.

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- (1) If one or more maintenance messages show on the ground test display, then do these steps:
 - (a) Find each maintenance message in the Maintenance Message Index.
 - (b) Do the specified fault isolation task.

————— **END OF TASK** —————

825. Left PACK OFF Light Did Not Come ON When Pack Selected OFF - Fault Isolation

A. Initial Evaluation

- (1) Do these steps to do a check of the upper flow control and shutoff valve:
 - (a) Operate the applicable left pack, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (b) Push the L PACK switch to select the pack off.
 - (c) If the PACK OFF light comes on, then there was an intermittent fault.
 - (d) If the PACK OFF light did not come on, then do the Fault Isolation Procedure below:

B. Fault Isolation Procedure

- (1) Look at the EXTENDED MAINTENANCE, EXISTING FAULTS display on the MAT.
 - (a) Look for this Maintenance Message: 23-43490 L PACK SWITCH FAILED.
 - (b) If this Maintenance Message shows, then do these steps:
 - 1) Go to the MAINTENANCE MESSAGE INDEX and find the applicable FIM Task.
 - 2) Do the Fault Isolation Procedure for the applicable FIM Task.
 - (c) If this Maintenance Message does not show, then continue.
- (2) Replace the left upper flow control and shutoff valve, V21511
These are the tasks:
Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-01-000-801,
Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-01-400-801.
 - (a) Operate the left pack, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (b) Push the L PACK switch to select the pack off.
 - (c) If the PACK OFF light comes on, then you corrected the fault.
 - (d) If the PACK OFF light did not come on, then continue.
- (3) Do this check of the wiring between the left upper flow control and shutoff valve, V21511 and the left cabin temperature controller (CTC), M21631.
 - (a) Remove the left CTC, M21631, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801
 - (b) Disconnect connector DV21511A from the upper flow control and shutoff valve, M21511.
 - (c) Do a wiring check between these pins of connector DV21511A at the valve, V21511, and connector DM21631A, at the E1-2 shelf (WDM 21-51-11)

DV21511A

pin 1

DM21631AD

pin G10

DV21511A

pin 1

DM21631AA

pin D10

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- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV21511A to the valve.
 - 3) Re-install the CTC, M21631, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (e) Operate the left pack, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
- (f) Push the L PACK switch to select the pack off.
- (g) If the PACK OFF light comes on, then you corrected the fault.

————— **END OF TASK** —————

826. Right PACK OFF Light Did Not Come ON When Pack Selected OFF - Fault Isolation

A. Initial Evaluation

- (1) Do these steps to do a check of the upper flow control and shutoff valve:
 - (a) Operate the applicable left pack, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (b) Push the L PACK switch to select the pack off.
 - (c) If the PACK OFF light comes on, then there was an intermittent fault.
 - (d) If the PACK OFF light did not come on, then do the Fault Isolation Procedure below:

B. Fault Isolation Procedure

- (1) Look at the EXTENDED MAINTENANCE, EXISTING FAULTS display on the MAT.
 - (a) Look for this Maintenance Message: 23-43850 R PACK SWITCH FAILED.
 - (b) If this Maintenance Message shows, then do these steps:
 - 1) Go to the MAINTENANCE MESSAGE INDEX and find the applicable FIM Task.
 - 2) Do the Fault Isolation Procedure for the applicable FIM Task.
 - (c) If this Maintenance Message does not show, then continue.
- (2) Replace the right upper flow control and shutoff valve, V21512,
These are the tasks:
Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM TASK 21-51-01-000-801,
Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM TASK 21-51-01-400-801.
 - (a) Operate the right pack, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (b) Push the R PACK switch to select the pack off.
 - (c) If the PACK OFF light comes on, then you corrected the fault.
 - (d) If the PACK OFF light did not come on, then continue.
- (3) Do this check of the wiring between the right upper flow control and shutoff valve, V21512 and the right cabin temperature controller (CTC), M21632.
 - (a) Remove the right CTC, M21632, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801
 - (b) Disconnect connector DV21512A from the upper flow control and shutoff valve, M21512.

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- (c) Do a wiring check between these pins of connector DV21512A at the valve, V21512, and connector DM21632A, at the E2-2 shelf (WDM 21-51-11)

DV21512A	DM21632AD
pin 1	pin G10

DV21512A	DM21632AA
pin 1	pin D10

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DV21512A to the valve.
 - 3) Re-install the CTC, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (e) Operate the left pack, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
- (f) Push the L PACK switch to select the pack off.
- (g) If the PACK OFF light comes on, then you corrected the fault.

————— END OF TASK —————

827. Left Pack Differential Pressure Sensor Miscompare - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23003.

B. General

- (1) This message shows if the two differential pressure sensors in the left pack flow sensor module do not give the same indication.

C. Initial Evaluation

- (1) Make these selections on the MAT:
- (a) ONBOARD MAINTENANCE
 - (b) EXTENDED MAINTENANCE
 - (c) EXISTING FAULTS
 - (d) 21 Cabin Temperature Control System
- (2) Look at the fault display on the MAT for a maintenance message related to the:
- (a) Left Pack Flow Sensor
 - (b) Left Pack Differential Pressure Sensor (CTC)
 - (c) Left Pack Differential Pressure Sensor (ASCPC).
- (3) If you find one or more related maintenance messages, then do these steps for each message that you find:
- (a) Find the related message in the FIM Maintenance Message Index.
 - (b) Do the specified task for the related maintenance message.
 - (c) Push the AIR COND RESET button on the P5 Forward Overhead Panel.
 - (d) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.

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- (e) If the related maintenance message and the sensor miscompare message do not show on the ground test display, then you corrected the fault.
- (f) If the sensor miscompare message shows on the ground test display and no related maintenance message shows, then do the Fault Isolation Procedure below.
- (4) If you do not find a related maintenance message, then do these steps:
 - (a) Push the AIR COND RESET button on the P5 Forward Overhead Panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (c) If the sensor miscompare maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the sensor miscompare maintenance message does not show on the ground test display, then there was an intermittent fault.

D. Fault Isolation Procedure

- (1) Replace the left pack flow sensor, M21536.

These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (3) Replace the left air supply and cabin pressure controller (ASCPC-L), M36111.

These are the tasks:

ASCPC Removal, AMM TASK 36-11-20-000-801,

ASCPC Installation, AMM TASK 36-11-20-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— END OF TASK —————

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828. Right Pack Differential Pressure Sensor Miscompare - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23004.

B. General

- (1) This message shows if the two differential pressure sensors in the right pack flow sensor module do not give the same indication.

C. Initial Evaluation

- (1) Make these selections on the MAT:
 - (a) ONBOARD MAINTENANCE
 - (b) EXTENDED MAINTENANCE
 - (c) EXISTING FAULTS
 - (d) 21 Cabin Temperature Control System
- (2) Look at the fault display on the MAT for a maintenance message related to the:
 - (a) Right Pack Flow Sensor
 - (b) Right Pack Differential Pressure Sensor (CTC)
 - (c) Right Pack Differential Pressure Sensor (ASCPC).
- (3) If you find one or more related maintenance messages, then do these steps for each message that you find:
 - (a) Find the related message in the FIM Maintenance Message Index.
 - (b) Do the specified task for the related maintenance message.
 - (c) Push the AIR COND RESET button on the P5 Forward Overhead Panel.
 - (d) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (e) If the related maintenance message and the sensor miscompare message do not show on the ground test display, then you corrected the fault.
 - (f) If the sensor miscompare message shows on the ground test display and no related maintenance message shows, then do the Fault Isolation Procedure below.
- (4) If you do not find a related maintenance message, then do these steps:
 - (a) Push the AIR COND RESET button on the P5 Forward Overhead Panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (c) If the sensor miscompare maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

D. Fault Isolation Procedure

- (1) Replace the right pack flow sensor, M21521.

These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.

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- (a) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Right System Air On.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the right cabin temperature controller (CTC-R), M21632.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the right air supply and cabin pressure controller (ASCPC-R), M36112.
These are the tasks:
ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
 - (a) Do this ground test on the MAT: 21-Temperature Control System, Operational Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

829. Upper Flow Control and SOV (L Pack) Proximity Switch is Failed - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24301.

B. Initial Evaluation

- (1) Do these steps to check for a failed flow sensor:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - 4) 21 Cabin Temperature Control System
 - (b) Check for maintenance messages 21-23003 and 21-23011.
 - (c) If either of the two maintenance messages 21-23003 and 21-23011 show on the MAT, then do these steps:
 - 1) Do the fault isolation task for the maintenance message found.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 3) If the maintenance message 21-24301 does not show on the ground test display, then you corrected the fault.

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- 4) If the maintenance message 21-24301 does show on the ground test display, then continue.
- (d) If the maintenance messages 21-23003 or 21-23011 do not show on the MAT, then continue.
- (2) If the MAT shows LATCHED for the maintenance message 21-24301, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation

- (1) Put the L PACK switch in the OFF position.
- (2) To get access to the upper flow control and shutoff valve for the left cooling pack, open the

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door

- (3) Do these steps to do a check of the FCV position sensor wiring:
 - (a) Disconnect connector DV21511A from the FCV.
 - (b) Do a check for 28 VDC at pin 2 of connector DV21511A.
 - (c) If you do not find 28 VDC at pin 2 of connector DV21511A, then do these steps:
 - 1) Reconnect DV21511A.
 - 2) Do a check for 28 VDC at pin 2 of circuit breaker C21645 (WDM 21-51-11).
 - 3) If you find 28 VDC, then repair the wiring between pin 2 of circuit breaker C21645 and pin 2 of connector DV21511A (WDM 21-51-11).
 - 4) If you do not find 28 VDC, then replace this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	23	C21645	L ECV FCV POS SNSR

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- 6) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If you find 28 VDC at pin 2 of connector DV21511A, then do the wiring checks that follow:
 - 1) Do a continuity check between pin 3 of connector DV21511A and structure ground (WDM 21-51-11).
 - 2) Do a continuity check between these pins of connector DV21511A and DM21631AD (WDM 21-51-11).

DV21511A	DM21631AD
pin 1	pin G10

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- 3) Do a continuity check between these pins of connector DV21511A and DM21631AA (WDM 21-51-11).

DV21511A

pin 1

DM21631AA

pin D10

- 4) If you do not find continuity, then repair the wiring.
 - 5) If you do find continuity, then do these steps:
 - a) Replace the FCV. To replace the FCV,
These are the tasks:
Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM
TASK 21-51-01-000-801,
Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM
TASK 21-51-01-400-801.
 - 6) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 7) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 8) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the left pack flow sensor, M21536.
- These are the tasks:
- Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— END OF TASK —————

830. Upper Flow Control and SOV (R Pack) Proximity Switch is Failed - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24302.

B. Initial Evaluation

- (1) Do these steps to check for a failed flow sensor:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - 4) 21 Cabin Temperature Control System
 - (b) Check for maintenance messages 21-23004 and 21-23012.
 - (c) If either of the two maintenance messages 21-23004 and 21-23012 show on the MAT, then do these steps:
 - 1) Do the fault isolation task for the maintenance message found.

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- 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- 3) If the maintenance message 21-24302 does not show on the ground test display, then you corrected the fault.
- 4) If the maintenance message 21-24302 does show on the ground test display, then continue.
- (d) If the maintenance messages 21-23004 or 21-23012 do not show on the MAT, then continue.
- (2) If the MAT shows LATCHED for the maintenance message 21-24302, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation

- (1) Put the R PACK switch in the OFF position.
- (2) To get access to the upper flow control and shutoff valve for the right cooling pack, open the

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door

- (3) Do these steps to do a check of the FCV position sensor wiring:
 - (a) Disconnect connector DV21512A from the FCV.
 - (b) Do a check for 28 VDC at pin 2 of connector DV21512A.
 - (c) If you do not find 28 VDC at pin 2 of connector DV21512A, then do these steps:
 - 1) Reconnect DV21512A.
 - 2) Do a check for 28 VDC at pin 2 of circuit breaker C21646 (WDM 21-51-12).
 - 3) If you find 28 VDC, then repair the wiring between pin 2 of circuit breaker C21646 and pin 2 of connector DV21512A (WDM 21-51-12).
 - 4) If you do not find 28 VDC, then replace this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	4	C21646	R ECV/FCV POS SNSR

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- 6) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If you find 28 VDC at pin 2 of connector DV21512A, then do the wiring checks that follow:
 - 1) Do a continuity check between pin 3 of connector DV21512A and structure ground (WDM 21-51-12).

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- 2) Do a continuity check between these pins of connector DV21512A and DM21632AD (WDM 21-51-12).

DV21512A	DM21632AD
pin 1	pin G10

- 3) Do a continuity check between these pins of connector DV21512A and DM21632AA (WDM 21-51-12).

DV21512A	DM21632AA
pin 1	pin D10

- 4) If you do not find continuity, then repair the wiring.

- 5) If you do find continuity, then do these steps:

- a) Replace the FCV. To replace the FCV,

These are the tasks:

Upper Flow Control and Shutoff Valve (FCSOV) Removal, AMM
TASK 21-51-01-000-801,

Upper Flow Control and Shutoff Valve (FCSOV) Installation, AMM
TASK 21-51-01-400-801.

- 6) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.

- 7) If the maintenance message does not show on the ground test display, then you corrected the fault.

- 8) If the maintenance message shows on the ground test display, then continue.

- (4) Replace the right pack flow sensor, M21521.

These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.

- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

831. Lower Flow Control and SOV (L Pack) Proximity Switch is Failed - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24303.

B. Initial Evaluation

- (1) Do these steps to check for a failed flow sensor:

- (a) Make these selections on the MAT:

- 1) ONBOARD MAINTENANCE
- 2) EXTENDED MAINTENANCE
- 3) EXISTING FAULTS

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- 4) 21 Cabin Temperature Control System
- (b) Check for maintenance messages 21-23003 and 21-23011.
- (c) If either of the two maintenance messages 21-23003 and 21-23011 show on the MAT, then do these steps:
 - 1) Do the fault isolation task for the maintenance message found.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 3) If the maintenance message 21-24303 does not show on the ground test display, then you corrected the fault.
 - 4) If the maintenance message 21-24303 does show on the ground test display, then continue.
- (d) If the maintenance messages 21-23003 or 21-23011 do not show on the MAT, then continue.
- (2) If the MAT shows LATCHED for the maintenance message 21-24303, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation

- (1) Put the L PACK switch in the OFF position.
- (2) To get access to the lower flow control and shutoff valve for the left cooling pack, open this access panel:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door

- (3) Do these steps to do a check of the FCV position sensor wiring:
 - (a) Disconnect connector DV21513A from the FCV.
 - (b) Do a check for 28 VDC at pin 2 of connector DV21513A.
 - (c) If you do not find 28 VDC at pin 2 of connector DV21513A, then do these steps:
 - 1) Reconnect DV21513A.
 - 2) Do a check for 28 VDC at pin 2 of circuit breaker C21645 (WDM 21-51-21).
 - 3) If you find 28 VDC, then repair the wiring between pin 2 of circuit breaker C21645 and pin 2 of connector DV21513A (WDM 21-51-21).
 - 4) If you do not find 28 VDC, then replace this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	23	C21645	L ECV FCV POS SNSR

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.

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- 6) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If you find 28 VDC at pin 2 of connector DV21513A, then do the wiring checks that follow:
 - 1) Do a continuity check between pin 3 of connector DV21513A and structure ground (WDM 21-51-21).
 - 2) Do a continuity check between these pins of connector DV21513A and DM21631AD (WDM 21-51-21).

DV21513A	DM21631AD
pin 1	pin H10

- 3) Do a continuity check between these pins of connector DV21513A and DM21631AA (WDM 21-51-21).

DV21513A	DM21631AA
pin 1	pin C10

- 4) If you do not find continuity, then repair the wiring.
 - 5) If you do find continuity, then do these steps:
 - a) Replace the FCV. To replace the FCV,
These are the tasks:
Lower Flow Control and Shutoff Valve (FCSOV) Removal, AMM
TASK 21-51-02-000-801,
Lower Flow Control and Shutoff Valve (FCSOV) Installation, AMM
TASK 21-51-02-400-801.
 - 6) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 7) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 8) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the left pack flow sensor, M21536.
- These are the tasks:
- Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— END OF TASK —————

832. Lower Flow Control and SOV (R Pack) Proximity Switch is Failed - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24304.

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B. Initial Evaluation

- (1) Do these steps to check for a failed flow sensor:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - 4) 21 Cabin Temperature Control System
 - (b) Check for maintenance messages 21-23004 and 21-23012.
 - (c) If either of the two maintenance messages 21-23004 and 21-23012 show on the MAT, then do these steps:
 - 1) Do the fault isolation task for the maintenance message found.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 3) If the maintenance message 21-24304 does not show on the ground test display, then you corrected the fault.
 - 4) If the maintenance message 21-24304 does show on the ground test display, then continue.
 - (d) If the maintenance messages 21-23004 or 21-23012 do not show on the MAT, then continue.
- (2) If the MAT shows LATCHED for the maintenance message 21-24304, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation

- (1) Put the R PACK switch in the OFF position.
- (2) To get access to the lower flow control and shutoff valve for the right cooling pack, open the

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door
- (3) Do these steps to do a check of the FCV position sensor wiring:
 - (a) Disconnect connector DV21514A from the FCV.
 - (b) Do a check for 28 VDC at pin 2 of connector DV21514A.
 - (c) If you do not find 28 VDC at pin 2 of connector DV21514A, then do these steps:
 - 1) Reconnect DV21514A.
 - 2) Do a check for 28 VDC at pin 2 of circuit breaker C21646 (WDM 21-51-22).
 - 3) If you find 28 VDC, then repair the wiring between pin 2 of circuit breaker C21646 and pin 2 of connector DV21514A (WDM 21-51-22).

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- 4) If you do not find 28 VDC, then replace this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	4	C21646	R ECV/FCV POS SNSR

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- 6) If the maintenance message does not show on the ground test display, then you corrected the fault.

- (d) If you find 28 VDC at pin 2 of connector DV21514A, then do the wiring checks that follow:

- 1) Do a continuity check between pin 3 of connector DV21514A and structure ground (WDM 21-51-22).
- 2) Do a continuity check between these pins of connector DV21514A and DM21632AD (WDM 21-51-22).

DV21514A	DM21632AD
pin 1	pin H10

- 3) Do a continuity check between these pins of connector DV21514A and DM21632AA (WDM 21-51-22).

DV21514A	DM21632AA
pin 1	pin C10

- 4) If you do not find continuity, then repair the wiring.
- 5) If you do find continuity, then do these steps:
- a) Replace the FCV. To replace the FCV,
These are the tasks:
Lower Flow Control and Shutoff Valve (FCSOV) Removal, AMM
TASK 21-51-02-000-801,
Lower Flow Control and Shutoff Valve (FCSOV) Installation, AMM
TASK 21-51-02-400-801.
- 6) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- 7) If the maintenance message does not show on the ground test display, then you corrected the fault.
- 8) If the maintenance message shows on the ground test display, then continue.

- (4) Replace the right pack flow sensor, M21521.

These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.

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- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— END OF TASK —————

833. Pack Low Flow Condition - Fault Isolation

A. Possible Causes

- (1) Condenser/Reheater
- (2) L (R) Low Limit Valve, V21533 (V21543)
- (3) Left Condenser Inlet Temperature Sensor 1 (2), M21515 (M21531)
- (4) Right Condenser Inlet Temperature Sensor 1 (2), M21524 (M21525)
- (5) Blockage in the Air Conditioning Packs Water Draining System
- (6) Water Spray Nozzle
- (7) L (R) Economy Cooling Valve, V21532 (V21542)
- (8) High-Pressure Shutoff Valve (HPSOV), V36117
- (9) Pressure Regulating and Shutoff Valve (PRSOV), V36116
- (10) Leaky Control Pressure Sense Line for HPSOV or PRSOV

B. Initial Evaluation

- (1) Do the Pack Low Flow - Operational Test, AMM TASK 21-51-00-740-804.
 - (a) If the test indicates a Low Flow condition, then do the Fault Isolation Procedure below.

C. Fault Isolation

- (1) Make sure the L and R PACK Switches are in the OFF position.
- (2) To get access to the cooling pack with the low flow condition, open the applicable panel that follows:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
196ER	Environmental Control Systems (ECS) Access Door

- (3) Examine the fins (hot and cold side) of the Condenser/Reheater for blockage/unwanted material.

- (a) If you find blockage, then replace the Condenser/Reheater. These are the tasks:

- Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,
- Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.

- 1) Do the Repair Confirmation at the end of this task.

- (b) If you do not find unwanted material in the Condenser/Reheater, then continue.

- (4) Do a visual check of the Low Limit Valve:

NOTE: A Low Limit Valve with an undiagnosed mechanical failure can let ice collect in the Condenser/Reheater.

- (a) Remove the Low Limit Valve. This is the task: Low Limit Valve Removal, AMM TASK 21-52-30-000-801.

- (b) Do an inspection of the Low Limit Valve Shaft and Butterfly Disk for damage.

- (c) If you find damage, do the steps that follow:

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- 1) Install a new Low Limit Valve. This is the task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801
- 2) Do the Repair Confirmation at the end of this task.
- (d) If you do not find damage, re-install the Low Limit Valve and continue. This is the task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801.
- (5) Replace the Condenser Inlet Temperature Sensors, M21515, M21531 (M21524, M21525). These are the tasks:
 - Condenser Inlet Temperature Sensor Removal, AMM TASK 21-52-43-000-801
 - Condenser Inlet Temperature Sensor Installation, AMM TASK 21-52-43-400-801
- (a) Do the Repair Confirmation at the end of this task.
- (6) Do the Air Conditioning Packs Water Drainage - Inspection, AMM TASK 21-52-00-740-805.
 - (a) If necessary, remove blockage from Pack Outlet Muffler Drain Holes or Water Collector Overflow Drain Line.
 - (b) If necessary, clean or replace the Water Spray Nozzle. These are the tasks:
 - 1) To clean the Water Spray Nozzle, do the AMM Procedure "Inspect for blockage - Water Spray Nozzle" (Air Conditioning Packs Water Drainage - Inspection, AMM TASK 21-52-00-740-805).
 - 2) To replace the Water Spray Nozzle, do these tasks:
 - Water Spray Nozzle Removal, AMM TASK 21-52-05-000-801,
 - Water Spray Nozzle Installation, AMM TASK 21-52-05-400-801.
 - (c) If necessary, replace the Economy Cooling Valve. These are the tasks:
 - Economy Cooling Valve Removal, AMM TASK 21-52-31-000-801,
 - Economy Cooling Valve Installation, AMM TASK 21-52-31-400-801.
 - 1) Do the Repair Confirmation at the end of this task.
 - (d) If the Packs Water Drainage is acceptable, then continue.
- (7) Do the steps that follow to do a check of the HPSOV and the PRSOV:
 - (a) Supply Pneumatic Power with the engines. This is the task: Pressurize the Pneumatic System, AMM TASK 36-00-00-860-802
NOTE: The engines should be at idle for this test.
 - (b) Supply conditioned air with the Left and the Right Cooling Packs. This is the task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (c) Get access to the Air Supply Maintenance Page on the MAT.
 - 1) Monitor the Interim Duct Pressure and the Manifold Duct Pressure.
 - 2) Make sure the Left and Right Systems Duct Pressure read within 5 psig (34 kPa) of each other.
- (8) If the Interim Duct Pressure AND the Manifold Duct Pressure are less than 20 psig (138 kPa), do the steps that follow:
 - (a) Do a check for leakage at the Control Pressure Sense Line for the HPSOV.
 - 1) If you find leakage, repair as necessary.
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If you find no leakage at the Control Pressure Sense Line, replace the HPSOV. These are the tasks:

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- HPSOV Removal, AMM TASK 36-11-07-000-808-004,
- HPSOV Installation, AMM TASK 36-11-07-400-808-004.
 - a) Do the Repair Confirmation at the end of this task.
- (9) If the Manifold Duct Pressure is less than 20 psig (138 kPa), do the steps that follow:
 - (a) Do a check for leakage at the Control Pressure Sense Line for the PRSOV.
 - 1) If you find leakage, repair as necessary.
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If you find no leakage at the Control Pressure Sense Line, replace the PRSOV. These are the tasks:
 - PRSOV Removal, AMM TASK 36-11-09-000-803-002,
 - PRSOV Installation, AMM TASK 36-11-09-400-803-002.
 - a) Do the Repair Confirmation at the end of this task.
- (10) Do a check for unwanted materials in the ducts downstream of the pack with the Low Flow condition:
 - (a) Remove unwanted materials from the ducts.
 - (b) Do the Repair Confirmation at the end of this task.

D. Repair Confirmation

- (1) Do the Pack Low Flow - Operational Test, AMM TASK 21-51-00-740-804.
 - (a) If the test shows there is equal flow between the two packs, then you corrected the problem.
 - (b) If the test indicates a Low Flow condition, then continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

834. EICAS Status Message PACK L (R) With No Correlated Maintenance Message - Fault Isolation

A. Description

- (1) The EICAS status message PACK L (R) is seen during the takeoff or initial climb phase of flight. The PACK L (R) status message clears during flight. There is no correlated maintenance message recorded in the Central Maintenance Computer.
- (2) The probable cause of the status message is a temporary pneumatic duct pressure indication that is too low for the operation of the air conditioning packs. A check of the components in the pneumatic system is recommended.

B. Possible Causes

- (1) PRSOV or PRSOVC Sense Lines
- (2) L (R) PRSOV
- (3) L (R) PRSOVC
- (4) L (R) PRSOVC Air Filter

C. Initial Evaluation

- (1) Use the MAT to make sure that there are no correlated maintenance messages for the EICAS status message. If there are correlated maintenance messages, then do those fault isolation tasks before you continue.

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D. Fault Isolation Procedure

- (1) Do this task, PRSOV (Left or Right) Failed Closed - Fault Isolation, 36-11 TASK 805

NOTE: The Initial Evaluation and the Repair Confirmation sections of this task are not applicable because of the absence of a correlated maintenance message. The task can be used as an aid to troubleshoot faults with the components in the pneumatic system.

E. Repair Confirmation

- (1) Return the airplane to revenue service. Monitor the airplane for repeat occurrences of the EICAS status message.

————— **END OF TASK** —————

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801. Left Pack (CTC) Discharge Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-21101.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check at the left pack CTC discharge temperature sensor, M21534.
 - (a) Disconnect connector DM21534 from the sensor, M21534.
 - (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21534 (WDM 21-52-31).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21534.
These are the tasks:
Pack Discharge Temperature Sensor Removal, AMM TASK 21-52-45-000-801,
Pack Discharge Temperature Sensor Installation, AMM TASK 21-52-45-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Remove the left cabin temperature controller (CTC-L), M21631, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21534 at the temperature sensor, M21534 (WDM 21-52-31).

DM21631AD	DM21534
pin C3	pin 1
pin C4	pin 2

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21534 to the temperature sensor, M21534.
 - c) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-L, M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

802. Left Pack (ASCPC) Discharge Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-21111.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check at the left pack ASCPC discharge temperature sensor, M21535.
- (a) Remove connector DM21535 from the left pack ASCPC discharge temperature sensor, M21535.
- (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21535 (WDM 21-51-21).
- (c) If the resistance is not 1K-1000K ohms, then do these steps:
- 1) Replace the temperature sensor, M21535.

These are the tasks:

Pack Discharge Temperature Sensor Removal, AMM TASK 21-52-45-000-801,
Pack Discharge Temperature Sensor Installation, AMM TASK 21-52-45-400-801.

- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (d) If the resistance is 1K-1000K ohms, then do these steps:

- 1) Remove the left air supply cabin pressure controller (ASCPC-L), M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- 2) Do a wiring check between these pins of connector DM36111AC at the E1-2 shelf and connector DM21535 at the temperature sensor, M21535 (WDM 21-51-21).

DM36111AC

DM21535

pin C3 pin 1

pin D3 pin 2

- 3) If you find a problem with the wiring, do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21535 to the temperature sensor, M21535.
 - c) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- 4) If you do not find a problem with the wiring, then continue.

- (2) Replace the ASCPC-L, M36111.

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These are the tasks:

ASCPC Removal, AMM TASK 36-11-20-000-801,

ASCPC Installation, AMM TASK 36-11-20-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

803. Left Pack (CTC) Condenser Inlet-1 Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29011.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check at the left pack condenser inlet-1 temperature sensor, M21515:
- (a) Disconnect connector DM21515 from the left pack condenser inlet-1 temperature sensor, M21515.
- (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21515 (WDM 21-52-21).
- (c) If the resistance is not 1K-1000K ohms, then do these steps:
- 1) Replace the temperature sensor, M21515.
These are the tasks:
Condenser Inlet Temperature Sensor Removal, AMM TASK 21-52-43-000-801,
Condenser Inlet Temperature Sensor Installation, AMM TASK 21-52-43-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
- 1) Remove the left cabin temperature controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21515 at the temperature sensor, M21515 (WDM 21-52-21).

DM21631AD

pin A3 pin 1
pin A4 pin 2

DM21515

- 3) If you find a problem with the wiring, then do these steps:
- a) Repair the wiring.
 - b) Re-connect connector DM21515 to the temperature sensor, M21515.
 - c) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-L, M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

804. Mix Manifold Discharge-1 L Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-28011.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check at the mix manifold discharge temperature sensor-1 L, M21532:
 - (a) Disconnect connector DM21532 from the mix manifold discharge temperature sensor-1 L, M21532.
 - (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21532 (WDM 21-52-41).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21532.
These are the tasks:
Mix Manifold Discharge Temperature Sensor Removal, AMM TASK 21-52-46-000-801,
Mix Manifold Discharge Temperature Sensor Installation, AMM TASK 21-52-46-400-801.
 - (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Remove the left cabin temperature controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21532 at the temperature sensor, M21532 (WDM 21-52-41).

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DM21631AD

pin D3 pin 1
pin D4 pin 2

DM21532

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21532 to the temperature sensor, M21532.
 - c) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If you do not find a problem with the wiring, then do these steps:
 - a) Replace the CTC-L, M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM
TASK 21-61-01-400-801.
 - b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

805. Left Pack (ASCPC) Compressor Discharge Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23431.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the left pack ASCPC compressor discharge temperature sensor, M21103:
 - (a) Remove connector DM21103 from the left pack ASCPC compressor discharge temperature sensor, M21103.
 - (b) Measure the resistance between pin 1 and pin 4 on the temperature sensor, M21103 (WDM 21-51-21).
 - (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Replace the temperature sensor, M21103.

These are the tasks:

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Compressor Discharge Temperature Sensor Removal, AMM
TASK 21-52-41-000-801,

Compressor Discharge Temperature Sensor Installation, AMM
TASK 21-52-41-400-801.

- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Remove the left Air Supply Cabin Pressure Controller (ASCPC-L), M36111. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- 2) Do a wiring check between these pins of connector DM36111AC at the E1-2 shelf and connector DM21103 at the temperature sensor, M21103 (WDM 21-51-21).

DM36111AC	DM21103
pin C4	pin 1
pin D4	pin 2

- 3) If you find a problem with the wiring, do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21103 to the temperature sensor, M21103.
 - c) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the ASCPC-L, M36111.

These are the tasks:

ASCPC Removal, AMM TASK 36-11-20-000-801,

ASCPC Installation, AMM TASK 36-11-20-400-801.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

806. Left Pack (CTC) Compressor Discharge Temperature Sensor-1 Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23411.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Do this check of the left pack CTC compressor discharge temperature sensor-1, M21512:
 - (a) Remove connector DM21512 from the left pack CTC compressor discharge temperature sensor-1, M21512.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor, M21512 (WDM 21-52-11).
 - 1) Pin 1 and pin 4
 - 2) Pin 2 and pin 3
 - (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Replace the temperature sensor, M21512.

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM
TASK 21-52-41-000-801,

Compressor Discharge Temperature Sensor Installation, AMM
TASK 21-52-41-400-801.

- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (d) If the resistance is 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Remove the left cabin temperature controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- 2) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21512 at the temperature sensor, M21512 (WDM 21-52-11).

DM21631AD	DM21512
pin E1	pin 1
pin E2	pin 4
pin F1	pin 2
pin F2	pin 3

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21512 to the temperature sensor, M21512.
 - c) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- 4) If you do not find a problem with the wiring, then continue.
- (2) Replace CTC-L, M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

807. Left Pack Primary Heat Exchanger Outlet Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22901.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the left pack primary heat exchanger outlet temperature sensor, M21509:
 - (a) Remove connector DM21509 from the left pack primary heat exchanger outlet temperature sensor, M21509.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor, M21509 (WDM 21-52-31).
 - 1) Pin 1 and pin 4
 - 2) Pin 2 and pin 3
 - (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Replace the temperature sensor, M21509.

These are the tasks:

Primary Heat Exchanger Outlet Temperature Sensor Removal, AMM TASK 21-52-40-000-801,

Primary Heat Exchanger Outlet Temperature Sensor Installation, AMM TASK 21-52-40-400-801.

- 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.

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- 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the resistance is 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Remove the left cabin temperature controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- 2) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21509 at the temperature sensor, M21509 (WDM 21-52-31).

DM21631AD	DM21509
pin C1	pin 1
pin C2	pin 4
pin D1	pin 2
pin D2	pin 3

- 3) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21509 on the temperature sensor, M21509 (WDM 21-52-31).

DM21631AA	DM21509
pin G1	pin 2
pin G2	pin 3
pin H1	pin 1
pin H2	pin 4

- 4) If you find a problem with the wiring, then do these steps:
- Repair the wiring.
 - Re-connect connector DM21509 to the temperature sensor, M21509.
 - Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - If the maintenance message does not show on the ground test display, you corrected the fault.
- 5) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-L, M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

808. Left Pack Secondary Heat Exchanger Outlet Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23101.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the left pack secondary heat exchanger outlet temperature sensor, M21510:
 - (a) Remove connector DM21510 from the left pack secondary heat exchanger outlet temperature sensor, M21510.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor, M21510 (WDM 21-52-31).
 - 1) Pin 1 and pin 4
 - 2) Pin 2 and pin 3
 - (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

 - 1) Replace the temperature sensor, M21510.

These are the tasks:
Secondary Heat Exchanger Outlet Temperature Sensor Removal, AMM TASK 21-52-42-000-801,
Secondary Heat Exchanger Outlet Temperature Sensor Installation, AMM TASK 21-52-42-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

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- (d) If the resistance is 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Remove the left cabin temperature controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- 2) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21510 at the temperature sensor, M21510 (WDM 21-52-31).

DM21631AD	DM21510
pin G1	pin 1
pin G2	pin 4
pin H1	pin 2
pin H2	pin 3

- 3) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21510 on the temperature sensor, M21510 (WDM 21-52-31):

DM21631AA	DM21510
pin C1	pin 2
pin C2	pin 3
pin D1	pin 1
pin D2	pin 4

- 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21510 to the temperature sensor, M21510.
 - c) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.

- 5) If you do not find a problem with the wiring, then continue.

- (2) Replace the CTC-L, M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

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809. Left Pack Low Limit Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23401.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the low limit valve, V21533.

These are the tasks:

Low Limit Valve Removal, AMM TASK 21-52-30-000-801,

Low Limit Valve Installation, AMM TASK 21-52-30-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (2) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
 - (3) Do this check of the wiring from the CTC-L to the low limit valve:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DV21533 from the low limit valve, V21533.
 - (c) Do a wiring check between these pins of connectors DM21631AB, DM21631AE at the E1-2 shelf and connector DV21533 at the low limit valve, V21533 (WDM 21-52-21):

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DV21533

pin 1		pin B12
pin 3		pin C12
pin 2		pin D12
pin 4		pin C5
pin 6		pin C4
pin 8		pin C7
pin 10	.....	pin C6

DM21631AE

DV21533

pin 1	.....	pin J12
pin 3	.....	pin H12
pin 2	.....	pin G12
pin 4	.....	pin H5
pin 6	.....	pin H4
pin 8	.....	pin H7
pin 10	.....	pin H6

DM21631AB

- (d) If you find a problem with the wiring, do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DV21533.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

810. Left Pack Second Stage Turbine Bypass Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23501.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the second stage turbine bypass valve, V21531.

These are the tasks:

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Second Stage Turbine Bypass Valve Removal, AMM TASK 21-52-32-000-801,
Second Stage Turbine Bypass Valve Installation, AMM TASK 21-52-32-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message does show on the ground test display, then continue.
- (2) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (3) Do this check of the wiring from the CTC-L to the second stage turbine bypass valve:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DV21531 from the second stage turbine bypass valve, V21531.
 - (c) Do a wiring check between these pins of connectors DM21631AB, DM21631AE at the E1-2 shelf and connector DV21531 at the second stage turbine bypass valve, V21531 (WDM 21-52-41):

DV21531

pin 1	.....	pin B10
pin 3	.....	pin C10
pin 2	.....	pin D10
pin 4	.....	pin D5
pin 6	.....	pin D4
pin 8	.....	pin D7
pin 10	.....	pin D6

DM21631AE

DV21531

pin 1	.....	pin J10
pin 3	.....	pin H10
pin 2	.....	pin G10
pin 4	.....	pin G5
pin 6	.....	pin G4
pin 8	.....	pin G7
pin 10	.....	pin G6

DM21631AB

- (d) If you find a problem with the wiring, do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector DV21531.

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- 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

811. Left Pack Economy Cooling Valve - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24901.

B. Initial Evaluation

NOTE: If the air cycle machine (ACM) has failed, it is possible that this maintenance message will also show.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - 1) During the ground test do this visual check:

NOTE: The economy cooling valve test occurs approximately halfway during the ground test.

 - a) Look at the position indicator on the valve.
 - b) Make sure the valve lever moves from full closed to full open and then returns to the full closed position.
 - (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (c) If the maintenance message does not show on the ground test display and the economy cooling valve does not operate correctly during the visual check, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display and the economy cooling valve opens and closes during the ground test, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check for maintenance messages related to the ACM:
 - (a) Look at the Present Leg Faults display on the MAT for a maintenance message related to an ACM failure (select SORT BY ATA and chapter 21):
 - (b) If the maintenance message related to an ACM failure shows in Present Leg Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified fault isolation task for the maintenance message.

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- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the maintenance message related to an ACM failure does not show in Present Leg Faults, then continue.
 - (2) Replace the economy cooling valve, V21532.
These are the tasks:
Economy Cooling Valve Removal, AMM TASK 21-52-31-000-801,
Economy Cooling Valve Installation, AMM TASK 21-52-31-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 1) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - (b) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
 - (3) Replace the left economy cooling valve relay, K21009. (WDM 21-52-33)
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 1) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - (b) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
 - (4) Replace the left turbine inlet temperature sensor, M21514
These are the tasks:
Turbine Inlet Temperature Sensor Removal, AMM TASK 21-52-44-000-801,
Turbine Inlet Temperature Sensor Installation, AMM TASK 21-52-44-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 1) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - (b) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
 - (5) Replace the left secondary heat exchanger outlet temperature sensor, M21510.
These are the tasks:
Secondary Heat Exchanger Outlet Temperature Sensor Removal, AMM TASK 21-52-42-000-801,
Secondary Heat Exchanger Outlet Temperature Sensor Installation, AMM TASK 21-52-42-400-801.

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- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 1) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
- (b) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
- (c) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
- (6) Do this check of the wiring:
 - (a) Disconnect connector DV21532 from the economy cooling valve for the left pack, V21532.
 - (b) Disconnect connector D11031P from the P110 panel.
 - (c) Do a wiring check between these pins of connector D11031P at the P110 panel and connector DV21532 at the economy cooling valve, V21532 (WDM 21-52-31):

D11031P	DV21532
pin 1	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors D11031P and DV21532.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - a) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - 4) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
- (7) Replace the left pack dual heat exchanger.

NOTE: The Economy Cooling Valve maintenance message is based on the temperature difference between the Secondary HX outlet and the Turbine inlet. A non-normal HX outlet temperature can cause the ECV maintenance message.

These are the tasks:

Dual Heat Exchanger Removal, AMM TASK 21-52-01-000-801,
Dual Heat Exchanger Installation, AMM TASK 21-52-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 1) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
- (b) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
- (c) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.

———— **END OF TASK** ————

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813. Left Pack Economy Cooling Valve Relay is not in commanded position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24911.

B. Initial Evaluation

- (1) Look at this circuit breaker to see if it is open:
Look at this circuit breaker to see if it is open:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	23	C21645	L ECV FCV POS SNSR

- (a) If the circuit breaker is open, then do these steps:
- 1) Close the circuit breaker.
 - 2) If the circuit breaker opens when you try to close it, then do the Fault Isolation Procedure - Circuit Breaker Open procedure below.
 - 3) If the circuit breaker stays closed, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - a) If the circuit breaker stays closed and the maintenance message does not show on the ground test display, then there was an intermittent fault.
 - b) If the circuit breaker stays closed and the maintenance message shows on the ground test display, then do the Fault Isolation Procedure - Circuit Breaker Closed procedure below.
- (b) If the circuit breaker is closed, then do the Fault Isolation Procedure - Circuit Breaker Closed procedure below.

C. Fault Isolation Procedure - Circuit Breaker Open

- (1) Replace this circuit breaker:
(WDM 21-52-33)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	23	C21645	L ECV FCV POS SNSR

- (a) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (b) If the circuit breaker opens and the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do this check of the economy cooling valve:
- (a) Disconnect connector DM21645 from the economy cooling valve, M21645 (WDM 21-52-33).
 - (b) Close circuit breaker C21645.
 - 1) If the circuit breaker stays closed, then do these steps:
 - a) Replace the economy cooling valve, V21532.
These are the tasks:
Economy Cooling Valve Removal, AMM TASK 21-52-31-000-801,
Economy Cooling Valve Installation, AMM TASK 21-52-31-400-801.

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- 2) If the circuit breaker opens, then continue.
- (3) Do a wiring check between the economy cooling valve relay K21009 in the P110 panel and pin 1 of connector DV21532 (WDM 21-52-33):
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Close circuit breaker C21645.
 - 3) Re-connect connector DM21532.
 - 4) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (b) If you do not find a problem with the wiring, then continue.
 - (c) Re-connect connector DM21532.
- (4) Replace this economy cooling valve relay, K21009 (WDM 21-52-33):
 - (a) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (b) If the circuit breaker opens and the MAT shows ACTIVE for the maintenance message, then continue.

D. Fault Isolation Procedure - Circuit Breaker Closed

- (1) Replace this circuit breaker:
(WDM 21-52-33)

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	23	C21645	L ECV FCV POS SNSR

- (a) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (b) If the circuit breaker opens and the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the internal wiring for the economy cooling valve circuit in the P110 panel (WDM 21-52-33):
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

————— END OF TASK —————

814. Left Pack Ram Air Inlet Actuator Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23201.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Pack Actuators.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the ram air inlet actuator. Do this task: Ram Air Inlet Actuator Removal, AMM TASK 21-52-20-000-804.
- (2) Move the ram air inlet door through its travel to make sure that it moves smoothly without binding.
- (3) Examine the mechanical linkage for the ram air inlet door and actuator for damage and the actuator driven torque tube for seized end caps:
 - (a) Repair any problems that you find.
- (4) Replace the ram air inlet door if damage to the door was discovered as it moved through its travel:
 - (a) Do this task to remove the ram air inlet door: Ram Air Inlet Door Removal, AMM TASK 21-52-20-000-803.
 - (b) Do this task to install a serviceable ram air inlet door: Ram Air Inlet Door Installation, AMM TASK 21-52-20-400-803.
- (5) If the mechanical linkage for the ram air inlet door and actuator is not loose or damaged and the torque tube end cap is not seized or loose, then continue.
- (6) Replace the ram air inlet actuator for the left pack, M21543.

These are the tasks:

Ram Air Inlet Actuator Removal, AMM TASK 21-52-20-000-804,

Ram Air Inlet Actuator Installation, AMM TASK 21-52-20-400-804.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (7) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message does show on the ground test display, then continue.
- (8) Do this check of the wiring from the CTC-L to the ram air inlet actuator:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DM21543 from the ram air inlet actuator, M21543.
 - (c) Do a wiring check between these pins of connectors DM21631AB, DM21631AE at the E1-2 shelf and connector DM21543 at the ram air inlet actuator, M21543 (WDM 21-52-11):

DM21543

pin 1	.....	pin A13
pin 3	.....	pin B13
pin 2	.....	pin C13
pin 4	.....	pin A5
pin 6	.....	pin A4
pin 8	.....	pin A7
pin 10	.....	pin A6

DM21631AE

DM21543

pin 1	.....	pin K13
pin 3	.....	pin J13
pin 2	.....	pin H13
pin 4	.....	pin K5
pin 6	.....	pin K4
pin 8	.....	pin K7
pin 10	.....	pin K6

DM21631AB

- (d) If you find a problem with the wiring, do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21543.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

815. Left Pack Ram Air Exhaust Actuator Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23301.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Examine the mechanical linkage for the ram air exhaust louvers and actuator for damage.
- (2) If the mechanical linkage is loose or damaged, then do these steps:
 - (a) Tighten, replace or repair the mechanical linkage.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) If the mechanical linkage for the ram air exhaust louvers and actuator is not loose or damaged, then continue.
- (4) Replace the ram air exhaust actuator for the left pack, M21544.

These are the tasks:

Ram Air Exhaust Actuator Removal, AMM TASK 21-52-21-000-806,
Ram Air Exhaust Actuator Installation, AMM TASK 21-52-21-400-806.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (5) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (6) Do this check of the wiring from the CTC-L to the ram air exhaust actuator:

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- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DM21544 from the ram air exhaust actuator, M21544.
- (c) Do a wiring check between these pins of connectors DM21631AB, DM21631AE at the E1-2 shelf and connector DM21544 at the ram air exhaust actuator, M21544 (WDM 21-52-11):

DM21544		DM21631AE	
pin 1	.....	pin A11	
pin 3	.....	pin B11	
pin 2	.....	pin C11	
pin 4	.....	pin B5	
pin 6	.....	pin B4	
pin 8	.....	pin B7	
pin 10	.....	pin B6	

DM21544		DM21631AB	
pin 1	.....	pin K11	
pin 3	.....	pin J11	
pin 2	.....	pin H11	
pin 4	.....	pin J5	
pin 6	.....	pin J4	
pin 8	.....	pin J7	
pin 10	.....	pin J6	

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21544.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Pack Actuators.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

816. Air Conditioning Pack (Left) Discharge Temperature Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-21191.

B. Initial Evaluation

- (1) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.

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- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.

NOTE: While the ground test operates, feel for airflow at the applicable ram air exhaust opening. When the ACM operates, there will be airflow from the ram air exhaust opening.

- (c) If the maintenance message shows on the ground test display and there is airflow at the ram air exhaust opening, then do the Fault Isolation Procedure ACM Serviceable below.
- (d) If the maintenance message shows on the ground test display and there is no airflow at the ram air exhaust opening, then do the Fault Isolation Procedure ACM Not Serviceable below.
- (e) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure ACM Serviceable

- (1) Do these steps to examine the dual heat exchanger for blockage:

- (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door

- (b) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
195JL	Heat Exchanger Door

- (c) Remove the access panel on the ram air duct.

- (d) If there is blockage, then do these steps:

- 1) Remove the blockage.

- 2) Install the access panel.

- 3) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door

- 4) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
195JL	Heat Exchanger Door

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.

- 6) If the maintenance message does not show on the ground test display, you corrected the fault.

- (e) If there is no blockage, then continue.

- (f) Install the access panel.

- (g) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door

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- (h) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
195JL	Heat Exchanger Door

- (2) Replace the left pack (CTC) discharge temperature sensor, M21534.

These are the tasks:

Pack Discharge Temperature Sensor Removal, AMM TASK 21-52-45-000-801,

Pack Discharge Temperature Sensor Installation, AMM TASK 21-52-45-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the left pack (ASCPC) discharge temperature sensor, M21535.

These are the tasks:

Pack Discharge Temperature Sensor Removal, AMM TASK 21-52-45-000-801,

Pack Discharge Temperature Sensor Installation, AMM TASK 21-52-45-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

D. Fault Isolation Procedure ACM Not Serviceable

- (1) Do this torque check of the Air Cycle Machine (ACM):

- (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door

- (b) Remove cooling pack outlet duct.



DO NOT TURN THE ACM IMPELLER IN THE OPPOSITE DIRECTION SHOWN BY THE ARROW. DAMAGE TO THE ACM CAN OCCUR.

- (c) Slowly turn the impeller shaft in the direction of the arrow with less than 50 pound-inches (5.6 newton-meters) of torque.

NOTE: You can find the arrow at the turbine end of the ACM placard.

- (d) If the nut on the end of the impeller shaft becomes loose, then do this step:
- 1) Hold the impeller while you torque the nut to 40 pound-inches (4.5 newton-meters).
- (e) If the impeller shaft requires less than 50 pound-inches (5.6 newton-meters) to start to turn, then do these steps:
- 1) Install the pack outlet duct.

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- 2) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (f) If the impeller shaft requires more than 50 pound-inches (5.6 newton-meters) to start to turn, then do these steps:
 - 1) Replace the ACM.

These are the tasks:
Air Cycle Machine (ACM) Removal, AMM TASK 21-52-02-000-801,
Air Cycle Machine (ACM) Installation, AMM TASK 21-52-02-400-801.
 - 2) Install the pack outlet duct.
 - 3) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

817. Left Pack Compressor Discharge Temperature Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23491.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do these steps to examine the dual heat exchanger for blockage:
 - (a) Open these access panels:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door

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<u>Number</u>	<u>Name/Location</u>
195JL	Heat Exchanger Door

(b) Remove the access panel on the ram air duct.

(c) If there is blockage, then do these steps:

- 1) Remove the blockage.
- 2) Install the access panel.
- 3) Close these access panels:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
195JL	Heat Exchanger Door

4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.

5) If the maintenance message does not show on the ground test display, you corrected the fault.

(d) If there is no blockage, then continue.

(e) Install the access panel.

(f) Close these access panels:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
195JL	Heat Exchanger Door

(2) Do these steps to examine the mechanical linkage for the ram air inlet door and actuator and the ram air exhaust louvers and actuator for damage:

(a) Open these access panels:

<u>Number</u>	<u>Name/Location</u>
191LL	Ram Air Inlet Actuator Door
195QL	Blowout Door

(b) If the mechanical linkage is loose or damaged, then do these steps:

- 1) Tighten, replace or repair the mechanical linkage.
- 2) Close these access panels:

<u>Number</u>	<u>Name/Location</u>
191LL	Ram Air Inlet Actuator Door
195QL	Blowout Door

3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.

4) If the maintenance message does not show on the ground test display, you corrected the fault.

(c) If the mechanical linkage for the ram air inlet door and actuator and the ram air exhaust louvers and actuator is not loose or damaged, then continue.

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- (d) Close these access panels:

<u>Number</u>	<u>Name/Location</u>
191LL	Ram Air Inlet Actuator Door
195QL	Blowout Door

- (3) Do these steps to do a check of the economy cooling bypass check valve:

- (a) Remove the economy cooling bypass check valve. To remove it, do this task: Economy Cooling Bypass Check Valve Removal, AMM TASK 21-52-11-000-801.
- (b) If the economy cooling bypass check valve is not serviceable, then do these steps:
 - 1) Install a new economy cooling bypass check valve. To install it, do this task: Economy Cooling Bypass Check Valve Installation, AMM TASK 21-52-11-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the economy cooling bypass check valve is serviceable, then continue.
- (d) Re-install the economy cooling bypass check valve. To install it, do this task: Economy Cooling Bypass Check Valve Installation, AMM TASK 21-52-11-400-801.

- (4) Replace the CTC compressor discharge temperature sensor-1 for the left pack, M21512.

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,

Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.

- (5) Replace the CTC compressor discharge temperature sensor-2 for the left pack, M21513.

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,

Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.

- (6) Replace the ASCPC compressor discharge temperature sensor for the left pack, M21103.

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,

Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.

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- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message does show on the ground test display, then continue.
- (7) Replace the left cabin temperature controller (CTC-L), M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (8) Replace the left pack flow sensor, M21536.
These are the tasks:
Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

818. Air Cycle Machine Cooling Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-24821, 21-24822.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.
 - (b) Try to operate the applicable cooling pack, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
NOTE: You must immediately check the airflow at the ram air exhaust opening. This airflow check will indicate that the ACM is serviceable or not serviceable only if the upper or lower flow control valve is open.
 - (c) While the cooling pack operates, immediately feel for airflow at the applicable ram air exhaust opening.
NOTE: When the air cycle machine (ACM) operates, there will be airflow from the ram air exhaust opening. If the ACM does not turn within 10 to 15 seconds the cooling pack will shutoff.
 - (d) If the maintenance message shows on the MAT display and there is no airflow at the ram air exhaust opening, then do the Fault Isolation Procedure - ACM Not Serviceable below.
 - (e) If the maintenance message shows on the MAT display and you feel airflow at the ram air exhaust, then do the Fault Isolation Procedure - ACM Serviceable below.

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- (f) If the cooling pack operates and the maintenance message does not show on the MAT display, then there was an intermittent fault.

C. Fault Isolation Procedure - ACM Serviceable

- (1) Do these steps to examine the dual heat exchanger and the ram air inlet duct for blockage:

- (a) Open these access panels:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
195JL	Heat Exchanger Door
196ER	Environmental Control Systems (ECS) Access Door
196JR	Heat Exchanger Door

- (b) Remove the access panel on the ram air duct.

- (c) If there is blockage, then do these steps:

- 1) Remove the blockage.
- 2) Install the access panel.
- 3) Close these access panels:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
195JL	Heat Exchanger Door
196ER	Environmental Control Systems (ECS) Access Door
196JR	Heat Exchanger Door

- 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) System Air On.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

- (d) If there is no blockage, then continue.

- (e) Install the access panel.

- (f) Close these access panels:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
195JL	Heat Exchanger Door
196ER	Environmental Control Systems (ECS) Access Door
196JR	Heat Exchanger Door

- (g) Do the Fault Isolation Procedure - ACM Not Serviceable below.

- (2) Do a visual check of the low limit valve:

NOTE: A low limit valve with an undiagnosed mechanical failure can let ice collect in the condenser/reheater.

- (a) Remove the low limit valve. To remove the low limit valve, do this task: Low Limit Valve Removal, AMM TASK 21-52-30-000-801.
- (b) Do an inspection of the low limit valve shaft and butterfly disk for damage.
- (c) If there is damage found, do the steps that follow:
 - 1) Install a new low limit valve. To install the valve, do this task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801

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- 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) System Air On.
- 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If there is no damage found, re-install the valve and continue. To re-install the valve, do this task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801.
- (3) Do a check of the condenser/reheater performance:

NOTE: A reduced condenser/reheater airflow can cause the maintenance message to show on the MAT. Airflow can be reduced by blockage or by internal corrosion. Service experience shows that airflow will be reduced to an unacceptable level in 4000 to 8000 flight hours, depending on the operating conditions (777-SL-21-027).

NOTE: The condenser/reheater vendor has developed a condenser/reheater with a heat exchanger core that has a corrosion resistant coating called RockHard. They have also developed a repair and recoating process using RockHard. This repair can only be accomplished at an approved vendor repair facility. It is recommended that the condenser/reheater be replaced or repaired to utilize the corrosion resistant coating (777-SL-21-029).
- (a) Do this task: Condenser/Reheater Flow Restriction Test, AMM TASK 21-52-03-000-802.
- (b) If the condenser/reheater performance is unacceptable, then replace the condenser/reheater.

These are the tasks:

Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,
Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.
- (c) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) System Air On.
- (d) If the maintenance message does not show on the ground test display, you corrected the fault.

D. Fault Isolation Procedure - ACM Not Serviceable

- (1) Do these steps to examine the dual heat exchanger and the ram air inlet duct for blockage:
 - (a) Open these access panels:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
195JL	Heat Exchanger Door
196ER	Environmental Control Systems (ECS) Access Door
196JR	Heat Exchanger Door
 - (b) Remove the access panel on the ram air duct.
 - (c) Remove all blockage found in the ram air inlet duct or dual heat exchanger.
 - (d) Install the access panel.

Close these access panels:

<u>Number</u>	<u>Name/Location</u>
195JL	Heat Exchanger Door
196JR	Heat Exchanger Door
- (2) Do this torque check of the Air Cycle Machine (ACM):

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- (a) Do this task: Outlet Duct/Muffler Assembly Removal, AMM TASK 21-52-07-000-804-002.



CAUTION

DO NOT TURN THE ACM IMPELLER IN THE OPPOSITE DIRECTION SHOWN BY THE ARROW. DAMAGE TO THE ACM CAN OCCUR.

- (b) Turn the impeller shaft in the direction of the arrow with less than 50 inch-lbs of torque.

NOTE: You can find the arrow at the turbine end of the ACM placard.

- (c) If the impeller shaft requires more than 50 inch-lbs to start to turn, then do these steps:

- 1) Replace the ACM.

These are the tasks:

Air Cycle Machine (ACM) Removal, AMM TASK 21-52-02-000-801,

Air Cycle Machine (ACM) Installation, AMM TASK 21-52-02-400-801.

- 2) Do this task: Outlet Duct/Muffler Assembly Installation, AMM TASK 21-52-07-400-803-002.

- 3) Close these access panels:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
196ER	Environmental Control Systems (ECS) Access Door

Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.

- 4) If the maintenance message does not show on the ground test display, you corrected the fault.

- (d) If the impeller shaft requires less than 50 inch-lbs to start to turn, then do these steps:

- 1) Do this task: Outlet Duct/Muffler Assembly Installation, AMM TASK 21-52-07-400-803-002.

- 2) Close these access panels:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
196ER	Environmental Control Systems (ECS) Access Door

- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) System Air On.

- 4) If the maintenance message does not show on the ground test display, you corrected the fault.

- (3) Do a visual check of the low limit valve:

NOTE: A low limit valve with an undiagnosed mechanical failure can let ice collect in the condenser/reheater.

- (a) Remove the low limit valve. To remove the low limit valve, do this task: Low Limit Valve Removal, AMM TASK 21-52-30-000-801.

- (b) Do an inspection of the low limit valve shaft and butterfly disk for damage.

- (c) If there is damage found, do the steps that follow:

- 1) Install a new valve. Low Limit Valve Installation, AMM TASK 21-52-30-400-801

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- 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) System Air On.
- 3) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If there is no damage found, re-install the valve and continue. To re-install the valve, do this task: Low Limit Valve Installation, AMM TASK 21-52-30-400-801.
- (4) Do a check of the condenser/reheater performance:

NOTE: A reduced condenser/reheater airflow can cause the maintenance message to show on the MAT. Airflow can be reduced by blockage or by internal corrosion. Service experience shows that airflow will be reduced to an unacceptable level in 4000 to 8000 flight hours, depending on the operating conditions (777-SL-21-027).

NOTE: The condenser/reheater vendor has developed a condenser/reheater with a heat exchanger core that has a corrosion resistant coating called RockHard. They have also developed a repair and recoating process using RockHard. This repair can only be accomplished at an approved vendor repair facility. It is recommended that the condenser/reheater be replaced or repaired to utilize the corrosion resistant coating (777-SL-21-029).
- (a) Do this task: Condenser/Reheater Flow Restriction Test, AMM TASK 21-52-03-000-802.
- (b) If the condenser/reheater performance is unacceptable, then replace the condenser/reheater.

These are the tasks:

Condenser/Reheater Removal, AMM TASK 21-52-03-000-801,
Condenser/Reheater Installation, AMM TASK 21-52-03-400-801.
- (c) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) System Air On.
- (d) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

819. Right Pack Turbine Inlet Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-21002.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Do this check at the turbine inlet temperature sensor for the right cooling pack, M21523:
 - (a) Disconnect connector DM21523 from the turbine inlet temperature sensor for the right cooling pack, M21523.
 - (b) Measure the resistance between pin 1 and pin 2 of the temperature sensor, M21523 (WDM 21-52-32).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21523.
These are the tasks:
Turbine Inlet Temperature Sensor Removal, AMM TASK 21-52-44-000-801,
Turbine Inlet Temperature Sensor Installation, AMM TASK 21-52-44-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the resistance is 1K-1000K ohms, then do these steps:
 - 1) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21523 at the temperature sensor, M21523 (WDM 21-52-32).

DM21632AD	DM21523
pin B3	pin 1
pin B4	pin 2

- 3) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21523 at the temperature sensor, M21523 (WDM 21-52-32).

DM21632AA	DM21523
pin J3	pin 1
pin J4	pin 2

- 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21523 to the temperature sensor, M21523.
 - c) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-R, M21632.
These are the tasks:

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Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

820. Right Pack (CTC) Discharge Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-21102.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check at the right pack CTC discharge temperature sensor, M21527:
 - (a) Disconnect connector DM21527 from the right pack CTC discharge temperature sensor, M21527.
 - (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21527 (WDM 21-52-32).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21527.
These are the tasks:
Pack Discharge Temperature Sensor Removal, AMM TASK 21-52-45-000-801,
Pack Discharge Temperature Sensor Installation, AMM TASK 21-52-45-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21527 at the temperature sensor, M21527 (WDM 21-52-32).

DM21632AD

pin C3 pin 1
pin C4 pin 2

DM21527

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21527 to the temperature sensor, M21527.

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- c) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-R, M21632.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

821. Right Pack (ASCPC) Discharge Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-21112.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check at the right pack ASCPC discharge temperature sensor, M21528.
 - (a) Remove connector DM21528 from the right pack ASCPC discharge temperature sensor, M21528.
 - (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21528 (WDM 21-51-22).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21528.
These are the tasks:
Pack Discharge Temperature Sensor Removal, AMM TASK 21-52-45-000-801,
Pack Discharge Temperature Sensor Installation, AMM TASK 21-52-45-400-801.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K ohms, then do these steps:
- (e) Remove the right air supply cabin pressure controller (ASCPC-R), M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - 1) Do a wiring check between these pins of connector DM36112AC at the E2-2 shelf and connector DM21528 at the temperature sensor, M21528 (WDM 21-51-22).

DM36112AC

pin C3
pin D3

DM21528

pin 1
pin 2

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- 2) If you find a problem with the wiring, do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21528 to the temperature sensor, M21528.
 - c) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 3) If you do not find a problem with the wiring, then continue.
- (2) Replace the ASCPC-R, M36112.
- These are the tasks:
- ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

822. Right Pack (CTC) Condenser Inlet-1 Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29012.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check at the right pack condenser inlet-1 temperature sensor, M21524:
 - (a) Disconnect connector DM21524 from the right pack condenser inlet-1 temperature sensor, M21524.
 - (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21524 (WDM 21-52-22).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21524.These are the tasks:
Condenser Inlet Temperature Sensor Removal, AMM TASK 21-52-43-000-801,
Condenser Inlet Temperature Sensor Installation, AMM TASK 21-52-43-400-801.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (2) If the resistance is 1K-1000K, then do these steps:
 - 1) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.

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- 2) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21524 at the temperature sensor, M21524 (WDM 21-52-22).

DM21632AD	DM21524
pin A3	pin 1
pin A4	pin 2

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21524 to the temperature sensor, M21524.
 - c) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-R, M21632.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

823. Left Pack (CTC) Condenser Inlet-2 Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29021.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the left pack condenser inlet-2 temperature sensor, M21531:
 - (a) Disconnect connector DM21531 from the left pack condenser inlet-2 temperature sensor, M21531.
 - (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21531 (WDM 21-52-21).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21531.
- These are the tasks:
- Condenser Inlet Temperature Sensor Removal, AMM TASK 21-52-43-000-801,
Condenser Inlet Temperature Sensor Installation, AMM TASK 21-52-43-400-801.

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- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Remove the left cabin temperature controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21531 at the temperature sensor, M21531 (WDM 21-52-21).

DM21631AA	DM21531
pin K3	pin 1
pin K4	pin 2
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21531 to the temperature sensor, M21531.
 - c) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-L, M21631.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

824. Right Pack (CTC) Condenser Inlet-2 Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29022.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the right pack condenser inlet-2 temperature sensor, M21525:
 - (a) Disconnect connector DM21525 from the right pack condenser inlet-2 temperature sensor, M21525.
 - (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21525 (WDM 21-52-22).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:

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- 1) Replace the temperature sensor, M21525.
These are the tasks:
Condenser Inlet Temperature Sensor Removal, AMM TASK 21-52-43-000-801,
Condenser Inlet Temperature Sensor Installation, AMM TASK 21-52-43-400-801.
- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21525 at the temperature sensor, M21525 (WDM 21-52-22).

DM21632AA	DM21525
pin K3	pin 1
pin K4	pin 2
- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21525 to the temperature sensor, M21525.
 - c) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-R, M21632.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

825. Mix Manifold Discharge-1 R Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-28012.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Do this check of the right mix manifold discharge temperature sensor-1, M21526:
 - (a) Disconnect connector DM21526 from the right mix manifold discharge temperature sensor-1, M21526.
 - (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21526 (WDM 21-52-42).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21526.
These are the tasks:
Mix Manifold Discharge Temperature Sensor Removal, AMM TASK 21-52-46-000-801,
Mix Manifold Discharge Temperature Sensor Installation, AMM TASK 21-52-46-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21526 at the temperature sensor, M21526 (WDM 21-52-42).

DM21632AD	DM21526
pin D3	pin 1
pin D4	pin 2

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21526 to the temperature sensor, M21526.
 - c) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 3) If you do not find a problem with the wiring, then do these steps:
 - a) Replace the CTC-R, M21632.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

826. Mix Manifold Discharge-2 L Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-28021.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the mix manifold discharge temperature sensor-2 L, M21533:
 - (a) Disconnect connector DM21533 from the mix manifold discharge temperature sensor-2 L, M21533.
 - (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21533 (WDM 21-52-41).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21533.
These are the tasks:
Mix Manifold Discharge Temperature Sensor Removal, AMM TASK 21-52-46-000-801,
Mix Manifold Discharge Temperature Sensor Installation, AMM TASK 21-52-46-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Remove the left cabin temperature controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21533 at the temperature sensor, M21533 (WDM 21-52-41).

DM21631AA	DM21533
pin G3	pin 1
pin G4	pin 2
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21533 to the temperature sensor, M21533.
 - c) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-L, M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

827. Mix Manifold Discharge-2 R Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-28022.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the mix manifold discharge temperature sensor-2 R, M21529:
- (a) Disconnect connector DM21529 from the mix manifold discharge temperature sensor-2 R, M21529.
- (b) Measure the resistance between pin 1 and pin 2 on the temperature sensor, M21529 (WDM 21-52-42).
- (c) If the resistance is not 1K-1000K ohms, then do these steps:
- 1) Replace the temperature sensor, M21529.
These are the tasks:
Mix Manifold Discharge Temperature Sensor Removal, AMM TASK 21-52-46-000-801,
Mix Manifold Discharge Temperature Sensor Installation, AMM TASK 21-52-46-400-801.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
- 1) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21529 at the temperature sensor, M21529 (WDM 21-52-42).

DM21632AA

pin G3 pin 1
pin G4 pin 2

DM21529

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21529 to the temperature sensor, M21529.
 - c) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-R, M21632.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

828. Right Pack (ASCPC) Compressor Discharge Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23432.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the right pack ASCPC compressor discharge temperature sensor, M21206:
 - (a) Remove connector DM21206 from the right pack ASCPC compressor discharge temperature sensor, M21206.
 - (b) Measure the resistance between pin 1 and pin 4 on the temperature sensor, M21206 (WDM 21-51-22).
 - (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Replace the temperature sensor, M21206.

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM
TASK 21-52-41-000-801,

Compressor Discharge Temperature Sensor Installation, AMM
TASK 21-52-41-400-801.

- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

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- 1) Remove the right air supply cabin pressure controller (ASCPC-R), M36112. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- 2) Do a wiring check between these pins of connector DM36112AC at the E2-2 shelf and connector DM21206 at the temperature sensor, M21206 (WDM 21-51-22).

DM36112AC	DM21206
pin C4	pin 1
pin D4	pin 4

- 3) If you find a problem with the wiring, do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21206 to the temperature sensor, M21206.
 - c) Re-install the ASCPC-R, M36112. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the ASCPC-R, M36112.
- These are the tasks:
- ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

829. Right Pack (CTC) Compressor Discharge Temperature Sensor-1 Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23412.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the right pack CTC compressor discharge temperature sensor-1, M21520:
 - (a) Remove connector DM21520 from the right pack CTC compressor discharge temperature sensor-1, M21520.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor, M21520 (WDM 21-52-11).
 - 1) Pin 1 and pin 4
 - 2) Pin 2 and pin 3

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- (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Replace the temperature sensor, M21520.

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM
TASK 21-52-41-000-801,

Compressor Discharge Temperature Sensor Installation, AMM
TASK 21-52-41-400-801.

- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (d) If the resistance is 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.

- 2) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21520 at the temperature sensor, M21520 (WDM 21-52-12).

DM21632AD

DM21520

pin E1	.....	pin 1
pin E2	.....	pin 4
pin F1	.....	pin 2
pin F2	.....	pin 3

- 3) If you find a problem with the wiring, then do these steps:

- Repair the wiring.
- Re-connect connector DM21520 to the temperature sensor, M21520.
- Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- 4) If you do not find a problem with the wiring, then continue.

- (2) Replace the CTC-R, M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

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830. Left Pack (CTC) Compressor Discharge Temperature Sensor-2 Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23421.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the left pack CTC compressor discharge temperature sensor-2, M21513:
 - (a) Remove connector DM21513 from the left pack CTC compressor discharge temperature sensor-2, M21513.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor, M21513 (WDM 21-52-11).
 - 1) Pin 1 and pin 4
 - 2) Pin 2 and pin 3

- (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Replace the temperature sensor, M21513.

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM
TASK 21-52-41-000-801,

Compressor Discharge Temperature Sensor Installation, AMM
TASK 21-52-41-400-801.

- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (d) If the resistance is 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Remove the left cabin temperature controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- 2) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21513 at the temperature sensor, M21513 (WDM 21-52-11).

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DM21631AA	DM21513
pin F1	pin 1
pin F2	pin 4
pin E1	pin 2
pin E2	pin 3

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21513 to the temperature sensor, M21513.
 - c) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 4) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-L, M21631.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

831. Right Pack (CTC) Compressor Discharge Temperature Sensor-2 Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23422.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the right pack CTC compressor discharge temperature sensor-2, M21522:
- (a) Remove connector DM21522 from the right pack CTC compressor discharge temperature sensor-2, M21522.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor, M21522 (WDM 21-52-12).
 - 1) Pin 1 and pin 4
 - 2) Pin 2 and pin 3
 - (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

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- 1) Replace the temperature sensor, M21522.

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM
TASK 21-52-41-000-801,

Compressor Discharge Temperature Sensor Installation, AMM
TASK 21-52-41-400-801.

- 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (d) If the resistance is 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

- 1) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- 2) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21522 at the temperature sensor, M21522 (WDM 21-52-12).

DM21632AA	DM21522
pin F1	pin 1
pin F2	pin 4
pin E1	pin 2
pin E2	pin 3

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21522 to the temperature sensor, M21522.
 - c) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If you do not find a problem with the wiring, then continue.

- (2) Replace the CTC-R, M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

832. Right Pack Primary Heat Exchanger Outlet Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22902.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the right pack primary heat exchanger outlet temperature sensor, M21518:
 - (a) Remove connector DM21518 from the right pack primary heat exchanger outlet temperature sensor, M21518.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor, M21518 (WDM 21-52-32):
 - 1) Pin 1 and pin 4
 - 2) Pin 2 and pin 3
 - (c) If the resistance is not 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

 - 1) Replace the temperature sensor, M21518.

These are the tasks:

Primary Heat Exchanger Outlet Temperature Sensor Removal, AMM TASK 21-52-40-000-801,

Primary Heat Exchanger Outlet Temperature Sensor Installation, AMM TASK 21-52-40-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the resistance is 500-575 ohms, then do these steps:

NOTE: A resistance value of 500 to 575 ohms is based on an ambient temperature of 25 to 100 degrees Fahrenheit (-3.8 to 37.8 degrees Celsius). Ambient temperatures above or below this temperature range will result in resistance values that are higher or lower than the given range.

 - 1) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21518 at the temperature sensor, M21518 (WDM 21-52-32).

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DM21632AD	DM21518
pin C1	pin 1
pin C2	pin 4
pin D1	pin 2
pin D2	pin 3

- 3) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21518 on the temperature sensor, M21518 (WDM 21-52-32).

DM21632AA	DM21518
pin G1	pin 2
pin G2	pin 3
pin H1	pin 1
pin H2	pin 4

- 4) If you find a problem with the wiring, then do these steps:
- Repair the wiring.
 - Re-connect connector DM21518 to the temperature sensor, M21518.
 - Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - If the maintenance message does not show on the ground test display, you corrected the fault.
- 5) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-R, M21632.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

833. Right Pack Low Limit Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23402.

B. Initial Evaluation

- If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
 - If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.

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- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the low limit valve, V21543.

These are the tasks:

Low Limit Valve Removal, AMM TASK 21-52-30-000-801,

Low Limit Valve Installation, AMM TASK 21-52-30-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message does show on the ground test display, then continue.
- (2) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message does show on the ground test display, then continue.
- (3) Do this check of the wiring from the CTC-R to the low limit valve:
- (a) Remove the CTC-R, M21632, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DV21543 from the low limit valve, V21543.
- (c) Do a wiring check between these pins of connectors DM21632AB, DM21632AE at the E2-2 shelf and connector DV21543 at the low limit valve, V21543 (WDM 21-52-22):

DV21543

pin 1	.....	pin B12
pin 3		pin C12
pin 2		pin D12
pin 4		pin C5
pin 6		pin C4
pin 8		pin C7
pin 10		pin C6

DM21632AE

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DV21543

pin 1		pin J12
pin 3		pin H12
pin 2		pin G12
pin 4		pin H5
pin 6		pin H4
pin 8		pin H7
pin 10	.....	pin H6

DM21632AB

- (d) If you find a problem with the wiring, do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DV21543.
 - 3) Re-install the CTC-R, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

834. Right Pack Second Stage Turbine Bypass Valve Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23502.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the second stage turbine bypass valve, V21541.
- These are the tasks:
- Second Stage Turbine Bypass Valve Removal, AMM TASK 21-52-32-000-801,
Second Stage Turbine Bypass Valve Installation, AMM TASK 21-52-32-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message does show on the ground test display, then continue.

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- (2) Replace the right cabin temperature controller (CTC-R), M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message does show on the ground test display, then continue.
- (3) Do this check of the wiring from the CTC-R to the second stage turbine bypass valve:
- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DV21541 from the second stage turbine bypass valve, V21541.
- (c) Do a wiring check between these pins of connectors DM21632AB, DM21632AE at the E2-2 shelf and connector DV21541 at the second stage turbine bypass valve, V21541 (WDM 21-52-42):

DV21541

pin 1	.....	pin B10
pin 3	.....	pin C10
pin 2	.....	pin D10
pin 4	.....	pin D5
pin 6	.....	pin D4
pin 8	.....	pin D7
pin 10	.....	pin D6

DM21632AE

DV21541

pin 1	.....	pin J10
pin 3	.....	pin H10
pin 2	.....	pin G10
pin 4	.....	pin G5
pin 6	.....	pin G4
pin 8	.....	pin G7
pin 10	.....	pin G6

DM21632AB

- (d) If you find a problem with the wiring, do these steps:
- 1) Repair the wiring.
- 2) Re-connect the connector DV21541.
- 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

———— **END OF TASK** ————

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835. Right Pack Economy Cooling Valve - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24902.

B. Initial Evaluation

NOTE: If the air cycle machine (ACM) has failed, it is possible that this maintenance message will also show.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.

- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.

- 1) During the ground test do this visual check:

NOTE: The economy cooling valve test occurs approximately halfway during the ground test.

- a) Look at the position indicator on the valve.
 - b) Make sure the valve lever moves from full closed to full open and then returns to the full closed position.

NOTE: It will take approximately 45 seconds for the valve to move from full closed to full open and then return to the full closed position.

- (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (c) If the maintenance message does not show on the ground test display and the economy cooling valve does not operate correctly during the visual check, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display and the economy cooling valve opens and closes during the ground test, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check for maintenance messages related to the ACM:

- (a) Look at the Present Leg Faults display on the MAT for a maintenance message related to an ACM failure (select SORT BY ATA and chapter 21):

- (b) If the maintenance message related to an ACM failure shows in Present Leg Faults, then do these steps:

- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified fault isolation task for the maintenance message.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (c) If the maintenance message related to an ACM failure does not show in Present Leg Faults, then continue.

- (2) Replace the economy cooling valve, V21542.

These are the tasks:

Economy Cooling Valve Removal, AMM TASK 21-52-31-000-801,

Economy Cooling Valve Installation, AMM TASK 21-52-31-400-801.

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- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 1) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - (b) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
- (3) Replace the right economy cooling valve relay, K21008. (WDM 21-52-34)
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 1) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - (b) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
- (4) Replace the right secondary heat exchanger outlet temperature sensor, M21519.
- These are the tasks:
- Secondary Heat Exchanger Outlet Temperature Sensor Removal, AMM TASK 21-52-42-000-801,
- Secondary Heat Exchanger Outlet Temperature Sensor Installation, AMM TASK 21-52-42-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 1) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - (b) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
- (5) Replace the right turbine inlet temperature sensor, M21523
- These are the tasks:
- Turbine Inlet Temperature Sensor Removal, AMM TASK 21-52-44-000-801,
- Turbine Inlet Temperature Sensor Installation, AMM TASK 21-52-44-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 1) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - (b) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
- (6) Do this check of the wiring from the economy cooling valve to the P210 panel:

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- (a) Disconnect connector DV21542 from the economy cooling valve for the right pack, V21542.
- (b) Disconnect connector D21031P from the P210 panel.
- (c) Do a wiring check between these pins of connector D21031P at the P210 panel and connector DV21542 at the economy cooling valve, V21542 (WDM 21-52-32):

D21031P	DV21542
pin 2	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors D21031P and DV21542.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - a) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - 4) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
- (7) Replace the right pack dual heat exchanger.

NOTE: The Economy Cooling Valve maintenance message is based on the temperature difference between the Secondary HX outlet and the Turbine inlet. A non-normal HX outlet temperature can cause the ECV maintenance message.

These are the tasks:

Dual Heat Exchanger Removal, AMM TASK 21-52-01-000-801,
Dual Heat Exchanger Installation, AMM TASK 21-52-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 1) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
- (b) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
- (c) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.

————— **END OF TASK** —————

836. Right Pack Ram Air Inlet Actuator Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23202.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.

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- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right Pack Actuators.
- (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the ram air inlet actuator. Do this task: Ram Air Inlet Actuator Removal, AMM TASK 21-52-20-000-804.
- (2) Move the ram air inlet door through its travel to make sure that it moves freely without binding.
- (3) Examine the mechanical linkage for the ram air inlet door and actuator for damage and the actuator driven torque tube for seized end caps:
 - (a) Repair any problems that you find.
- (4) Replace the ram air inlet door if damage to the door was discovered as it moved through its travel:
 - (a) Do this task to remove the ram air inlet door: Ram Air Inlet Door Removal, AMM TASK 21-52-20-000-803.
 - (b) Do this task to install a serviceable ram air inlet door: Ram Air Inlet Door Installation, AMM TASK 21-52-20-400-803.
- (5) If the mechanical linkage for the ram air inlet door and actuator is not loose or damaged and the torque tube end caps are not seized or loose, then continue.
- (6) Replace the ram air inlet actuator for the right pack, M21541.
These are the tasks:
Ram Air Inlet Actuator Removal, AMM TASK 21-52-20-000-804,
Ram Air Inlet Actuator Installation, AMM TASK 21-52-20-400-804.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (7) Replace the right cabin temperature controller (CTC-R), M21632.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (8) Do this check of the wiring from the (CTC-R) to the ram air inlet actuator:
 - (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DM21541 from the ram air inlet actuator, M21541.

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- (c) Do a wiring check between these pins of connectors DM21632AB, DM21632AE at the E2-2 shelf and connector DM21541 at the ram air inlet actuator, M21541 (WDM 21-52-12):

DM21541	DM21632AE
pin 1	pin A13
pin 3	pin B13
pin 2	pin C13
pin 4	pin A5
pin 6	pin A4
pin 8	pin A7
pin 10	pin A6

DM21541	DM21632AB
pin 1	pin K13
pin 3	pin J13
pin 2	pin H13
pin 4	pin K5
pin 6	pin K4
pin 8	pin K7
pin 10	pin K6

- (d) If you find a problem with the wiring, do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21541.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

———— **END OF TASK** ————

837. Right Pack Ram Air Exhaust Actuator Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23302.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
- (a) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right Pack Actuators.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.

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- (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Examine the mechanical linkage for the ram air exhaust louvers and actuator for damage.
- (2) If the mechanical linkage is loose or damaged, then do these steps:
 - (a) Tighten, replace or repair the mechanical linkage.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) If the mechanical linkage for the ram air exhaust louvers and actuator is not loose or damaged, then continue.
- (4) Replace the ram air exhaust actuator for the right pack, M21542.
These are the tasks:
Ram Air Exhaust Actuator Removal, AMM TASK 21-52-21-000-806,
Ram Air Exhaust Actuator Installation, AMM TASK 21-52-21-400-806.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (5) Replace the right cabin temperature controller (CTC-R), M21632.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message does show on the ground test display, then continue.
- (6) Do this check of the wiring from the CTC-R to the ram air exhaust actuator:
 - (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DM21542 from the ram air exhaust actuator, M21542.
 - (c) Do a wiring check between these pins of connectors DM21632AB, DM21632AE at the E2-2 shelf and connector DM21542 at the ram air exhaust actuator, M21542 (WDM 21-52-12):



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DM21542

pin 1		pin A11
pin 3		pin B11
pin 2		pin C11
pin 4		pin B5
pin 6		pin B4
pin 8		pin B7
pin 10	.....	pin B6

DM21632AE

DM21542

pin 1	.....	pin K11
pin 3	.....	pin J11
pin 2	.....	pin H11
pin 4	.....	pin J5
pin 6	.....	pin J4
pin 8	.....	pin J7
pin 10	.....	pin J6

DM21632AB

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM21542.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Pack Actuators.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

838. Left Pack Turbine Inlet Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-21001.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Do this check at the turbine inlet temperature sensor for the left cooling pack, M21514:
 - (a) Disconnect connector DM21514 from the turbine inlet temperature sensor for the left cooling pack, M21514.
 - (b) Measure the resistance between pin 1 and pin 2 of the temperature sensor, M21514 (WDM 21-52-31).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21514.
These are the tasks:
Turbine Inlet Temperature Sensor Removal, AMM TASK 21-52-44-000-801,
Turbine Inlet Temperature Sensor Installation, AMM TASK 21-52-44-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the resistance is 1K-1000K ohms, then do these steps:
 - 1) Remove the left cabin temperature controller (CTC-L), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 2) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21514 at the temperature sensor, M21514 (WDM 21-52-31).

DM21631AD	DM21514
pin B3	pin 1
pin B4	pin 2
 - 3) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21514 at the temperature sensor, M21514 (WDM 21-52-31).

DM21631AA	DM21514
pin J3	pin 1
pin J4	pin 2
- (2) Replace the CTC-L, M21631.
These are the tasks:

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Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left Cabin Temperature Controller.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

839. Right Pack Secondary Heat Exchanger Outlet Temperature Sensor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23102.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check at the right pack secondary heat exchanger outlet temperature sensor, M21519:
 - (a) Remove connector DM21519 from the right pack secondary heat exchanger outlet temperature sensor, M21519.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor, M21519 (WDM 21-52-32).
 - 1) Pin 1 and pin 4
 - 2) Pin 2 and pin 3
 - (c) If the resistance is not 400-900 ohms, then do these steps:
 - 1) Replace the temperature sensor, M21519.

These are the tasks:
Secondary Heat Exchanger Outlet Temperature Sensor Removal, AMM TASK 21-52-42-000-801,
Secondary Heat Exchanger Outlet Temperature Sensor Installation, AMM TASK 21-52-42-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the resistance is 400-900 ohms, then do these steps:

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- 1) Remove the right cabin temperature controller (CTC-R), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- 2) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21519 at the temperature sensor, M21519 (WDM 21-52-32):

DM21632AD	DM21519
pin G1	pin 1
pin G2	pin 4
pin H1	pin 2
pin H2	pin 3

- 3) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21519 on the temperature sensor, M21519 (WDM 21-52-32):

DM21632AA	DM21519
pin C1	pin 2
pin C2	pin 3
pin D1	pin 1
pin D2	pin 4

- 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM21519 to the temperature sensor, M21519.
 - c) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If you do not find a problem with the wiring, then continue.
- (2) Replace the CTC-R, M21632.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right Cabin Temperature Controller.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

841. Right Pack Economy Cooling Valve Relay is not in commanded position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24912.

B. Initial Evaluation

- (1) Look at this circuit breaker to see if it is open:

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Look at this circuit breaker to see if it is open:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	4	C21646	R ECV/FCV POS SNSR

- (a) If the circuit breaker is open, then do these steps:
 - 1) Close the circuit breaker.
 - 2) If the circuit breaker opens when you try to close it, then do the Fault Isolation Procedure - Circuit Breaker Open procedure below.
 - 3) If the circuit breaker stays closed, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - a) If the circuit breaker stays closed and the maintenance message does not show on the ground test display, then there was an intermittent fault.
 - b) If the circuit breaker stays closed and the maintenance message shows on the ground test display, then do the Fault Isolation Procedure - Circuit Breaker Closed procedure below.
- (b) If the circuit breaker is closed, then do the Fault Isolation Procedure - Circuit Breaker Closed procedure below.

C. Fault Isolation Procedure - Circuit Breaker Open

- (1) Replace this circuit breaker:

(WDM 21-52-34)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	4	C21646	R ECV/FCV POS SNSR

- (a) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (b) If the circuit breaker opens and the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do this check of the economy cooling valve:
 - (a) Disconnect connector DM21646 from the economy cooling valve, M21646 (WDM 21-52-34).
 - (b) Close circuit breaker C21646.
 - 1) If the circuit breaker stays closed, then do these steps:
 - a) Replace the economy cooling valve, V21542.
These are the tasks:
Economy Cooling Valve Removal, AMM TASK 21-52-31-000-801,
Economy Cooling Valve Installation, AMM TASK 21-52-31-400-801.
 - 2) If the circuit breaker opens, then continue.
 - (3) Do a wiring check between the economy cooling valve relay K21008 in the P210 panel and pin 1 of connector DV21542 (WDM 21-52-34):
 - (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.

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- 2) Close circuit breaker C21646.
 - 3) Re-connect connector DM21542.
 - 4) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (b) If you do not find a problem with the wiring, then continue.
- (c) Re-connect connector DM21542.
- (4) Replace this economy cooling valve relay, K21008 (WDM 21-52-34):
- (a) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (b) If the circuit breaker opens and the MAT shows ACTIVE for the maintenance message, then continue.

D. Fault Isolation Procedure - Circuit Breaker Closed

- (1) Replace this circuit breaker:
(WDM 21-52-34)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	4	C21646	R ECV/FCV POS SNSR

- (a) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (b) If the circuit breaker opens and the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the internal wiring for the economy cooling valve circuit in the P210 panel (WDM 21-52-34):
- (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) If the circuit breaker stays closed, and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

————— END OF TASK —————

842. Air Conditioning Pack (Right) Discharge Temperature Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-21192.

B. Initial Evaluation

- (1) If the MAT shows LATCHED for the maintenance message, then do these steps:
- (a) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.

NOTE: While the ground test operates, feel for airflow at the applicable ram air exhaust opening. When the air cycle machine (ACM) operates, there will be airflow from the ram air exhaust opening.

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- (c) If the maintenance message shows on the ground test display and there is airflow at the ram air exhaust opening, then do the Fault Isolation Procedure ACM Serviceable below.
- (d) If the maintenance message shows on the ground test display and there is no airflow at the ram air exhaust opening, then do the Fault Isolation Procedure ACM Not Serviceable below.
- (e) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure ACM Serviceable

- (1) Do these steps to examine the dual heat exchanger for blockage:

- (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>

196ER	Environmental Control Systems (ECS) Access Door

- (b) Open this access panel:

<u>Number</u>	<u>Name/Location</u>

196JR	Heat Exchanger Door

- (c) Remove the access panel on the ram air duct.

- (d) If there is blockage, then do these steps:

- 1) Remove the blockage.

- 2) Install the access panel.

- 3) Close this access panel:

<u>Number</u>	<u>Name/Location</u>

196ER	Environmental Control Systems (ECS) Access Door

- 4) Close this access panel:

<u>Number</u>	<u>Name/Location</u>

196JR	Heat Exchanger Door

- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.

- 6) If the maintenance message does not show on the ground test display, you corrected the fault.

- (e) If there is no blockage, then continue.

- (f) Install the access panel.

- (g) Close this access panel:

<u>Number</u>	<u>Name/Location</u>

196ER	Environmental Control Systems (ECS) Access Door

- (h) Close this access panel:

<u>Number</u>	<u>Name/Location</u>

196JR	Heat Exchanger Door

- (2) Replace the right pack (CTC) discharge temperature sensor, M21527.

These are the tasks:

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Pack Discharge Temperature Sensor Removal, AMM TASK 21-52-45-000-801,

Pack Discharge Temperature Sensor Installation, AMM TASK 21-52-45-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the right pack (ASCPC) discharge temperature sensor, M21528.

These are the tasks:

Pack Discharge Temperature Sensor Removal, AMM TASK 21-52-45-000-801,

Pack Discharge Temperature Sensor Installation, AMM TASK 21-52-45-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

D. Fault Isolation Procedure ACM Not Serviceable

- (1) Do this torque check of the Air Cycle Machine (ACM):
 - (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door
 - (b) Remove cooling pack outlet duct.



DO NOT TURN THE ACM IMPELLER IN THE OPPOSITE DIRECTION SHOWN BY THE ARROW. DAMAGE TO THE ACM CAN OCCUR.

- (c) Turn the impeller shaft in the direction of the arrow with less than 50 inch-lbs of torque.
NOTE: You can find the arrow at the turbine end of the ACM placard.
- (d) If the impeller shaft requires less than 50 inch-lbs to start to turn, then do these steps:
 - 1) Install the pack outlet duct.
 - 2) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
195EL	Environmental Control Systems (ECS) Access Door
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the impeller shaft requires more than 50 inch-lbs to start to turn, then do these steps:
 - 1) Replace the ACM.

These are the tasks:

Air Cycle Machine (ACM) Removal, AMM TASK 21-52-02-000-801,

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Air Cycle Machine (ACM) Installation, AMM TASK 21-52-02-400-801.

- 2) Install the pack outlet duct.
- 3) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door
- 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

— END OF TASK —

843. Right Pack Compressor Discharge Temperature Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23492.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do these steps to examine the dual heat exchanger for blockage:
 - (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door
 - (b) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
196JR	Heat Exchanger Door
 - (c) Remove the access panel on the ram air duct.
 - (d) If there is blockage, then do these steps:
 - 1) Remove the blockage.
 - 2) Install the access panel.
 - 3) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
196ER	Environmental Control Systems (ECS) Access Door

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- 4) Close this access panel:
- | <u>Number</u> | <u>Name/Location</u> |
|---------------|----------------------|
| 196JR | Heat Exchanger Door |
- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
- 6) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If there is no blockage, then continue.
- (f) Install the access panel.
- (g) Close this access panel:
- | <u>Number</u> | <u>Name/Location</u> |
|---------------|---|
| 196ER | Environmental Control Systems (ECS) Access Door |
- (h) Close this access panel:
- | <u>Number</u> | <u>Name/Location</u> |
|---------------|----------------------|
| 196JR | Heat Exchanger Door |
- (2) Do these steps to examine the mechanical linkage for the ram air inlet door and actuator and the ram air exhaust louvers and actuator for damage:
- (a) Open these access panels:
- | <u>Number</u> | <u>Name/Location</u> |
|---------------|-----------------------------|
| 192LR | Ram Air Inlet Actuator Door |
| 196QR | Blowout Door |
- and the .
- (b) If the mechanical linkage is loose or damaged, then do these steps:
- 1) Tighten, replace or repair the mechanical linkage.
 - 2) Close these access panels:
- | <u>Number</u> | <u>Name/Location</u> |
|---------------|-----------------------------|
| 192LR | Ram Air Inlet Actuator Door |
| 196QR | Blowout Door |
- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the mechanical linkage for the ram air inlet door and actuator and the ram air exhaust louvers and actuator is not loose or damaged, then continue.
- (d) Close these access panels:
- | <u>Number</u> | <u>Name/Location</u> |
|---------------|-----------------------------|
| 192LR | Ram Air Inlet Actuator Door |
| 196QR | Blowout Door |
- (3) Do these steps to do a check of the economy cooling bypass check valve:

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- (a) Remove the economy cooling bypass check valve. To remove it, do this task: Economy Cooling Bypass Check Valve Removal, AMM TASK 21-52-11-000-801.
 - (b) If the economy cooling bypass check valve is not serviceable, then do these steps:
 - 1) Install a new economy cooling bypass check valve. To install it, do this task: Economy Cooling Bypass Check Valve Installation, AMM TASK 21-52-11-400-801.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the economy cooling bypass check valve is serviceable, then continue.
 - (d) Re-install the economy cooling bypass check valve. To install it, do this task: Economy Cooling Bypass Check Valve Installation, AMM TASK 21-52-11-400-801.
- (4) Replace the CTC compressor discharge temperature sensor-1 for the right pack, M21520.
- These are the tasks:
- Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,
Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the CTC compressor discharge temperature sensor-2 for the right pack, M21522.
- These are the tasks:
- Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,
Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the ASCPC compressor discharge temperature sensor for the right pack, M21206.
- These are the tasks:
- Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,
Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (b) If the maintenance message shows on the ground test display, then continue.
- (7) Replace the right cabin temperature controller (CTC-R), M21632.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (8) Replace the right pack flow sensor, M21521.
- These are the tasks:
- Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

845. Pack Control Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23090.

B. Initial Evaluation

NOTE: This maintenance message occurs when a ground test is performed and the cabin temperature controller (CTC) does not return to the original channel in control.

- (1) If you did a ground test for the left CTC,
Make sure that these circuit breakers are closed:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	2	C21431	L CTC CHAN 1 (AC)
H	3	C21433	L CTC CHAN 2 (AC)
H	24	C21647	L CTC CHAN 2 (DC)
H	25	C21641	L CTC CHAN 1 (DC)

- (2) If you did a ground test for the right CTC,
Make sure that these circuit breakers are closed:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21434	R CTC CHAN 2 (AC)
G	28	C21432	R CTC CHAN 1 (AC)
H	2	C21642	R CTC CHAN 1 (DC)
H	3	C21648	R CTC CHAN 2 (DC)

- (3) Do these steps to make sure the Air/Ground status is weight on wheels:
- (a) Show the maintenance page for 31 Landing Gear Actuation/Indication, do this task:
Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (b) Make sure the AIR/GND status on the lower right hand side of the maintenance page shows GND for the main landing gear (L and R MLG).

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- (4) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.
 - (a) Do the ground test on the MAT which you performed when the fault occurred.
 - (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (c) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) If other maintenance messages show on the ground test display, then do these steps:
 - (a) Find each maintenance message in the applicable Maintenance Message Index.
 - (b) Do the specified fault isolation task for each maintenance message.
 - (c) Do the ground test on the MAT which you performed when the fault occurred.
 - (d) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (e) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the cabin temperature controller (CTC):
 - (a) If you did a ground test for the left cooling pack, then do these steps.
 - 1) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	2	C21431	L CTC CHAN 1 (AC)
H	3	C21433	L CTC CHAN 2 (AC)
H	24	C21647	L CTC CHAN 2 (DC)
H	25	C21641	L CTC CHAN 1 (DC)

- 2) Remove the safety tags and close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	24	C21647	L CTC CHAN 2 (DC)
H	25	C21641	L CTC CHAN 1 (DC)

NOTE: You must close the DC circuit breakers before you close the AC circuit breakers.

- 3) Remove the safety tags and close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	2	C21431	L CTC CHAN 1 (AC)
H	3	C21433	L CTC CHAN 2 (AC)

- (b) If you did a ground test for the right cooling pack, then do these steps:



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- 1) Open these circuit breakers and install safety tags:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21434	R CTC CHAN 2 (AC)
G	28	C21432	R CTC CHAN 1 (AC)
H	2	C21642	R CTC CHAN 1 (DC)
H	3	C21648	R CTC CHAN 2 (DC)

- 2) Remove the safety tags and close these circuit breakers:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	2	C21642	R CTC CHAN 1 (DC)
H	3	C21648	R CTC CHAN 2 (DC)

NOTE: You must close the DC circuit breakers before you close the AC circuit breakers.

- 3) Remove the safety tags and close these circuit breakers:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21434	R CTC CHAN 2 (AC)
G	28	C21432	R CTC CHAN 1 (AC)

- (c) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) Cabin Temperature Controller.
 - 1) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the applicable left or right cabin temperature controller (CTC) M21631 (M21632).

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Do the same ground test on the MAT that you did when the fault occurred.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

846. Ground Test Problems - Fault Isolation

A. Initial Evaluation

NOTE: This fault occurs when there is a problem with the cooling pack operation and as a result you cannot do cabin temperature controller (CTC) related ground tests.

- (1) Push the AIR COND RESET switch, on the Air Conditioning Module, in the pilot's overhead panel, P5.

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- (2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left (Right) System Air On.

NOTE: Do the Left System Air On test if the left cooling pack has problems. Do the Right System Air On test if the right cooling pack has problems

- (a) If you cannot do the ground test or if the ground test FAILED, then do the Fault Isolation Procedure below.
- (b) If you can do the ground test and the ground test display shows PASSED, then there was an intermittent fault.

B. Fault Isolation Procedure

- (1) If maintenance messages show on the ground test display, then do these steps:
- (a) Find each maintenance message in the applicable Maintenance Message Index.
- (b) Do the specified fault isolation task for each maintenance message.
- (c) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left (Right) System Air On.
- NOTE:** Do the Left System Air On test if the left cooling pack has problems. Do the Right System Air On test if the right cooling pack has problems.
- (d) If the ground test display shows PASSED, then you corrected the fault.
- (2) If you cannot do the ground test, then do these steps:
- (a) Look at the Line Maintenance, Inbound Flight Deck Effects display on the MAT for flight deck effects and the correlated maintenance messages related to the cooling packs.
- 1) Find each maintenance message in the applicable Maintenance Message Index.
- 2) Do the specified fault isolation task for each maintenance message.
- 3) If the initial evaluation steps in the fault isolation task requires you to do a ground test and you cannot do it, then do these steps:
- a) Go directly to the Fault Isolation Procedure and do the corrective action.
- b) Do the applicable steps in the fault isolation procedure.
- 4) Do the same ground test on the MAT that you did when the fault occurred.
- 5) If you can do the ground test, then you corrected the fault.
- 6) If you cannot do the ground test, then continue.
- (3) Replace the applicable left or right cabin temperature controller (CTC) M21631 (M21632). These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) Do the same ground test on the MAT that you did when the fault occurred.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

849. Economy Cooling Valve Ground Test Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23050.

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B. General

- (1) This maintenance message shows when you do a SYSTEM TEST AIR ON on the MAT and the economy cooling valve for the left or right pack is open.
- (2) The economy cooling valve does not have a position feedback sensor. The temperature at the secondary heat exchanger outlet is compared to the temperature at the water condenser inlet to find the valve position. If the temperature difference is less than six degrees, then the valve indication is OPEN. If the temperature difference is greater than five degrees, then the valve indication is CLOSED.
- (3) The SYSTEM TEST AIR ON commands the economy cooling valve to open and close. If the valve is open before the system test is started, then the economy cooling valve is not tested and this maintenance message shows.
- (4) There is only one maintenance message for the two packs. Make a note of which pack is performing the ground test when the message shows.

C. Initial Evaluation

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (a) Look for a maintenance message related to the:
 - 1) Economy cooling valve
 - 2) Secondary heat exchanger outlet temperature sensor
 - 3) Condenser inlet temperature sensor.
 - (b) Do these steps for each maintenance message that you find:
 - 1) Find the message in the FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) System Air On.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
 - (c) If you do not find any related maintenance messages, then continue.
- (2) Replace the left (right) economy cooling valve.

These are the tasks:

Economy Cooling Valve Removal, AMM TASK 21-52-31-000-801,
Economy Cooling Valve Installation, AMM TASK 21-52-31-400-801.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) System Air On.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (3) If the maintenance message shows during the left pack ground test, then do this check of the wiring:
 - (a) Disconnect connector DV21532 from the economy cooling valve for the left pack, V21532.
 - (b) Disconnect connector D11031P from the P110 panel.
 - (c) Do a wiring check between these pins of connector D11031P at the P110 panel and connector DV21532 at the economy cooling valve, V21532 (WDM 21-52-31):

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D11031P

DV21532

pin 1 pin 1

- (d) Do a wiring check between pin 2 of connector DV21532 at the economy cooling valve, V21532, and structure ground (WDM 21-52-31):
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors D11031P and DV21532.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (4) If the maintenance message shows during the right pack ground test, then do this check of the wiring:
 - (a) Disconnect connector DV21542 from the economy cooling valve for the right pack, V21542.
 - (b) Disconnect connector D21031P from the P210 panel.
 - (c) Do a wiring check between these pins of connector D21031P at the P210 panel and connector DV21542 at the economy cooling valve, V21542 (WDM 21-52-32):

D21031P

DV21542

pin 2 pin 1

- (d) Do a wiring check between pin 2 of connector DV21542 at the economy cooling valve, V21542, and structure ground (WDM 21-52-31):
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors D21031P and DV21542.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 4) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (5) Replace the left (right) cabin temperature controller.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left (Right) System Air On.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (6) Replace the left (right) secondary heat exchanger outlet temperature sensor.
These are the tasks:
Secondary Heat Exchanger Outlet Temperature Sensor Removal, AMM TASK 21-52-42-000-801,

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Secondary Heat Exchanger Outlet Temperature Sensor Installation, AMM
TASK 21-52-42-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left (Right) System Air On.
 - (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (7) Replace the left (right) condenser inlet temperature sensor.

These are the tasks:

Condenser Inlet Temperature Sensor Removal, AMM TASK 21-52-43-000-801,

Condenser Inlet Temperature Sensor Installation, AMM TASK 21-52-43-400-801.

- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left (Right) System Air On.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— END OF TASK —————

850. Compressor Outlet Temperature Sensor Miscompare - Fault Isolation(Figure 201)

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-23441, 21-23442.

B. General

- (1) This message shows if the compressor outlet temperature indication from the cabin temperature controller (CTC) does not agree with the compressor outlet temperature indication from the air supply cabin pressure controller (ASCPC).

————— END OF TASK —————

EFFECTIVITY
ARO ALL

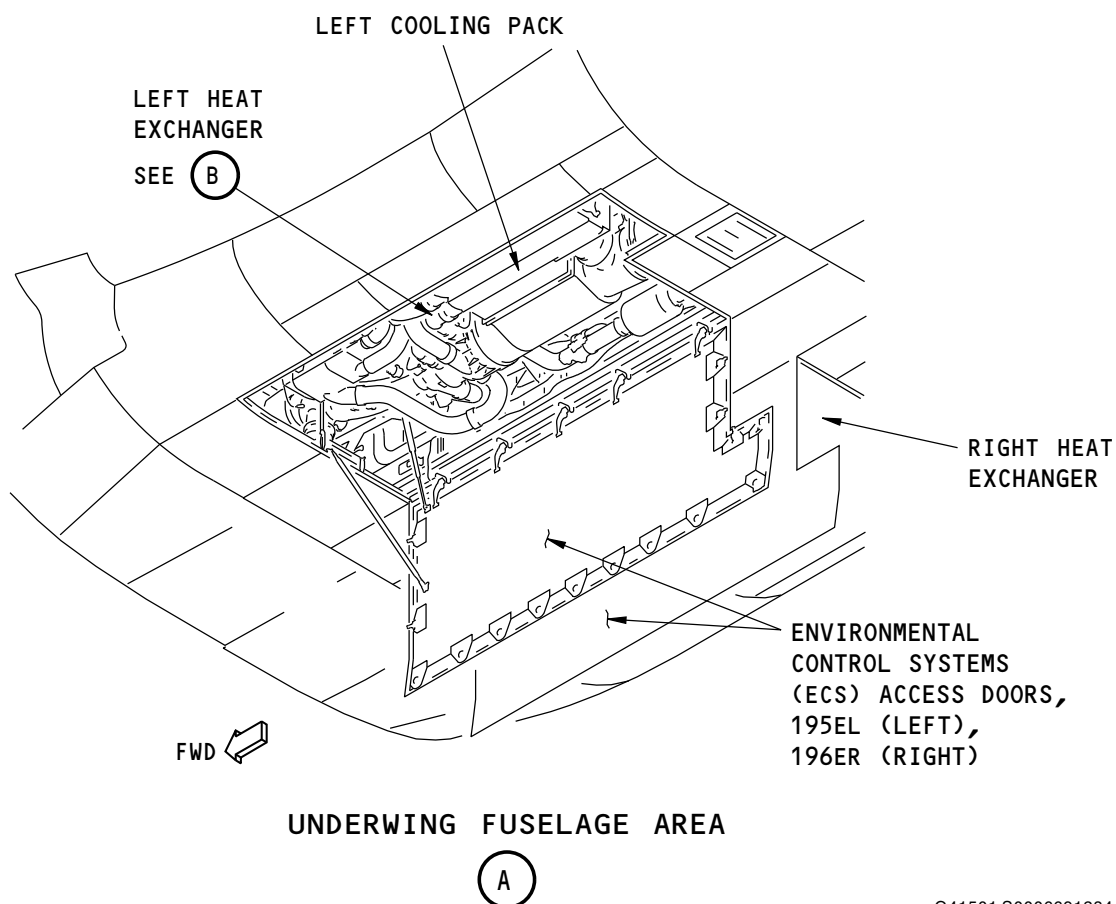
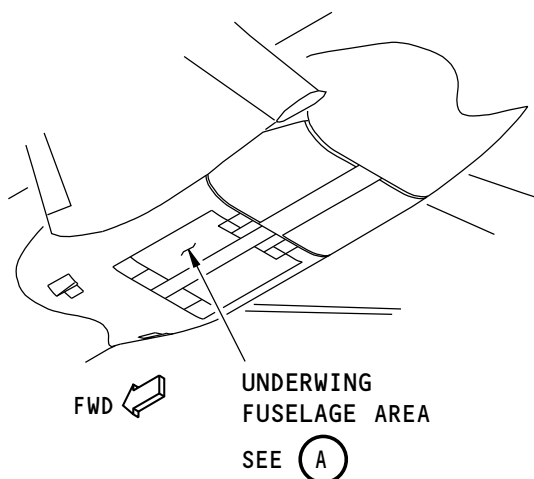
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G41501 S0006691284_V2

Compressor Outlet Temperature Sensor Miscompare
Figure 201/21-52-00-990-801 (Sheet 1 of 2)

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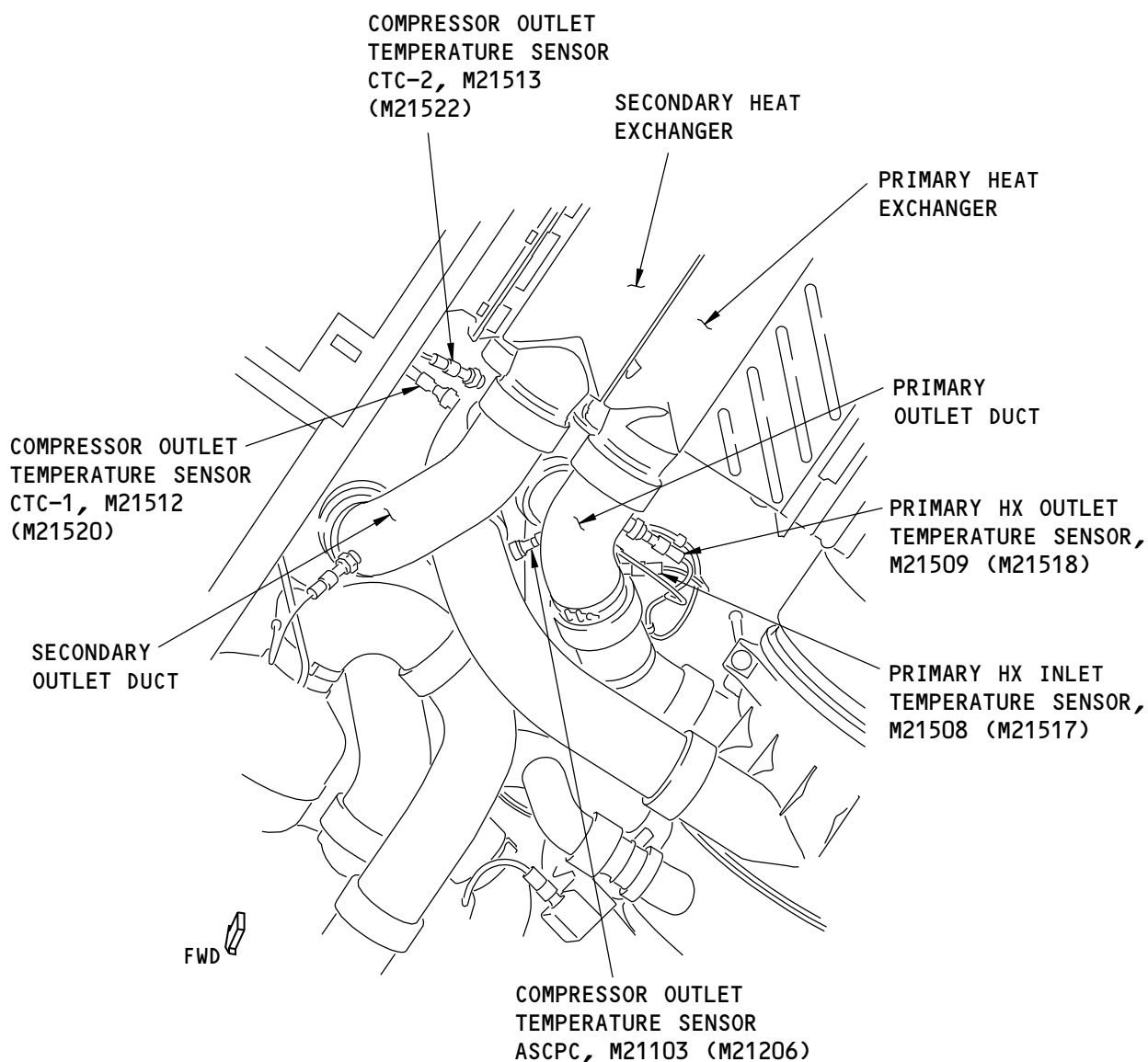
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LEFT HEAT EXCHANGER
(RIGHT HEAT EXCHANGER IS OPPOSITE)

B

G41525 S0006691285_V2

Compressor Outlet Temperature Sensor Miscompare
Figure 201/21-52-00-990-801 (Sheet 2 of 2)

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C. Initial Evaluation

- (1) Make these selections on the MAT:
 - (a) ONBOARD MAINTENANCE
 - (b) EXTENDED MAINTENANCE
 - (c) EXISTING FAULTS
 - (d) 21 Cabin Temperature Control System
- (2) Look at the fault display on the MAT for a maintenance message related to the:
 - (a) Left (Right) Pack Compressor Outlet Temperature Sensor (CTC)
 - (b) Left (Right) Pack Compressor Outlet Temperature Sensor (ASCPC)
 - (c) Left (Right) CTC
 - (d) Left (Right) ASCPC.
- (3) If you find one or more related maintenance messages, then do these steps for each message that you find:
 - (a) Find the message in the FIM Maintenance Message Index.
 - (b) Do the specified task for the message.
 - (c) If the MAT shows NOT ACTIVE for the sensor miscompare message (or if the message does not show), then you corrected the fault.
 - (d) If the MAT shows ACTIVE for the sensor miscompare message and no related maintenance message shows, then do the Fault Isolation Procedure below.
- (4) If you do not find a related maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 overhead panel.
 - (b) If the MAT shows ACTIVE for the sensor miscompare message, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the sensor miscompare message (or if the message does not show), then there was an intermittent fault.

D. Fault Isolation Procedure

- (1) Do these steps to do a check for incorrectly installed connectors:
 - (a) Examine the left (right) primary heat exchanger outlet temperature sensor, M21509 (M21518):
 - 1) Look at the connector label.
 - 2) If the connector label does not agree with the equipment number of the sensor, then disconnect the connector from the sensor.
 - (b) Examine the left (right) primary heat exchanger inlet temperature sensor, M21508 (M21517):
 - 1) Look at the connector label.
 - 2) If the connector label does not agree with the equipment number of the sensor, then disconnect the connector from the sensor.
 - (c) Examine the left (right) compressor outlet temperature sensor ASCPC, M21103 (M21206):
 - 1) Look at the connector label.
 - 2) If the connector label does not agree with the equipment number of the sensor, then disconnect the connector from the sensor.

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- (2) If you found incorrectly installed connectors, then do these steps:
 - (a) Reconnect the connectors to the applicable sensors.
 - (b) Make sure that each connector label agrees with the equipment number of its sensor.
 - (c) Push the AIR COND RESET switch on the P5 overhead panel.
 - (d) Look at the fault display on the MAT.
 - (e) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (f) If the MAT shows ACTIVE for the maintenance message then continue.
- (3) Replace the left (right) ASCPC compressor outlet temperature sensor, M21103 (M21206).

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,
Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.

 - (a) Push the AIR COND RESET switch on the P5 overhead panel.
 - (b) Look at the fault display on the MAT.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (d) If the MAT shows ACTIVE for the maintenance message then continue.
- (4) Replace the left (right) pack compressor outlet temperature sensor CTC-1, M21512 (M21520).

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,
Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.

 - (a) Push the AIR COND RESET switch on the P5 overhead panel.
 - (b) Look at the fault display on the MAT.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (d) If the MAT shows ACTIVE for the maintenance message then continue.
- (5) Replace the left (right) pack compressor outlet temperature sensor CTC-2, M21513 (M21522).

These are the tasks:

Compressor Discharge Temperature Sensor Removal, AMM TASK 21-52-41-000-801,
Compressor Discharge Temperature Sensor Installation, AMM TASK 21-52-41-400-801.

 - (a) Push the AIR COND RESET switch on the P5 overhead panel.
 - (b) Look at the fault display on the MAT.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (d) If the MAT shows ACTIVE for the maintenance message then continue.
- (6) Replace the left (right) ASCPC, M36111 (M36112).

These are the tasks:

ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.

 - (a) Look at the fault display on the MAT.



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- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message then continue.
- (7) Replace the left (right) CTC, M21631 (M21632).

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Look at the fault display on the MAT.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

855. Relay (L ECONO COOLING VLV CNTL) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-50009.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.

- (a) During the ground test do this visual check:

NOTE: The economy cooling valve test occurs approximately halfway during the ground test.

- 1) Look at the position indicator on the valve.
- 2) Make sure the valve lever moves from full closed to full open and then returns to the full closed position.

NOTE: It will take approximately 45 seconds for the valve to move from full closed to full open and then return to the full closed position.

- (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (c) If the maintenance message does not show on the ground test display and the economy cooling valve does not operate correctly during the visual check, then do the Fault Isolation Procedure below.
- (d) If the maintenance message does not show on the ground test display and the economy cooling valve opens and closes during the ground test, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for power to the left economy cooling valve relay:
 - (a) Remove the left economy cooling valve relay, K21009 (WDM 21-52-31).
 - (b) Do a check for 28V DC between pins A2 and X1 of the relay connector DK21009 and the structure ground. (WDM 21-52-31)
 - (c) If you do find 28V DC between pins A2 and X1 of the relay connector DK21009 and the structure ground, then do the steps that follow:
 - 1) Replace the left economy cooling valve relay, K21009 (WDM 21-52-31).

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- 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 3) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - 4) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
- (d) If you do not find 28V DC between pins A2 and X1 of the connector DK21009 and the structure ground, then do the steps that follow:
- 1) Repair the wiring between pins A2 and X1 of the connector DK21009 and the circuit breaker: (WDM 21-51-11)
 - a) Repair the wiring between pins A2 and X1 of the connector DK21009 and this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	23	C21645	L ECV FCV POS SNSR

- 2) Re-install the left economy cooling valve relay, K21009 (WDM 21-52-31).
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 4) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - 5) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
- (2) Do a check of the wiring between the Signal Interface Unit (1), M24504 and the relay, K21009:
- (a) Remove the left economy cooling valve relay, K21009 (WDM 21-52-31).
 - (b) Disconnect the electrical connectors DM24504A and DM24504B from the SIU, M24504. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (c) Do a check of the wiring between pin 6 of connector DM24504A and pin A1 of connector DK21009. (WDM 21-52-31)
 - (d) Do a check of the wiring between pin 2 of connector DM24504B and pin X2 of connector DK21009. (WDM 21-52-31)
 - (e) If you do not find a problem with the wiring, then do the steps that follow:
 - 1) Re-install the left economy cooling valve relay, K21009 (WDM 21-52-31).
 - 2) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.

This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 4) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.

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- 5) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
- (f) If you do find a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DM24504A and DM24504B to the SIU, M24504. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the left economy cooling valve relay, K21009 (WDM 21-52-31).
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 5) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - 6) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.

———— END OF TASK ————

856. Relay (R ECONO COOLING VLV CNTL) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-50016.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (a) During the ground test do this visual check:

NOTE: The economy cooling valve test occurs approximately halfway during the ground test.

- 1) Look at the position indicator on the valve.
- 2) Make sure the valve lever moves from full closed to full open and then returns to the full closed position.

NOTE: It will take approximately 45 seconds for the valve to move from full closed to full open and then return to the full closed position.

- (b) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (c) If the maintenance message does not show on the ground test display and the economy cooling valve does not operate correctly during the visual check, then do the Fault Isolation Procedure below.
- (d) If the maintenance message does not show on the ground test display and the economy cooling valve opens and closes during the ground test, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for power to the right economy cooling valve relay:
 - (a) Remove the right economy cooling valve relay, K21008 (WDM 21-52-32).
 - (b) Do a check for 28V DC between pins A2 and X1 of the relay connector DK21008 and the structure ground. (WDM 21-52-32)

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- (c) If you do find 28V DC between pins A2 and X1 of the relay connector DK21008 and the structure ground, then do the steps that follow:
- 1) Replace the right economy cooling valve relay, K21008 (WDM 21-52-32).
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 3) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - 4) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
- (d) If you do not find 28V DC between pins A2 and X1 of the connector DK21008 and the structure ground, then do the steps that follow:
- 1) Repair the wiring between pins A2 and X1 of the connector DK21008 and the circuit breaker: (WDM 21-51-12)
 - a) Repair the wiring between pins A2 and X1 of the connector DK21008 and this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	4	C21646	R ECV/FCV POS SNSR

- 2) Re-install the right economy cooling valve relay, K21008 (WDM 21-52-32).
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 4) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - 5) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display or if the visual check was not satisfactory, then continue.
- (2) Do a check of the wiring between the Signal Interface Unit (1), M24508 and the relay, K21008:
- (a) Remove the right economy cooling valve relay, K21008 (WDM 21-52-32).
 - (b) Disconnect the electrical connectors DM24508A and DM24508B from the SIU, M24508. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (c) Do a check of the wiring between pin 6 of connector DM24508A and pin A1 of connector DK21008. (WDM 21-52-32)
 - (d) Do a check of the wiring between pin 1 of connector DM24508B and pin X2 of connector DK21008. (WDM 21-52-32)
 - (e) If you do not find a problem with the wiring, then do the steps that follow:
 - 1) Re-install the right economy cooling valve relay, K21008 (WDM 21-52-32).
 - 2) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.

This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

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- 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 4) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - 5) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.
- (f) If you do find a problem with the wiring, then do the steps that follow:
- 1) Repair the wiring.
 - 2) Re-connect connectors DM24508A and DM24508B to the SIU, M24508. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the right economy cooling valve relay, K21008 (WDM 21-52-32).
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 5) Do the steps in the initial evaluation to visually check the economy cooling valve during the ground test.
 - 6) If the maintenance message does not show on the ground test display and the visual check was satisfactory, you corrected the fault.

———— **END OF TASK** ————

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801. CTC-L to Systems 629 Bus-L Communication Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-28841, 21-29401.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631. To replace the cabin temperature controller,

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the ARINC 629 coupler, B21631, in the P111 panel. To replace the ARINC 629 coupler,

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the CTC-L to its coupler:
 - (a) Remove the CTC-L, M21631. To remove the left CTC, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21631 from the coupler, B21631.
 - (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD

pin 1T	.....	pin 5
pin 1TR	.....	pin 4
pin 2T	.....	pin 2
pin 2TR	.....	pin 1

DB21631

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.

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- 3) Re-install the CTC-L, M21631. To install it, do this task: ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

802. CTC-L Chan 1 No Input from AIMS-L on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29405.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the IOM(M009) module in the left AIMS cabinet.

These are the tasks:

Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,

Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

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ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the left AIMS cabinet to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21631 from the coupler, B21631.
 - (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD	DB21631
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21631.
- (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the left AIMS cabinet to its coupler:
 - (a) Remove the IOM(M009) module from the left AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (b) Disconnect connector DB31112 from the coupler, B31112.
 - (c) Do a wiring check between these pins of connector J420B at the left AIMS cabinet and connector DB31112 at the P111 panel (WDM 31-41-25):

J420B	DB31112
pin G3	pin 5
pin G4	pin 4
pin G1	pin 2
pin G2	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB31112.

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- 3) Re-install the IOM(M009) module. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

———— **END OF TASK** ————

803. CTC-L Chan 1 No Input from ASG-L (LSCF) on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29437.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left ARINC signal gateway (ASG) card, A12, in the left systems cardfile (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

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ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the LSCF to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21631 from the coupler, B21631.
 - (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD	DB21631
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the wiring from the left ASG card to its coupler:
 - (a) Remove the left ASG card, A12, from the LSCF, P85. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Disconnect connector DB31101 from the coupler, B31101.
 - (c) Do a wiring check between these pins of connector DP8504 at the LSCF, P85, and connector DB31101 in the P111 panel (WDM 31-09-12):

DP8504	DB31101
pin 5	pin 5
pin 4	pin 4
pin 2	pin 2
pin 1	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB31101.
 - 3) Re-install the left ASG card, A12, in the LSCF, P85. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

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- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

804. Zone Trim Mod Valve (Flight Deck) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-20001.

B. Initial Evaluation

- (1) If the flight deck target temperature indication on the air synoptic page is blank, then do the Fault Isolation Procedure below.

NOTE: A blank target temperature indication on the Air Synoptic display can be caused by a failure of the Trim Air Modulation valve. The CTC does not provide target temperature information to the Air Synoptic display if the Trim Air Modulation valve fails to operate.

- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Set the FLT DECK TEMP selector to the MAN C position.
- (2) Make sure the F/D TRIM VLV indication on the EICAS ECS Maintenance Page moves to approximately 0.00.
- (3) Set the FLT DECK TEMP selector to the MAN W position.
- (4) Make sure the F/D TRIM VLV indication on the EICAS ECS Maintenance Page moves to approximately 1.00.
- (5) If the F/D TRIM VLV indication on the EICAS ECS Maintenance Page does not show approximately 0.00 in MAN C and 1.00 in MAN W, then do these steps:
 - (a) Replace the zone trim air modulating valve for the flight deck, V21611.
These are the tasks:
Zone Trim Air Modulating Valves Removal, AMM TASK 21-61-02-000-801,
Zone Trim Air Modulating Valves Installation, AMM TASK 21-61-02-400-801.
 - (b) Put the FLT DECK TEMP selector in the AUTO position.
 - (c) Push the AIR COND RESET switch on the P5 panel.
 - (d) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.

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- (e) Replace the left cabin temperature controller (CTC), M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (f) Push the AIR COND RESET switch on the P5 panel.
- (g) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If maintenance message shows on the ground test display, then continue.
- (h) Remove the AUTO/MAN CONT FLT DK TRIM relay, K21611, from Left Power Management Panel, P110.
- (i) Disconnect connector DV21611 from the flight deck trim air modulating valve, V21611 (WDM 21-61-17).
- (j) Do a wiring check between these pins of connector DK21611 on the P110 panel and connector DV21611 at the flight deck trim air modulating valve, V21611 (WDM 21-61-17):

K21611	DV21611
pin A2	pin 2
pin B2	pin 3
pin C2	pin 1

- (k) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DV21611 to the valve.
 - 3) Re-install the relay, K21611.
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
- (l) If you do not find a problem with the wiring, then continue.
- (m) Remove the left CTC, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (n) Disconnect connector DV21611 from the flight deck trim air modulating valve, V21611 (WDM 21-61-17).
- (o) Do a wiring check between these pins of connectors DM21631AB and DM21631AE at the E1-2 shelf and connector DV21611 at the flight deck trim air modulating valve, V21611 (WDM 21-61-17):

DM21631AB	DV21611
pin F5	pin 4
pin F4	pin 6
pin F7	pin 8
pin F6	pin 10

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DM21631AE

pin E5		pin 4
pin E4		pin 6
pin E7		pin 8
pin E6		pin 10

DV21611

- (p) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DV21611 to the valve.
 - 3) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 7) If you do not find a problem with the wiring, then continue.
 - 8) Replace the new AUTO/MAN CONT FLT DK TRIM relay, K21611, in the Left Power Management Panel, P110.
 - 9) Push the AIR COND RESET switch on the P5 panel.
 - 10) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 11) If the maintenance message does not show on the ground test display, you corrected the fault.
- (6) If the F/D TRIM VLV indication on the EICAS ECS Maintenance Page shows approximately 0.00 in MAN C and 1.00 in MAN W, then do these steps:
- (a) Replace the left CTC, M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) Push the AIR COND RESET switch on the P5 panel.
 - (c) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If maintenance message shows on the ground test display, then continue.
 - (d) Put the FLT DECK TEMP selector in the AUTO position.
 - (e) Remove the AUTO/MAN CONT FLT DK TRIM relay, K21611, from Left Power Management Panel, P110 (WDM 21-61-17).
 - (f) Remove the left cabin temperature controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- (g) Do a wiring check between these pins of connectors DM21631AB and DM21631AE at the E1-2 shelf and connector DK21611 on the Left Power Management Panel, P110 (WDM 21-61-17):

DM21631AB	DK21611
pin F13	pin C3
pin E13	pin B3
pin D13	pin A3

DM21631AE	DM21611
pin E13	pin C3
pin F13	pin B3
pin G13	pin A3

- (h) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the relay, K21611.
 - 3) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
- (i) If you do not find a problem with the wiring, then do these steps:
- 1) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 2) Replace the AUTO/MAN CONT FLT DK TRIM relay, K21611.
 - 3) Push the AIR COND RESET switch on the P5 panel.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

805. Flight Deck Temperature Control Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43250.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
- (a) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.

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- (b) If the MAT shows ACTIVE for the maintenance message while the selector is in one or more of the positions specified above, then do the Fault Isolation Procedure below.
- (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in all the positions specified above, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the flight deck temperature selector, M21314S3.

These are the tasks:

Zone Temperature Selector Removal, AMM TASK 21-61-05-000-801,

Zone Temperature Selector Installation, AMM TASK 21-61-05-400-801.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message while the selector is in one or more of the positions specified above, then continue.
- (2) Do this check of the wiring from the flight deck temperature selector to the left overhead panel cardfile (OPCF-L):
 - (a) Remove the air conditioning module, M21314, from the P5 panel, but do not disconnect its electrical connectors (WDM 21-61-17).
 - (b) Disconnect connector M21314DS3 from the flight deck temperature selector.
 - (c) Disconnect connector DM23117L from the OPCF-L, M23117.
 - (d) Do a wiring check between these pins of connector M21314DS3 at the pilot's overhead panel, P5, and connector DM23117L at the maintenance panel, P61 (WDM 21-61-17):

M21314DS3	DM23117L
pin F	pin A8
pin E	pin A9
pin D	pin A10
pin C	pin A11
pin B	pin A12
pin G	pin A13
pin H	pin A19
pin J	pin A14
pin K	pin A15
pin L	pin A16
pin M	pin A17
pin N	pin A18

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M21314DS3 and DM23117L.
 - 3) Re-install the air conditioning module, M21314.
 - 4) Monitor the maintenance message on the MAT while you do these steps:

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- a) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
 - (g) Re-connect connector M21314DS3 to the flight deck temperature selector, M21314S3.
 - (h) Re-install the air conditioning module, M21314.
 - (3) Replace the OPCF-L chassis, M23117, P61.
- These are the tasks:
- Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.

————— **END OF TASK** —————

806. Cabin Temperature Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43700.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the CABIN TEMP selector first to C, then to W.
 - (b) If the MAT shows ACTIVE for the maintenance message while the selector is in the C or W position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in the C and W positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the cabin temperature selector, M21314S6.

These are the tasks:

Zone Temperature Selector Removal, AMM TASK 21-61-05-000-801,

Zone Temperature Selector Installation, AMM TASK 21-61-05-400-801.

- (a) Monitor the maintenance message on the MAT while you do these steps:

- 1) Set the CABIN TEMP selector first to C, then to W.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the C and W positions, you corrected the fault.

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- (c) If the MAT shows ACTIVE for the maintenance message while the selector is in the C or W position, then continue.
- (2) Do this check of the wiring from the cabin temperature selector to the right overhead panel cardfile (OPCF-R):
 - (a) Remove the air conditioning module, M21314, from the P5 panel, but do not disconnect its electrical connectors (WDM 21-61-12).
 - (b) Disconnect connector M21314DS6 from the cabin temperature selector.
 - (c) Disconnect connector DM23217L from the OPCF-R M23217.
 - (d) Do a wiring check between these pins of connector M21314DS6 at the pilot's overhead panel, P5, and connector DM23217L at the maintenance panel, P61 (WDM 21-61-12):

M21314DS6	DM23217L
pin F	pin A8
pin E	pin A9
pin D	pin A10
pin C	pin A11
pin B	pin A12
pin G	pin A13
pin H	pin A19
pin J	pin A14
pin K	pin A15
pin L	pin A16
pin M	pin A17
pin N	pin A18

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M21314DS6 and DM23217L.
 - 3) Re-install the air conditioning module, M21314.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the CABIN TEMP selector first to C, then to W.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the C and W positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M21314DS6 to the cabin temperature selector, M21314S6.
- (h) Re-install the air conditioning module, M21314.
- (3) Replace the OPCF-R chassis, M23217.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the CABIN TEMP selector first to C, then to W.

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- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the C and W positions, you corrected the fault.

————— END OF TASK —————

810. Left Cabin Temperature Controller (CTC) Software Configuration Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-25031.

B. Fault Isolation Procedure

- (1) Do a check of the system configuration for this system on the MAT: 21 Cabin Temperature Control System.
- (a) Find Cabin Temperature Controller (L, Chan 1) in Left AIMS on the display and make sure that the software part numbers are correct.
- (b) If a part number is incorrect, install software in channel 1 of the left cabin temperature controller (CTC). To install the software, do this task: Cabin Temperature Controller (CTC) Software Installation, AMM TASK 21-61-01-400-803.
- (c) Find Cabin Temperature Controller (L, Chan 2) in Left AIMS on the display and make sure that the software part numbers are correct.
- (d) If a part number is incorrect, install software in channel 2 of the left cabin temperature controller (CTC). To install the software, do this task: Cabin Temperature Controller (CTC) Software Installation, AMM TASK 21-61-01-400-803.
- (e) Push the AIR COND RESET switch on the P5 panel.
- (f) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

811. CTC-L1 No Input from APUC on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29421.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the APU controller (APUC), M49002.

These are the tasks:

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APU Controller (APUC) Removal, AMM TASK 49-61-05-000-801,

APU Controller (APUC) Installation, AMM TASK 49-61-05-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B49101, in the P115 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the APUC to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21631 from the coupler, B21631.
 - (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD	DB21631
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21631.

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- (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the APUC to its coupler:
 - (a) Remove the APUC, M49002, from the E7 shelf. To remove it, do this task: APU Controller (APUC) Removal, AMM TASK 49-61-05-000-801.
 - (b) Disconnect connector DB49101 from the coupler, B49101.
 - (c) Do a wiring check between these pins of connector DM49002AC at the E7 shelf and connector DB49101 in the P115 panel (WDM 49-61-11):

DM49002AC	DB49101
pin 2T	pin 5
pin 2TR	pin 4
pin 5T	pin 2
pin 5TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB49101.
 - 3) Re-install the APUC, M49002. To install it, do this task: APU Controller (APUC) Installation, AMM TASK 49-61-05-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

812. CTC-L1 No Input from ASCPC on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29429.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the air supply cabin pressure controller (ASCPC), M36111.

These are the tasks:

ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B36233, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the ASCPC to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21631 from the coupler, B21631.
 - (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD	DB21631
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21631.
- (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- (6) Do this check of the wiring from the ASCPC to its coupler:
- (a) Remove the ASCPC, M36111, from the E1-2 shelf. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (b) Disconnect connector DB36233 from the coupler, B36233.
 - (c) Do a wiring check between these pins of connector DM36111AA at the E1-2 shelf and connector DB36233 in the P111 panel (WDM 36-21-11).

DM36111AA	DB36233
pin 2T	pin 5
pin 2TR	pin 4
pin 1T	pin 2
pin 1TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB36233.
 - 3) Re-install the ASCPC, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

813. CTC-L1 No Input from CTC-R on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29449.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right cabin temperature controller (CTC-R), M21632.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B21633, in the P111 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE: This coupler connects the CTC-R to the Systems 629 Bus-L.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DB21631 from the coupler, B21631.
- (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):
- | DM21631AD | DB21631 |
|-------------------|----------------|
| pin 1T | pin 5 |
| pin 1TR | pin 4 |
| pin 2T | pin 2 |
| pin 2TR | pin 1 |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21631.
- (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the CTC-R to its coupler:

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- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DB21633 from the coupler, B21633.
- (c) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DB21633 at the P111 panel (WDM 21-61-12):

DM21632AA	DB21633
pin 2T	pin 5
pin 2TR	pin 4
pin 1T	pin 2
pin 1TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21633.
 - 3) Re-install the CTC-R, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

815. CTC-L1 No Input from OPBC-L on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29469.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left overhead panel bus controller (OPBC-L), M23112,

These are the tasks:

Left Overhead Panel Bus Controller (OPBC) Removal, AMM TASK 23-93-01-000-801,
Left Overhead Panel Bus Controller (OPBC) Installation, AMM TASK 23-93-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B23126, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the OPBC-L to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DB21631 from the coupler, B21631.
- (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD	DB21631
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21631.
- (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the OPBC-L to its coupler:
- (a) Disconnect connector DB23112B from the OPBC-L, M23112.
- (b) Disconnect connector DB23126 from the coupler, B23126.

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- (c) Do a wiring check between these pins of connector DB23112 at the OPBC-L, P110 and connector DB23126 at the P111 panel (WDM 23-91-11):

DB23112	DB23126
pin 5	pin 5
pin 4	pin 4
pin 2	pin 2
pin 1	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB23126.
 - 3) Re-connect connector DB23112B.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

816. CTC-L1 No Input from PA/CI Controller on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29477.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the passenger address/cabin interphone controller (PA/CI), M23016.
- These are the tasks:
- Passenger Address/Cabin Interphone Controller (PA/CI) Removal, AMM TASK 23-39-03-000-801,
Passenger Address/Cabin Interphone Controller (PA/CI) Installation, AMM TASK 23-39-03-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.
- These are the tasks:

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ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B23128, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the PA/CI controller to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21631 from the coupler, B21631.
 - (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD	DB21631
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-connect connector DB21631.
 - (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the PA/CI controller to its coupler:
- (a) Remove the PA/CI controller, M23016. To remove it, do this task: Passenger Address/Cabin Interphone Controller (PA/CI) Removal, AMM TASK 23-39-03-000-801.
 - (b) Disconnect connector DB23128 from the coupler, B23128.

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- (c) Do a wiring check between these pins of connector DM23016AF at the E1-4 shelf and connector DB23128 at the P111 panel (WDM 23-31-11):

DM23016AF	DB23128
pin 6T	pin 5
pin 6TR	pin 4
pin 5T	pin 2
pin 5TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB23128.
 - 3) Re-install the PA/CI controller, M23016. To install it, do this task: Passenger Address/Cabin Interphone Controller (PA/CI) Installation, AMM TASK 23-39-03-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

817. CTC-R to Systems 629 Bus-L Communication Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-28842, 21-29402.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632. To replace the right cabin temperature controller,

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the ARINC 629 coupler, B21633, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (3) Do this check of the wiring from the CTC-R to its coupler:
- (a) Remove the CTC-R, M21632. To do this, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21633 from the coupler, B21633.
 - (c) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DB21633 at the P111 panel (WDM 21-61-12):

DM21632AA	DB21633
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21633.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

818. CTC-L to Systems 629 Bus-R Communication Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-28861, 21-29601.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the ARINC 629 coupler, B21632, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-R.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the CTC-L to its coupler:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21632 from the coupler, B21632.
 - (c) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DB21632 at the P211 panel (WDM 21-61-11):

DM21631AA	DB21632
pin 2T	pin 5
pin 2TR	pin 4
pin 1T	pin 2
pin 1TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21632.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

819. CTC-R to Systems 629 Bus-R Communication Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-28862, 21-29602.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the ARINC 629 coupler, B21634, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

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ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the CTC-R to its coupler:
 - (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21634 from the coupler, B21634.
 - (c) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DB21634 at the P211 panel (WDM 21-61-12):

DM21632AD	DB21634
pin 2T	pin 2
pin 2TR	pin 1
pin 1T	pin 5
pin 1TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21634.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

820. CTC-R Chan 2 No Input from AIMS-L on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29406.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the IOM(M009) module in the left AIMS cabinet.

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These are the tasks:

Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21633, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31112, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the left AIMS cabinet to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then do these steps:
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21633 from the coupler, B21633.
 - (c) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DB21633 at the P111 panel (WDM 21-61-12):

DM21632AA	DB21633
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21633.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.

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- (f) Re-connect connector DB21633.
- (g) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the left AIMS cabinet to its coupler:
 - (a) Remove the IOM(M009) module from the left AIMS cabinet, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (b) Disconnect connector DB31112 from the coupler, B31112.
 - (c) Do a wiring check between these pins of connector J420B at the left AIMS cabinet and connector DB31112 at the P111 panel (WDM 31-41-25):

J420B	DB31112
pin G3	pin 5
pin G4	pin 4
pin G1	pin 2
pin G2	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB31112.
 - 3) Re-install the IOM(M009) module. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

821. CTC-L Chan 1 No Input from AIMS-R on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29409.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the IOM(M009) module in the right AIMS cabinet.

These are the tasks:

Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,

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Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31116, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the right AIMS cabinet to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then do these steps:
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21631 from the coupler, B21631.
 - (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD	DB21631
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21631.

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- (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (6) Do this check of the wiring from the right AIMS cabinet to its coupler:
 - (a) Remove the IOM(M009) module from the right AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (b) Disconnect connector DB31116 from the coupler, B31116.
 - (c) Do a wiring check between these pins of connector J420B at the right AIMS cabinet and connector DB31116 at the P111 panel (WDM 31-41-26):

J420B	DB31116
pin G3	pin 5
pin G4	pin 4
pin G1	pin 2
pin G2	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB31116.
 - 3) Re-install the IOM(M009) module. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

822. CTC-R Chan 2 No Input from AIMS-R on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29410.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the IOM(M009) module in the right AIMS cabinet.

These are the tasks:

Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21633, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31116, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the right AIMS cabinet to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
 - (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21633 from the coupler, B21633.
 - (c) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DB21633 at the P111 panel (WDM 21-61-12):

DM21632AA	DB21633
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21633.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21633.
- (g) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- (6) Do this check of the wiring from the right AIMS cabinet to its coupler:
- (a) Remove the IOM(M009) module from the right AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (b) Disconnect connector DB31116 from the coupler, B31116.
 - (c) Do a wiring check between these pins of connector J420B at the right AIMS cabinet and connector DB31116 at the P111 panel (WDM 31-41-26):

J420B	DB31116
pin G3	pin 5
pin G4	pin 4
pin G1	pin 2
pin G2	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB31116.
 - 3) Re-install the IOM(M009) module. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

823. CTC-L Chan 2 No Input from AIMS-L on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29605.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the IOM(M004) module in the left AIMS cabinet.
These are the tasks:
Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21632, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE:** This coupler connects the CTC-L to the Systems 629 Bus-R.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31211, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE:** This coupler connects the left AIMS cabinet to the Systems 629 Bus-R.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DB21632 from the coupler, B21632.
- (c) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DB21632 at the P211 panel (WDM 21-61-11):
- | DM21631AA | DB21632 |
|------------------|----------------|
| pin 1T | pin 2 |
| pin 1TR | pin 1 |
| pin 2T | pin 5 |
| pin 2TR | pin 4 |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21632.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21632.
- (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the left AIMS cabinet to its coupler:
- (a) Remove the IOM(M004) module from the left AIMS cabinet.

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These are the tasks:

Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.

- (b) Disconnect connector DB31211 from the coupler, B31211.
- (c) Do a wiring check between these pins of connector J250B at the left AIMS cabinet and connector DB31211 at the P211 panel (WDM 31-41-25):

J250B	DB31211
pin G3	pin 5
pin G4	pin 4
pin G1	pin 2
pin G2	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB31211.
 - 3) Re-install the IOM(M004) module. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

824. CTC-R Chan 1 No Input from AIMS-L on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29606.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the IOM(M004) module in the left AIMS cabinet.

These are the tasks:

Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21634, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31211, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the left AIMS cabinet to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then do these steps:
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
 - (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21634 from the coupler, B21634.
 - (c) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DB21634 at the P211 panel (WDM 21-61-12):

DM21632AD

DB21634

pin 1T	.....	pin 5
pin 1TR	.....	pin 4
pin 2T	.....	pin 2
pin 2TR	.....	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21634.
 - 3) Re-install the CTC-R, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21634.
- (g) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- (6) Do this check of the wiring from the left AIMS cabinet to its coupler:
- (a) Remove the IOM(M004) module from the left AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
 - (b) Disconnect connector DB31211 from the coupler, B31211.
 - (c) Do a wiring check between these pins of connector J250B at the left AIMS cabinet and connector DB31211 at the P211 panel (WDM 31-41-25):

J250B	DB31211
pin G3	pin 5
pin G4	pin 4
pin G1	pin 2
pin G2	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB31211.
 - 3) Re-install the IOM(M004) module, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

825. CTC-L Chan 2 No Input from AIMS-R on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29609.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the IOM(M004) module in the right AIMS cabinet.
These are the tasks:
Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21632, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE:** This coupler connects the CTC-L to the Systems 629 Bus-R.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31214, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE:** This coupler connects the right AIMS cabinet to the Systems 629 Bus-R.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then do these steps:
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DB21632 from the coupler, B21632.
- (c) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DB21632 at the P211 panel (WDM 21-61-11):
- | DM21631AA | DB21632 |
|------------------|----------------|
| pin 1T | pin 2 |
| pin 1TR | pin 1 |
| pin 2T | pin 5 |
| pin 2TR | pin 4 |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21632.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21632.
- (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the right AIMS cabinet to its coupler:

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- (a) Remove the IOM(M004) module from the right AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.
- (b) Disconnect connector DB31214 from the coupler, B31214.
- (c) Do a wiring check between these pins of connector J250B at the right AIMS cabinet and connector DB31214 at the P211 panel (WDM 31-41-26):

J250B	DB31214
pin G3	pin 5
pin G4	pin 4
pin G1	pin 2
pin G2	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB31214.
 - 3) Re-install the IOM(M004) module. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

826. CTC-R Chan 1 No Input from AIMS-R on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29610.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the IOM(M004) module in the right AIMS cabinet.

These are the tasks:

Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801,
Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (3) Replace the ARINC 629 coupler, B21634, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31214, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the right AIMS cabinet to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DB21634 from the coupler, B21634.
- (c) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DB21634 at the P211 panel (WDM 21-61-12):

DM21632AD	DB21634
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21634.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21634.
- (g) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the right AIMS cabinet to its coupler:
- (a) Remove the IOM(M004) module from the right AIMS cabinet. To remove it, do this task: Input/Output Module (IOM) Removal, AMM TASK 31-41-11-000-801.

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- (b) Disconnect connector DB31214 from the coupler, B31214.
- (c) Do a wiring check between these pins of connector J250B at the right AIMS cabinet and connector DB31214 at the P211 panel (WDM 31-41-26):

J250B	DB31214
pin G3	pin 5
pin G4	pin 4
pin G1	pin 2
pin G2	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB31214.
 - 3) Re-install the IOM(M004) module. To install it, do this task: Input/Output Module (IOM) Installation, AMM TASK 31-41-11-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

827. CTC-R Chan 2 No Input from ASG-L (LSCF) on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29438.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left ARINC signal gateway (ASG) card, A12, in the left systems cardfile (LSCF), P85.
These are the tasks:
ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21633, in the P111 panel.

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These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31101, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the LSCF to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21633 from the coupler, B21633.
 - (c) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DB21633 at the P111 panel (WDM 21-61-12):

DM21632AA	DB21633
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the wiring from the left ASG card to its coupler:
- (a) Remove the left ASG card, A12, from the LSCF, P85. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Disconnect connector DB31101 from the coupler, B31101.
 - (c) Do a wiring check between these pins of connector DP8504 at the LSCF, P85, and connector DB31101 in the P111 panel (WDM 31-09-12):

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DP8504	DB31101
pin 5	pin 5
pin 4	pin 4
pin 2	pin 2
pin 1	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DB31101.
 - 3) Re-install the left ASG card, A12, in the LSCF, P85. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

828. CTC-L Chan 1 No Input from ASG-L (RSCF) on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29441.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left ARINC signal gateway (ASG) card, A12, in the right systems cardfile (RSCF), P84.
- These are the tasks:
- ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

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ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31201, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the RSCF, P84 to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21631 from the coupler, B21631.
 - (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD	DB21631
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the wiring from the left ASG card to its coupler:
- (a) Remove the left ASG card, A12, from the RSCF, P84. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Disconnect connector DB31201 from the coupler, B31201.
 - (c) Do a wiring check between these pins of connector DP8404 at the RSCF, P84, and connector DB31201 in the P111 panel (WDM 31-09-22):

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DP8404	DB31201
pin 5	pin 5
pin 4	pin 4
pin 2	pin 2
pin 1	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DB31201.
 - 3) Re-install the left ASG card, A12, in the RSCF, P84. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

829. CTC-R Chan 2 No Input from ASG-L (RSCF) on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29442.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left ARINC signal gateway (ASG) card, A12, in the right systems cardfile (RSCF), P84.
- These are the tasks:
- ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21633, in the P111 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

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ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31201, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the RSCF, P84 to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21633 from the coupler, B21633.
 - (c) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DB21633 at the P111 panel (WDM 21-61-11):

DM21632AA	DB21633
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21633.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the wiring from the left ASG card to its coupler:
- (a) Remove the left ASG card, A12, from the RSCF, P84. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Disconnect connector DB31201 from the coupler, B31201.
 - (c) Do a wiring check between these pins of connector DP8404 at the RSCF, P84, and connector DB31201 in the P111 panel (WDM 31-09-22):

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DP8404	DB31201
pin 5	pin 5
pin 4	pin 4
pin 2	pin 2
pin 1	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DB31201.
 - 3) Re-install the left ASG card, A12, in the RSCF, P84. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

830. CTC-L Chan 2 No Input from ASG-R (LSCF) on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29637.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right ARINC signal gateway (ASG) card, A15, in the left systems cardfile (LSCF), P85.
- These are the tasks:
- ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21632, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

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ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31102, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the LSCF to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21632 from the coupler, B21632.
 - (c) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DB21632 at the P211 panel (WDM 21-61-11):

DM21631AA	DB21632
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21632.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the wiring from the right ASG card to its coupler:
- (a) Remove the right ASG card, A15, from the LSCF, P85. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Disconnect connector DB31102 from the coupler, B31102.
 - (c) Do a wiring check between these pins of connector DP8506 at the LSCF, P85, and connector DB31102 in the P211 panel (WDM 31-09-12):

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DP8506	DB31102
pin 5	pin 5
pin 4	pin 4
pin 2	pin 2
pin 1	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DB31102.
 - 3) Re-install the right ASG card, A15, in the LSCF, P85. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

831. CTC-R Chan 1 No Input from ASG-R (LSCF) on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29638.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right ARINC signal gateway (ASG) card, A15, in the left systems cardfile (LSCF), P85.
- These are the tasks:
- ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21634, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

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ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31102, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the LSCF to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21634 from the coupler, B21634.
 - (c) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DB21634 at the P211 panel (WDM 21-61-12):

DM21632AD	DB21634
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21634.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the wiring from the right ASG card to its coupler:
- (a) Remove the right ASG card, A15, from the LSCF, P85, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Disconnect connector DB31102 from the coupler, B31102.
 - (c) Do a wiring check between these pins of connector DP8506 at the LSCF, P85, and connector DB31102 in the P211 panel (WDM 31-09-12):

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DP8506

pin 5		pin 5
pin 4		pin 4
pin 2		pin 2
pin 1		pin 1

DB31102

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DB31102.
 - 3) Re-install the right ASG card, A15, in the LSCF, P85. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

832. CTC-L Chan 2 No Input from ASG-R (RSCF) on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29641.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right ARINC signal gateway (ASG) card, A15, in the right systems cardfile (RSCF), P84.
- These are the tasks:
- ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21632, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

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ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31202, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the RSCF to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21632 from the coupler, B21632.
 - (c) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DB21632 at the P211 panel (WDM 21-61-11):

DM21631AA	DB21632
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21632.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the wiring from the right ASG card to its coupler:
- (a) Remove the right ASG card, A15, from the RSCF, P84. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Disconnect connector DB31202 from the coupler, B31202.
 - (c) Do a wiring check between these pins of connector DP8406 at the RSCF, P84, and connector DB31202 in the P211 panel (WDM 31-09-22):

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DP8406	DB31202
pin 5	pin 5
pin 4	pin 4
pin 2	pin 2
pin 1	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DB31202.
 - 3) Re-install the right ASG card, A15, in the RSCF, P84. To install it, do this task:
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

833. CTC-R Chan 1 No Input from ASG-R (RSCF) on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29642.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right ARINC signal gateway (ASG) card, A15, in the right systems cardfile (RSCF), P84.
- These are the tasks:
- ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21634, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

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NOTE: This coupler connects the CTC-R to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B31202, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the RSCF to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) Disconnect connector DB21634 from the coupler, B21634.
 - (c) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DB21634 at the P211 panel (WDM 21-61-12):

DM21632AD	DB21634
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DB21634.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
- (6) Do this check of the wiring from the right ASG card to its coupler:
- (a) Remove the right ASG card, A15, from the RSCF, P84. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.
 - (b) Disconnect connector DB31202 from the coupler, B31202.
 - (c) Do a wiring check between these pins of connector DP8406 at the RSCF, P84, and connector DB31202 in the P211 panel (WDM 31-09-22):

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DP8406	DB31202
pin 5	pin 5
pin 4	pin 4
pin 2	pin 2
pin 1	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DB31202.
 - 3) Re-install the right ASG card, A15, in the RSCF, P84. To install it, do this task: ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

834. Flight Deck Temperature Control Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-27211, 21-27221.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
- (a) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
 - (b) If the MAT shows ACTIVE for the maintenance message while the selector is in one or more of the positions specified above, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in all the positions specified above, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the flight deck temperature selector, M21314S3.
- These are the tasks:
- Zone Temperature Selector Removal, AMM TASK 21-61-05-000-801,
Zone Temperature Selector Installation, AMM TASK 21-61-05-400-801.
- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the selector is in one or more of the positions specified above, then continue.
- (2) Do this check of the wiring from the flight deck temperature selector to the left overhead panel cardfile (OPCF-L):

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- (a) Remove the air conditioning module, M21314, from the P5 panel, but do not disconnect its electrical connectors (WDM 21-61-17).
- (b) Disconnect connector M21314DS3 from the flight deck temperature selector.
- (c) Disconnect connector DM23117L from the OPCF-L, M23117.
- (d) Do a wiring check between these pins of connector M21314DS3 at the pilot's overhead panel, P5, and connector DM23117L at the maintenance panel, P61 (WDM 21-61-17):

M21314DS3	DM23117L
pin F	pin A8
pin E	pin A9
pin D	pin A10
pin C	pin A11
pin B	pin A12
pin G	pin A13
pin H	pin A19
pin J	pin A14
pin K	pin A15
pin L	pin A16
pin M	pin A17
pin N	pin A18

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M21314DS3 and DM23117L.
 - 3) Re-install the air conditioning module, M21314.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
 - (g) Re-connect connector M21314DS3 to the flight deck temperature selector, M21314S3.
 - (h) Re-install the air conditioning module, M21314.
- (3) Replace the OPCF-L chassis, M23117
- These are the tasks:
- Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the selector is in one or more of the positions specified above, then continue.

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- (4) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.

————— END OF TASK —————

835. Flight Deck Temperature Control Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-27212, 21-27222.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
- (a) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
 - (b) If the MAT shows ACTIVE for the maintenance message while the selector is in one or more of the positions specified above, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in all the positions specified above, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the flight deck temperature selector, M21314S3.

These are the tasks:

Zone Temperature Selector Removal, AMM TASK 21-61-05-000-801,
Zone Temperature Selector Installation, AMM TASK 21-61-05-400-801.

- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message while the selector is in one or more of the positions specified above,
- (2) Do this check of the wiring from the flight deck temperature selector to the left overhead panel cardfile (OPCF-L):
- (a) Remove the air conditioning module, M21314, from the P5 panel, but do not disconnect its electrical connectors (WDM 21-61-17).
 - (b) Disconnect connector M21314DS3 from the flight deck temperature selector.
 - (c) Disconnect connector DM23117L from the OPCF-L, M23117.

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- (d) Do a wiring check between these pins of connector M21314DS3 at the pilot's overhead panel, P5, and connector DM23117L at the maintenance panel, P61 (WDM 21-61-17):

M21314DS3	DM23117L
pin F	pin A8
pin E	pin A9
pin D	pin A10
pin C	pin A11
pin B	pin A12
pin G	pin A13
pin H	pin A19
pin J	pin A14
pin K	pin A15
pin L	pin A16
pin M	pin A17
pin N	pin A18

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connectors M21314DS3 and DM23117L.
 - 3) Re-install the air conditioning module, M21314.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M21314DS3 to the flight deck temperature selector, M21314S3.
- (h) Re-install the air conditioning module, M21314.
- (3) Replace the OPCF-L chassis, M23117.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,

Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message while the selector is in one or more of the positions specified above, then continue.
- (4) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

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Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.

————— **END OF TASK** —————

837. Cabin Temperature Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-27112.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the CABIN TEMP selector first to C, then to W.
 - (b) If the MAT shows ACTIVE for the maintenance message while the selector is in the C or W position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in the C and W positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the cabin temperature selector, M21314S6.
These are the tasks:
Zone Temperature Selector Removal, AMM TASK 21-61-05-000-801,
Zone Temperature Selector Installation, AMM TASK 21-61-05-400-801.
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the CABIN TEMP selector first to C, then to W.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the C and W positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the selector is in the C or W position, then continue.
- (2) Do this check of the wiring from the cabin temperature selector to the right overhead panel cardfile (OPCF-R):
 - (a) Remove the air conditioning module, M21314 from the P5 panel, but do not disconnect its electrical connectors (WDM 21-61-12).
 - (b) Disconnect connector M21314DS6 from the cabin temperature selector.
 - (c) Disconnect connector DM23217L from the OPCF-R, M23217.
 - (d) Do a wiring check between these pins of connector M21314DS6 at the pilot's overhead panel, P5, and connector DM23217L at the maintenance panel, P61 (WDM 21-61-12):

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M21314DS6	DM23217L
pin F	pin A8
pin E	pin A9
pin D	pin A10
pin C	pin A11
pin B	pin A12
pin G	pin A13
pin H	pin A19
pin J	pin A14
pin K	pin A15
pin L	pin A16
pin M	pin A17
pin N	pin A18

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M21314DS6 and DM23217L.
 - 3) Re-install the air conditioning module, M21314.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the CABIN TEMP selector first to C, then to W.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the C and W positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M21314DS6 to the cabin temperature selector, M21314S6.
- (h) Re-install the air conditioning module, M21314.
- (3) Replace the OPCF-R chassis, M23217.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,

Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the CABIN TEMP selector first to C, then to W.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the C and W positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the selector is in the C or W position, then continue.
- (4) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the CABIN TEMP selector first to C, then to W.

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- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the C and W positions, you corrected the fault.

————— END OF TASK —————

838. CTC-L No Input from LRU on Systems 629 Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-29433, 21-29473, 21-29621, 21-29629, 21-29633, 21-29645, 21-29649, 21-29669, 21-29673.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) In the list below, find the ARINC 629 bus, source LRU, and ARINC couplers for the applicable maintenance message.

SOURCE LRU	SYSTEMS 629 BUS	SOURCE LRU COUPLER	CTC-L COUPLER
ASCPC-R M36112	left	B36232 (P111)	B21631 (P111)
OPBC-R M23212	left	B23127 (P111)	B21631 (P111)
APUC M49002	right	B49201 (P215)	B21632 (P211)
ASCPC-L M36111	right	B36234 (P211)	B21632 (P211)
ASCPC-R M36112	right	B36231 (P211)	B21632 (P211)
CSMU M23061	right	B23228 (P211)	B21632 (P211)
CTC-R M21632	right	B21634 (P211)	B21632 (P211)
OPBC-L M23112	right	B23226 (P211)	B21632 (P211)
OPBC-R M23212	right	B23227 (P211)	B21632 (P211)

- (2) Replace the left cabin temperature controller (CTC-L), M21631. To replace the left cabin temperature controller,

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the applicable source LRU:
- (a) APUC, M49002.
- These are the tasks:
- APU Controller (APUC) Removal, AMM TASK 49-61-05-000-801,
- APU Controller (APUC) Installation, AMM TASK 49-61-05-400-801.
- (b) ASCPC-L, M36111 or ASCPC-R, M36112.

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These are the tasks:

ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.

- (c) CSMU, M23061.

These are the tasks:

Cabin System Management Unit (CSMU) Removal, AMM TASK 23-39-11-000-801,
Cabin System Management Unit (CSMU) Installation, AMM TASK 23-39-11-400-801.

- (d) CTC-R, M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (e) OPBC-L, M23112.

These are the tasks:

Left Overhead Panel Bus Controller (OPBC) Removal, AMM TASK 23-93-01-000-801,
Left Overhead Panel Bus Controller (OPBC) Installation, AMM TASK 23-93-01-400-801.

- (f) OPBC-R, M23212.

These are the tasks:

Right Overhead Panel Bus Controller (OPBC) Removal, AMM TASK 23-93-01-000-802,
Right Overhead Panel Bus Controller (OPBC) Installation, AMM TASK 23-93-01-400-802.

- (g) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (h) If the MAT shows ACTIVE for the maintenance message, then continue.

- (4) Replace the applicable ARINC 629 coupler for the CTC-L. To replace the ARINC 629 coupler,
These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

- (5) Replace the applicable ARINC 629 coupler for the source LRU. To replace the ARINC 629 coupler,

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

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839. CTC-R No Input from LRU on Systems 629 Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-29422, 21-29430, 21-29434, 21-29450, 21-29470, 21-29474, 21-29478, 21-29622, 21-29630, 21-29634, 21-29646, 21-29650, 21-29670, 21-29674.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) In the list below, find the ARINC 629 bus, source LRU, and ARINC couplers for the applicable maintenance message.

SOURCE LRU	SYSTEMS 629 BUS	SOURCE LRU COUPLER	CTC-R COUPLER
APUC M49002	left	B49101 (P115)	B21633 (P111)
ASCPC-L M36111	left	B36233 (P111)	B21633 (P111)
ASCPC-R M36112	left	B36232 (P111)	B21633 (P111)
CTC-L M21631	left	B21631 (P111)	B21633 (P111)
OPBC-L M23112	left	B23126 (P111)	B21633 (P111)
OPBC-R M23212	left	B23127 (P111)	B21633 (P111)
PA/CICONT M23016	left	B23128 (P111)	B21633 (P111)
APUC M49002	right	B49201 (P215)	B21634 (P211)
ASCPC-L M36111	right	B36234 (P211)	B21634 (P211)
ASCPC-R M36112	right	B36231 (P211)	B21634 (P211)
CSMU M23061	right	B23228 (P211)	B21634 (P211)
CTC-L M21631	right	B21632 (P211)	B21634 (P211)
OPBC-L M23112	right	B23226 (P211)	B21634 (P211)
OPBC-R M23212	right	B23227 (P211)	B21634 (P211)

- (2) Replace the right cabin temperature controller (CTC-R), M21632. To replace the right cabin temperature controller,

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the applicable source LRU:

- (a) APUC, M49002.

These are the tasks:

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APU Controller (APUC) Removal, AMM TASK 49-61-05-000-801,
APU Controller (APUC) Installation, AMM TASK 49-61-05-400-801.

- (b) ASCPC-L, M36111 or ASCPC-R, M36112.

These are the tasks:

ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.

- (c) CSMU, M23061.

These are the tasks:

Cabin System Management Unit (CSMU) Removal, AMM TASK 23-39-11-000-801,
Cabin System Management Unit (CSMU) Installation, AMM TASK 23-39-11-400-801.

- (d) CTC-L, M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (e) OPBC-L, M23112.

These are the tasks:

Left Overhead Panel Bus Controller (OPBC) Removal, AMM TASK 23-93-01-000-801,
Left Overhead Panel Bus Controller (OPBC) Installation, AMM TASK 23-93-01-400-801.

- (f) OPBC-R, M23212.

These are the tasks:

Right Overhead Panel Bus Controller (OPBC) Removal, AMM TASK 23-93-01-000-802,
Right Overhead Panel Bus Controller (OPBC) Installation, AMM TASK 23-93-01-400-802.

- (g) PA/CICONT, M23016.

These are the tasks:

Passenger Address/Cabin Interphone Controller (PA/CI) Removal, AMM
TASK 23-39-03-000-801,

Passenger Address/Cabin Interphone Controller (PA/CI) Installation, AMM
TASK 23-39-03-400-801.

- (h) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (i) If the MAT shows ACTIVE for the maintenance message, then continue.

- (4) Replace the applicable ARINC 629 coupler for the CTC-R. To replace the ARINC 629 coupler,
These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

- (5) Replace the applicable ARINC 629 coupler for the source LRU. To replace the ARINC 629 coupler,

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These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

840. Right Cabin Temperature Controller (CTC) Software Configuration Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-25032.

B. Fault Isolation Procedure

- (1) Do a check of the system configuration for this system on the MAT: 21 Cabin Temperature Control System.
 - (a) Find Cabin Temperature Controller (R, Chan 1) in Right AIMS on the display and make sure that the software part numbers are correct.
 - (b) If a part number is incorrect, install software in channel 1 of the right cabin temperature controller (CTC). To install the software, do this task: Cabin Temperature Controller (CTC) Software Installation, AMM TASK 21-61-01-400-803.
 - (c) Find Cabin Temperature Controller (R, Chan 2) in Right AIMS on the display and make sure that the software part numbers are correct.
 - (d) If a part number is incorrect, install software in channel 2 of the right cabin temperature controller (CTC). To install the software, do this task: Cabin Temperature Controller (CTC) Software Installation, AMM TASK 21-61-01-400-803.
 - (e) Push the AIR COND RESET switch on the P5 panel.
 - (f) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

841. Trim Air Modulating Valve (Zone A, C, or E) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-20002, 21-20004, 21-20006.

B. Initial Evaluation

- (1) If the Zone A, C, or E target temperature indication on the air synoptic page is blank, then do the Fault Isolation Procedure below.

NOTE: A blank target temperature indication on the Air Synoptic display can be caused by a failure of the Trim Air Modulation valve. The CTC does not provide target temperature information to the Air Synoptic display if the Trim Air Modulation valve fails to operate.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.

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- (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the applicable trim air modulating valve shown below.

These are the tasks:

Zone Trim Air Modulating Valves Removal, AMM TASK 21-61-02-000-801,

Zone Trim Air Modulating Valves Installation, AMM TASK 21-61-02-400-801.

- (a) Zone A - V21612
- (b) Zone C - V21614
- (c) Zone E - V21616.
 - 1) Push the AIR COND RESET switch on the P5 panel.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message does show on the ground test display, then continue.
- (2) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message does show on the ground test display, then continue.
- (3) Do this check of the wiring from the CTC-L to the applicable valve:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect the connector shown below from the applicable valve:
 - 1) Zone A valve - connector DV21612
 - 2) Zone C valve - connector DV21614
 - 3) Zone E valve - connector DV21616.
 - (c) Do a wiring check between these pins of connectors DM21631AB, DM21631AE at the E1-2 shelf and the connector at the applicable valve:
 - 1) Zone A Valve;

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DV21612	DM21631AE
pin 1	pin F12
pin 3	pin G12
pin 2	pin H12
pin 4	pin F5
pin 6	pin F4
pin 8	pin F7
pin 10	pin F6

DV21612	DM21631AB
pin 1	pin E12
pin 3	pin D12
pin 2	pin C12
pin 4	pin E5
pin 6	pin E4
pin 8	pin E7
pin 10	pin E6

2) Zone C Valve;

DV21614	DM21631AE
pin 1	pin E11
pin 3	pin F11
pin 2	pin G11
pin 4	pin G5
pin 6	pin G4
pin 8	pin G7
pin 10	pin G6

DV21614	DM21631AB
pin 1	pin F11
pin 3	pin E11
pin 2	pin D11
pin 4	pin D5
pin 6	pin D4
pin 8	pin D7
pin 10	pin D6

3) Zone E Valve;

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DV21616	DM21631AE
pin 1	pin F10
pin 3	pin G10
pin 2	pin H10
pin 4	pin H5
pin 6	pin H4
pin 8	pin H7
pin 10	pin H6

DV21616	DM21631AB
pin 1	pin E10
pin 3	pin D10
pin 2	pin C10
pin 4	pin C5
pin 6	pin C4
pin 8	pin C7
pin 10	pin C6

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect the applicable connector.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.

END OF TASK

842. Trim Air Modulating Valve (Zone B, D, or F) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-20003, 21-20005, 21-20007.

B. Initial Evaluation

- (1) If the Zone B, D, or F target temperature indication on the air synoptic page is blank, then do the Fault Isolation Procedure below.
- NOTE:** A blank target temperature indication on the Air Synoptic display can be caused by a failure of the Trim Air Modulation valve. The CTC does not provide target temperature information to the Air Synoptic display if the Trim Air Modulation valve fails to operate.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do these steps:
- (a) Push the AIR COND RESET switch on the P5 panel.

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- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right Trim Air System.
- (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the applicable trim air modulating valve shown below.

These are the tasks:

Zone Trim Air Modulating Valves Removal, AMM TASK 21-61-02-000-801,

Zone Trim Air Modulating Valves Installation, AMM TASK 21-61-02-400-801.

- (a) Zone B - V21613
- (b) Zone D - V21615
- (c) Zone F - V21617.
 - 1) Push the AIR COND RESET switch on the P5 panel.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right Trim Air System.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) If the maintenance message does show on the ground test display, then continue.
- (2) Replace the Right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right Trim Air System.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message does show on the ground test display, then continue.
- (3) Do this check of the wiring from the CTC-R to the applicable valve:
 - (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect the connector shown below from the applicable valve:
 - 1) Zone B valve - connector DV21613
 - 2) Zone D valve - connector DV21615
 - 3) Zone F valve - connector DV21617.
 - (c) Do a wiring check between these pins of connectors DM21632AB, DM21632AE at the E2-2 shelf and the connector at the applicable valve:
 - 1) Zone B Valve;

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DV21613	DM21632AE
pin 1	pin E13
pin 3	pin F13
pin 2	pin G13
pin 4	pin E5
pin 6	pin E4
pin 8	pin E7
pin 10	pin E6

DV21613	DM21632AB
pin 1	pin F13
pin 3	pin E13
pin 2	pin D13
pin 4	pin F5
pin 6	pin F4
pin 8	pin F7
pin 10	pin F6

2) Zone D Valve;

DV21615	DM21632AE
pin 1	pin F12
pin 3	pin G12
pin 2	pin H12
pin 4	pin F5
pin 6	pin F4
pin 8	pin F7
pin 10	pin F6

DV21615	DM21632AB
pin 1	pin E12
pin 3	pin D12
pin 2	pin C12
pin 4	pin E5
pin 6	pin E4
pin 8	pin E7
pin 10	pin E6

3) Zone F Valve;

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DV21617	DM21632AE
pin 1	pin E11
pin 3	pin F11
pin 2	pin G11
pin 4	pin G5
pin 6	pin G4
pin 8	pin G7
pin 10	pin G6

DV21617	DM21632AB
pin 1	pin F11
pin 3	pin E11
pin 2	pin D11
pin 4	pin D5
pin 6	pin D4
pin 8	pin D7
pin 10	pin D6

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect the applicable connector.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.

———— END OF TASK ————

843. Zone Air Temperature Sensor (Flight Deck) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-22192, 21-22201.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right Cabin Temperature Controller (CTC), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins G7 and H7 of connector DM21632AD at the E2-2 shelf (WDM 21-61-17).

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- (3) Measure the resistance between pins C7 and D7 of connector DM21632AA at the E2-2 shelf (WDM 21-61-17).
- (4) If the resistance at connectors DM21632AD and DM21632AA is not 1K-1000K ohms, then do these steps:
- Disconnect connector DM21600 from the flight deck zone air temperature sensor, M21600.
 - Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-17).
 - Pin 1 and pin 2
 - Pin 3 and pin 4
 - If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:
 - Replace the temperature sensor, M21600.

These are the tasks:

Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.
 - If the resistance is 1K-1000K for each pair of pins, then do these steps:
 - Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21600 at the temperature sensor, M21600 (WDM 21-61-17).

DM21632AD	DM21600
pin G7	pin 1
pin H7	pin 2

 - Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21600 at the temperature sensor, M21600 (WDM 21-61-17).

DM21632AA	DM21600
pin D7	pin 3
pin C7	pin 4

 - If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - Re-connect the connector DM21600 to the temperature sensor, M21600.
 - Re-install the right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If the resistance at connectors DM21632AD and DM21632AA is 1k-1000K ohms, then do these steps:
- Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

844. Zone Air Temperature Sensor 1 (Flight Deck) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22101.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left Cabin Temperature Controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins C5 and C6 of connector DM21631AD at the E1-2 shelf (WDM 21-61-17).
- (3) Measure the resistance between pins H5 and H6 of connector DM21631AA at the E1-2 shelf (WDM 21-61-17).
- (4) If the resistance at connectors DM21631AD and DM21631AA is not 1K-1000K ohms, then do these steps:
- (a) Disconnect connector DM21601 from the flight deck zone air temperature sensor 1, M21601.
- (b) Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-17).
- 1) Pin 1 and pin 2
- 2) Pin 3 and pin 4
- (c) If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:
- 1) Replace the temperature sensor, M21601.
- These are the tasks:
- Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.
- 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K for each pair of pins, then do these steps:
- 1) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21601 at the temperature sensor, M21601 (WDM 21-61-17).

DM21631AD

pin C5
pin C6

DM21601

pin 1
pin 2

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- 2) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21601 at the temperature sensor, M21601 (WDM 21-61-17).

DM21631AA	DM21601
pin H5	pin 3
pin H6	pin 4

- 3) If you find a problem with the wiring, then do these steps:
- Repair the wiring.
 - Re-connect the connector DM21601 to the temperature sensor, M21601.
 - Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If the resistance at connectors DM21631AD and DM21631AA is 1k-1000K ohms, then do these steps:
- Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

845. Zone Air Temperature Sensor 1 (Zone A) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22102.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left cabin temperature controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins E5 and E6 of connector DM21631AD at the E1-2 shelf (WDM 21-61-21).
- (3) Measure the resistance between pins F5 and F6 of connector DM21631AA at the E1-2 shelf (WDM 21-61-21).
- (4) If the resistance at connectors DM21631AD and DM21631AA is not 1K-1000K ohms, then do these steps:
- Disconnect connector DM21605 from the zone A air temperature sensor, M21605.
 - Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-21).
 - Pin 1 and pin 2
 - Pin 3 and pin 4

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- (c) If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:
- 1) Replace the temperature sensor, M21605.
These are the tasks:
Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.
 - 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K for each pair of pins, then do these steps:
- 1) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21605 at the temperature sensor, M21605 (WDM 21-61-21):

DM21631AD	DM21605
pin E5	pin 1
pin E6	pin 2
 - 2) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21605 at the temperature sensor, M21605 (WDM 21-61-21):

DM21631AA	DM21605
pin F5	pin 3
pin F6	pin 4
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21605 to the temperature sensor, M21605.
 - c) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If the resistance at connectors DM21631AD and DM21631AA is 1K-1000K ohms, then do these steps:
- (a) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

846. Zone Air Temperature Sensor 1 (Zone B) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22103.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right cabin temperature controller (CTC), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins C5 and C6 of connector DM21632AD at the E2-2 shelf (WDM 21-61-23).
- (3) Measure the resistance between pins H5 and H6 of connector DM21632AA at the E2-2 shelf (WDM 21-61-23).
- (4) If the resistance at connectors DM21632AD and DM21632AA is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21609 from the zone B air temperature sensor, M21609.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-23).
 - 1) Pin 1 and pin 2
 - 2) Pin 3 and pin 4
 - (c) If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:
 - 1) Replace the temperature sensor, M21609.
These are the tasks:
Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.
 - 2) Re-install the right CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K for each pair of pins, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21609 at the temperature sensor, M21609 (WDM 21-61-23):

DM21632AD	DM21609
pin C5	pin 1
pin C6	pin 2

- 2) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21609 at the temperature sensor, M21609 (WDM 21-61-23):

DM21632AA	DM21609
pin H5	pin 3
pin H6	pin 4

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.

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- b) Re-connect the connector DM21609 to the temperature sensor, M21609.
 - c) Re-install the right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If the resistance at connectors DM21632AD and DM21632AA is 1K-1000K ohms, then do these steps:
- (a) Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

847. Zone Air Temperature Sensor 2 (Zone B) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22203.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right cabin temperature controller (CTC), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins H5 and H6 of connector DM21632AD at the E2-2 shelf (WDM 21-61-23).
- (3) Measure the resistance between pins C5 and C6 of connector DM21632AA at the E2-2 shelf (WDM 21-61-23).
- (4) If the resistance at connectors DM21632AD and DM21632AA is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21611 from the zone B air temperature sensor, M21611.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-23).
 - 1) Pin 1 and pin 2
 - 2) Pin 3 and pin 4
 - (c) If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:
 - 1) Replace the temperature sensor, M21611.
These are the tasks:
Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.
 - 2) Re-install the right CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K for each pair of pins, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21611 at the temperature sensor, M21611 (WDM 21-61-23):

DM21632AD		DM21611
pin H5	.....	pin 1
pin H6	.....	pin 2
 - 2) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21611 at the temperature sensor, M21611 (WDM 21-61-23):

DM21632AA		DM21611
pin C5	.....	pin 3
pin C6	.....	pin 4
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21611 to the temperature sensor, M21611.
 - c) Re-install the right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If the resistance at connectors DM21632AD and DM21632AA is 1K-1000K ohms, then do these steps:
 - (a) Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

848. Zone Air Temperature Sensor 1 (Zone C) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22104.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left cabin temperature controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins F5 and F6 of connector DM21631AD at the E1-2 shelf (WDM 21-61-25).

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- (3) Measure the resistance between pins E5 and E6 of connector DM21631AA at the E1-2 shelf (WDM 21-61-25).
- (4) If the resistance at connectors DM21631AD and DM21631AA is not 1K-1000K ohms, then do these steps:
- (a) Disconnect connector DM21613 from the zone C air temperature sensor, M21613.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-25).
 - 1) Pin 1 and pin 2
 - 2) Pin 3 and pin 4
 - (c) If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:
 - 1) Replace the temperature sensor, M21613.
These are the tasks:
Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.
 - 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K for each pair of pins, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21613 at the temperature sensor, M21613 (WDM 21-61-25):

DM21631AD		DM21613
pin F5	.....	pin 1
pin F6	.....	pin 2
 - 2) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21613 at the temperature sensor, M21613 (WDM 21-61-25):

DM21631AA		DM21613
pin E5	.....	pin 3
pin E6	.....	pin 4
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21613 to the temperature sensor, M21613.
 - c) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If the resistance at connectors DM21631AD and DM21631AA is 1K-1000K ohms, then do these steps:
- (a) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

849. Zone Air Temperature Sensor 2 (Zone C) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22204.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left cabin temperature controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins K5 and K6 of connector DM21631AD at the E1-2 shelf (WDM 21-61-25).
- (3) Measure the resistance between pins A5 and A6 of connector DM21631AA at the E1-2 shelf (WDM 21-61-25).
- (4) If the resistance at connectors DM21631AD and DM21631AA is not 1K-1000K ohms, then do these steps:
- (a) Disconnect connector DM21615 from the zone C air temperature sensor, M21615.
- (b) Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-25).
- 1) Pin 1 and pin 2
- 2) Pin 3 and pin 4
- (c) If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:
- 1) Replace the temperature sensor, M21615.
- These are the tasks:
- Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.
- 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K for each pair of pins, then do these steps:
- 1) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21615 at the temperature sensor, M21615 (WDM 21-61-25):

DM21631AD	DM21615
pin K5	pin 1
pin K6	pin 2

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- 2) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21615 at the temperature sensor, M21615 (WDM 21-61-25):

DM21631AA	DM21615
pin A5	pin 3
pin A6	pin 4

- 3) If you find a problem with the wiring, then do these steps:
- Repair the wiring.
 - Re-connect the connector DM21615 to the temperature sensor, M21615.
 - Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If the resistance at connectors DM21631AD and DM21631AA is 1K-1000K ohms, then do these steps:
- Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

850. Zone Air Temperature Sensor 1 (Zone D) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22105.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right cabin temperature controller (CTC), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins E5 and E6 of connector DM21632AD at the E2-2 shelf (WDM 21-61-27).
- (3) Measure the resistance between pins F5 and F6 of connector DM21632AA at the E2-2 shelf (WDM 21-61-27).
- (4) If the resistance at connectors DM21632AD and DM21632AA is not 1K-1000K ohms, then do these steps:
- Disconnect connector DM21617 from the zone D air temperature sensor, M21617.
 - Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-27).
 - Pin 1 and pin 2
 - Pin 3 and pin 4

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(c) If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:

- 1) Replace the temperature sensor, M21617.

These are the tasks:

Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.

- 2) Re-install the right CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

(d) If the resistance is 1K-1000K for each pair of pins, then do these steps:

- 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21617 at the temperature sensor, M21617 (WDM 21-61-27):

DM21632AD	DM21617
pin E5	pin 1
pin E6	pin 2

- 2) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21617 at the temperature sensor, M21617 (WDM 21-61-27):

DM21632AA	DM21617
pin F5	pin 3
pin F6	pin 4

- 3) If you find a problem with the wiring, then do these steps:

- a) Repair the wiring.
- b) Re-connect the connector DM21617 to the temperature sensor, M21617.
- c) Re-install the right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (5) If the resistance at connectors DM21632AD and DM21632AA is 1K-1000K ohms, then do these steps:

- (a) Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

851. Zone Air Temperature Sensor 2 (Zone D) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22205.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right cabin temperature controller (CTC), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins J5 and J6 of connector DM21632AD at the E2-2 shelf (WDM 21-61-27).
- (3) Measure the resistance between pins B5 and B6 of connector DM21632AA at the E2-2 shelf (WDM 21-61-27).
- (4) If the resistance at connectors DM21632AD and DM21632AA is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21619 from the zone D air temperature sensor, M21617.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-27).
 - 1) Pin 1 and pin 2
 - 2) Pin 3 and pin 4
 - (c) If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:
 - 1) Replace the temperature sensor, M21619.
These are the tasks:
Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.
 - 2) Re-install the right CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K for each pair of pins, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21619 at the temperature sensor, M21617 (WDM 21-61-27):

DM21632AD	DM21619
pin J5	pin 1
pin J6	pin 2

- 2) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21619 at the temperature sensor, M21617 (WDM 21-61-27):

DM21632AA	DM21619
pin B5	pin 3
pin B6	pin 4

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.

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- b) Re-connect the connector DM21619 to the temperature sensor, M21619.
 - c) Re-install the right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If the resistance at connectors DM21632AD and DM21632AA is 1K-1000K ohms, then do these steps:
- (a) Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

852. Zone Air Temperature Sensor 1 (Zone E) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22106.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left cabin temperature controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins G5 and G6 of connector DM21631AD at the E1-2 shelf (WDM 21-61-31).
- (3) Measure the resistance between pins D5 and D6 of connector DM21631AA at the E1-2 shelf (WDM 21-61-31).
- (4) If the resistance at connectors DM21631AD and DM21631AA is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21621 from the zone E air temperature sensor, M21621.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-31).
 - 1) Pin 1 and pin 2
 - 2) Pin 3 and pin 4
 - (c) If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:
 - 1) Replace the temperature sensor, M21621.
These are the tasks:
Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.
 - 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K for each pair of pins, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21621 at the temperature sensor, M21621 (WDM 21-61-31):

DM21631AD	DM21621
pin G5	pin 1
pin G6	pin 2
 - 2) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21621 at the temperature sensor, M21621 (WDM 21-61-31):

DM21631AA	DM21621
pin D5	pin 3
pin D6	pin 4
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21621 to the temperature sensor, M21621.
 - c) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If the resistance at connectors DM21631AD and DM21631AA is 1K-1000K ohms, then do these steps:
 - (a) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

853. Zone Air Temperature Sensor 1 (Zone F) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22107.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right cabin temperature controller (CTC), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins F5 and F6 of connector DM21632AD at the E2-2 shelf (WDM 21-61-33).

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- (3) Measure the resistance between pins E5 and E6 of connector DM21632AA at the E2-2 shelf (WDM 21-61-33).
- (4) If the resistance at connectors DM21632AD and DM21632AA is not 1K-1000K ohms, then do these steps:
- (a) Disconnect connector DM21625 from the zone F air temperature sensor, M21625.
 - (b) Measure the resistance between these pairs of pins on the temperature sensor (WDM 21-61-33).
 - 1) Pin 1 and pin 2
 - 2) Pin 3 and pin 4
 - (c) If the resistance is not 1K-1000K ohms for each pair of pins, then do these steps:
 - 1) Replace the temperature sensor, M21625.
These are the tasks:
Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801,
Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801.
 - 2) Re-install the right CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K for each pair of pins, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21625 at the temperature sensor, M21625 (WDM 21-61-33):

DM21632AD		DM21625
pin F5	.....	pin 1
pin F6	.....	pin 2
 - 2) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21625 at the temperature sensor, M21625 (WDM 21-61-33):

DM21632AA		DM21625
pin E5	.....	pin 3
pin E6	.....	pin 4
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21625 to the temperature sensor, M21625.
 - c) Re-install the right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (5) If the resistance at connectors DM21632AD and DM21632AA is 1K-1000K ohms, then do these steps:
- (a) Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.



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- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

854. Zone Duct Temperature Sensor 1 (Flight Deck) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22301.

B. Possible Causes

- (1) Temperature Sensor, M21602
- (2) Left Cabin Temperature Controller (CTC), M21631
- (3) Wiring

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21443	F/D TRIM MOD VLV

D. Related Data

- (1) WDM 21-61-17

E. Initial Evaluation

- (1) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Remove the Left Cabin Temperature Controller (CTC), M21631. This is the task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the Resistance between pins E3 and E4 of connector DM21631AD at the E1-2 shelf (WDM 21-61-17).
 - (a) If the Resistance at connector DM21631AD is not 1K-1000K Ohms, then do these steps:
 - 1) Disconnect connector DM21602 from the Flight Deck Zone Duct Temperature Sensor 1, M21602.
 - 2) Measure the Resistance between pins 1 and 2 on the Temperature Sensor, M21602 (WDM 21-61-17).
 - a) If the Resistance is not 1K-1000K Ohms, then replace the Temperature Sensor, M21602. These are the tasks:
 - Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801
 - Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801
 - <1> Do the Repair Confirmation at the end of this task.
 - b) If the Resistance is 1K-1000K, then do a wiring check between the E1-2 Shelf and the Temperature Sensor, M21602 as follows (WDM 21-61-17):

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E1-2 SHELF DM21631AD

pin E3 pin 1
pin E4 pin 2

TEMP SENSOR DM21602

<1> If you find a problem with the wiring, then do these steps:

<a> Repair the wiring.

 Re-connect the connector DM21602 to the Temperature Sensor, M21602.

<c> Re-install the Left CTC, M21631. This is the task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

<d> Do the Repair Confirmation at the end of this task.

(b) If the Resistance at connector DM21631AD is 1K-1000K Ohms, then do these steps:

1) Install a new Left CTC, M21631. This is the task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

2) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the MAT shows NOT ACTIVE for the maintenance message, then you corrected the problem.
- (2) If the MAT shows ACTIVE for the maintenance message, then continue the Fault Isolation Procedure at the subsequent step.

END OF TASK

855. Zone Duct Temperature Sensor 2 (Flight Deck) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22401.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left Cabin Temperature Controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins F3 and F4 of connector DM21631AA at the E1-2 shelf (WDM 21-61-17).
- (3) If the resistance at connector DM21631AA is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21603 from the flight deck zone duct temperature sensor 2, M21603.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21603 (WDM 21-61-17).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21603.

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These are the tasks:

Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.

- 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21603 at the temperature sensor, M21603 (WDM 21-61-17):

DM21631AA	DM21603
pin F3	pin 1
pin F4	pin 2

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21603 to the temperature sensor, M21603.
 - c) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21631AA is 1k-1000K ohms, then do these steps:
 - (a) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

856. Zone Duct Temperature Sensor 1 (Zone A) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22302.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left Cabin Temperature Controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins F3 and F4 of connector DM21631AD at the E1-2 shelf (WDM 21-61-21).
- (3) If the resistance at connector DM21631AD is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21604 from the zone A duct temperature sensor 1, M21604.

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- (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21604 (WDM 21-61-21).
- (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21604.
These are the tasks:
Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.
 - 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21604 at the temperature sensor, M21604 (WDM 21-61-21):

DM21631AD	DM21604
pin F3	pin 1
pin F4	pin 2
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21604 to the temperature sensor, M21604.
 - c) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21631AD is 1k-1000K ohms, then do these steps:
 - (a) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

857. Zone Duct Temperature Sensor 2 (Zone A) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22402.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Remove the left Cabin Temperature Controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins E3 and E4 of connector DM21631AA at the E1-2 shelf (WDM 21-61-21).
- (3) If the resistance at connector DM21631AA is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21606 from the zone A duct temperature sensor 2, M21606.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21606 (WDM 21-61-21).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21606.
These are the tasks:
Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.
 - 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21606 at the temperature sensor, M21606 (WDM 21-61-21):

DM21631AA		DM21606
pin F3	.....	pin 1
pin F4	.....	pin 2
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21606 to the temperature sensor, M21606.
 - c) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21631AA is 1k-1000K ohms, then do these steps:
 - (a) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

858. Zone Duct Temperature Sensor 1 (Zone B) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22303.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right Cabin Temperature Controller (CTC), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins E3 and E4 of connector DM21632AD at the E2-2 shelf (WDM 21-61-23).
- (3) If the resistance at connector DM21632AD is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21608 from the zone B duct temperature sensor 1, M21608.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21608 (WDM 21-61-23).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21608.
These are the tasks:
Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.
 - 2) Re-install the right CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21608 at the temperature sensor, M21608 (WDM 21-61-23):

DM21632AD	DM21608
pin E3	pin 1
pin E4	pin 2

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21608 to the temperature sensor, M21608.
 - c) Re-install the right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21632AD is 1k-1000K ohms, then do these steps:
 - (a) Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

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859. Zone Duct Temperature Sensor 2 (Zone B) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22403.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right Cabin Temperature Controller (CTC), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins F3 and F4 of connector DM21632AD at the E2-2 shelf (WDM 21-61-23).
- (3) If the resistance at connector DM21632AD is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21610 from the zone B duct temperature sensor 2, M21610.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21610 (WDM 21-61-23).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21610.
These are the tasks:
Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.
 - (d) Re-install the right CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (e) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21610 at the temperature sensor, M21610 (WDM 21-61-23):

DM21632AD	DM21610
pin F3	pin 1
pin F4	pin 2

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21610 to the temperature sensor, M21610.
 - c) Re-install the right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21632AD is 1k-1000K ohms, then do these steps:

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- (a) Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

860. Zone Duct Temperature Sensor 1 (Zone C) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22304.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left Cabin Temperature Controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins G3 and G4 of connector DM21631AD at the E1-2 shelf (WDM 21-61-25).
- (3) If the resistance at connector DM21631AD is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21612 from the zone C duct temperature sensor 1, M21612.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21612 (WDM 21-61-25).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21612.
These are the tasks:
Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.
 - 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21612 at the temperature sensor, M21612 (WDM 21-61-25):

DM21631AD

DM21612

pin G3	.....	pin 1
pin G4	.....	pin 2

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21612 to the temperature sensor, M21612.

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- c) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21631AD is 1k-1000K ohms, then do these steps:
 - (a) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

———— **END OF TASK** ————

861. Zone Duct Temperature Sensor 2 (Zone C) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22404.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left Cabin Temperature Controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins D3 and D4 of connector DM21631AA at the E1-2 shelf (WDM 21-61-25).
- (3) If the resistance at connector DM21631AA is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21614 from the zone C duct temperature sensor 2, M21614.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21614 (WDM 21-61-25).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21614.
These are the tasks:
Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.
 - 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21614 at the temperature sensor, M21614 (WDM 21-61-25):

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DM21631AA

pin D3 pin 1
pin D4 pin 2

DM21614

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21614 to the temperature sensor, M21614.
 - c) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21631AA is 1k-1000K ohms, then do these steps:
 - (a) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

862. Zone Duct Temperature Sensor 1 (Zone D) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22305.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right Cabin Temperature Controller (CTC), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins F3 and F4 of connector DM21632AD at the E2-2 shelf (WDM 21-61-27).
- (3) If the resistance at connector DM21632AD is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21616 from the zone D duct temperature sensor 1, M21616.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21616 (WDM 21-61-27).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21616.
These are the tasks:
Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.
 - 2) Re-install the right CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21616 at the temperature sensor, M21616 (WDM 21-61-27):

DM21632AD		DM21616
pin F3	.....	pin 1
pin F4	.....	pin 2
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21616 to the temperature sensor, M21616.
 - c) Re-install the right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21632AD is 1k-1000K ohms, then do these steps:
 - (a) Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

863. Zone Duct Temperature Sensor 2 (Zone D) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22405.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right Cabin Temperature Controller (CTC), M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins E3 and E4 of connector DM21632AD at the E2-2 shelf (WDM 21-61-27).
- (3) If the resistance at connector DM21632AD is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21618 from the zone D duct temperature sensor 2, M21618.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21618 (WDM 21-61-27).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21618.

These are the tasks:

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Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.

- 2) Re-install the right CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21618 at the temperature sensor, M21618 (WDM 21-61-27):

DM21632AD		DM21618
pin E3	.....	pin 1
pin E4	.....	pin 2
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21618 to the temperature sensor, M21618.
 - c) Re-install the right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21632AD is 1k-1000K ohms, then do these steps:
 - (a) Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

864. Zone Duct Temperature Sensor 1 (Zone E) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22306.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the left Cabin Temperature Controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins H3 and H4 of connector DM21631AD at the E1-2 shelf (WDM 21-61-31).
- (3) If the resistance at connector DM21631AD is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21620 from the zone E duct temperature sensor 1, M21620.

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- (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21620 (WDM 21-61-31).
- (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21620.
These are the tasks:
Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.
 - 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DM21620 at the temperature sensor, M21620 (WDM 21-61-31):

DM21631AD	DM21620
pin H3	pin 1
pin H4	pin 2
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21620 to the temperature sensor, M21620.
 - c) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21631AD is 1k-1000K ohms, then do these steps:
 - (a) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

865. Zone Duct Temperature Sensor 2 (Zone E) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22406.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

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C. Fault Isolation Procedure

- (1) Remove the left Cabin Temperature Controller (CTC), M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins C3 and C4 of connector DM21631AA at the E1-2 shelf (WDM 21-61-31).
- (3) If the resistance at connector DM21631AA is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21622 from the zone E duct temperature sensor 2, M21622.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21622 (WDM 21-61-31).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21622.
These are the tasks:
Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.
 - 2) Re-install the left CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DM21622 at the temperature sensor, M21622 (WDM 21-61-31):

DM21631AA		DM21622
pin C3	.....	pin 1
pin C4	.....	pin 2
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM21622 to the temperature sensor, M21622.
 - c) Re-install the left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) If the resistance at connector DM21631AA is 1k-1000K ohms, then do these steps:
 - (a) Install a new left CTC, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

866. Zone Duct Temperature Sensor 1 (Zone F) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22307.

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B. Description

- (1) The Zone F Duct Temperature Sensor 1 signal is out of range.

C. Possible Causes

ARO 001-013 PRE SB 777-21-0174

- (1) Zone F Duct Temperature Sensor 1, M21624

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- (2) Zone F Duct Temperature Sensor 1, M21641

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- (3) Wiring
- (4) Right Cabin Temperature Controller, M21632

D. Related Data

- (1) WDM 21-61-33

E. Initial Evaluation

- (1) If the Maintenance Access Terminal (MAT) shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

- (1) Remove the Right CTC, M21632. This is the task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins G3 and G4 of connector DM21632AD at the E2-2 shelf (WDM 21-61-33).
- (3) If the resistance at connector DM21632AD is not 1K-1000K ohms, then do these steps:

ARO 001-013 PRE SB 777-21-0174

- (a) Disconnect connector DM21624 from the Zone F Duct Temperature Sensor 1, M21624.

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- (b) Disconnect connector DM21641 from the Zone F Duct Temperature Sensor 1, M21641.

ARO 001-013 PRE SB 777-21-0174

- (c) Measure the resistance between pins 1 and 2 on the Zone F Duct Temperature Sensor 1, M21624 (WDM 21-61-33).

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- (d) Measure the resistance between pins 1 and 2 on the Zone F Duct Temperature Sensor 1, M21641 (WDM 21-61-33).

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- (e) If the resistance is not 1K-1000K ohms, then do these steps:

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ARO 001-013 PRE SB 777-21-0174

- 1) Replace the Zone F Duct Temperature Sensor 1, M21624. These are the tasks:
 - Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801
 - Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- 2) Replace the Zone F Duct Temperature Sensor 1, M21641. These are the tasks:
 - Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801
 - Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801

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- 3) Re-install the Right CTC. This is the task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (f) If the resistance is 1K-1000K, then do these steps:

ARO 001-013 PRE SB 777-21-0174

- 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21624 at the Zone F Duct Temperature Sensor 1, M21624 (WDM 21-61-33):

DM21632AD	DM21624
pin G3	pin 1
pin G4	pin 2

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- 2) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21641 at the Zone F Duct Temperature Sensor 1, M21641 (WDM 21-61-33):

DM21632AD	DM21641
pin G3	pin 1
pin G4	pin 2

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- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.

ARO 001-013 PRE SB 777-21-0174

- b) Re-connect the connector DM21624 to the Zone F Duct Temperature Sensor 1, M21624.

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- c) Re-connect the connector DM21641 to the Zone F Duct Temperature Sensor 1, M21641.

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- d) Re-install the Right CTC, M21632. This is the task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- e) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (4) If the resistance at connector DM21632AD is 1K-1000K ohms, then do these steps:
 - (a) Install a new Right CTC, M21632. This is the task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.

————— END OF TASK —————

867. Zone Duct Temperature Sensor 2 (Zone F) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22407.

B. Description

- (1) The Zone F Duct Temperature Sensor 2 signal is out of range.

C. Possible Causes

ARO 001-013 PRE SB 777-21-0174

- (1) Zone F Duct Temperature Sensor 2, M21626

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- (2) Zone F Duct Temperature Sensor 2, M21642

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- (3) Wiring
- (4) Right CTC, M21632

D. Related Data

- (1) WDM 21-61-33

E. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent problem.

F. Fault Isolation Procedure

- (1) Remove the Right CTC, M21632. This is the task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins D3 and D4 of connector DM21632AA at the E2-2 shelf (WDM 21-61-33).
- (3) If the resistance at connector DM21632AA is not 1K-1000K ohms, then do these steps:

ARO 001-013 PRE SB 777-21-0174

- (a) Disconnect connector DM21626 from the Zone F Duct Temperature Sensor 2, M21626.

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ARO 014-999; ARO 001-013 POST SB 777-21-0174

- (b) Disconnect connector DM21642 from the Zone F Duct Temperature Sensor 2, M21642.

ARO 001-013 PRE SB 777-21-0174

- (c) Measure the resistance between pins 1 and 2 on the Zone F Duct Temperature Sensor 2, M21626 (WDM 21-61-33).

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- (d) Measure the resistance between pins 1 and 2 on the Zone F Duct Temperature Sensor 2, M21642 (WDM 21-61-33).

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- (e) If the resistance is not 1K-1000K ohms, then do these steps:

ARO 001-013 PRE SB 777-21-0174

- 1) Replace the Zone F Duct Temperature Sensor 2, M21626. These are the tasks:
- Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801
 - Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- 2) Replace the Zone F Duct Temperature Sensor 2, M21642. These are the tasks:
- Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801
 - Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801

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- 3) Re-install the Right CTC. This is the task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (f) If the resistance is 1K-1000K, then do these steps:

ARO 001-013 PRE SB 777-21-0174

- 1) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21626 at the Zone F Duct Temperature Sensor 2, M21626 (WDM 21-61-33):

DM21632AA	DM21626
pin D3	pin 1
pin D4	pin 2

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- 2) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21642 at the Zone F Duct Temperature Sensor 2, M21642 (WDM 21-61-33):

DM21632AA	DM21642
pin D3	pin 1
pin D4	pin 2

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- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.

ARO 001-013 PRE SB 777-21-0174

- b) Re-connect the connector DM21626 to the Zone F Duct Temperature Sensor 2, M21626.

ARO 014-999; ARO 001-013 POST SB 777-21-0174

- c) Re-connect the connector DM21642 to the Zone F Duct Temperature Sensor 2, M21642.

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- d) Re-install the Right CTC, M21632. This is the task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - e) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.
- (4) If the resistance at connector DM21632AA is 1K-1000K ohms, then do these steps:
 - (a) Install a new Right CTC, M21632. This is the task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the problem.

————— **END OF TASK** —————

868. Cabin Temperature Controller (CTC) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-25011, 21-25012, 21-25013, 21-25014, 21-28801, 21-28802.

B. Description

- (1) 21-25011: CTC-L has an internal fault, no power or incompatible software (CH-1).
- (2) 21-25012: CTC-R has an internal fault, no power or incompatible software (CH-1).
- (3) 21-25013: CTC-L has an internal fault, no power or incompatible software (CH-2).
- (4) 21-25014: CTC-R has an internal fault, no power or incompatible software (CH-2).
- (5) 21-28801: CTC-L has no output on any Bus.
- (6) 21-28802: CTC-R has no output on any Bus.

C. Possible Causes

- (1) Incompatible CTC Software
- (2) Maintenance Messages 21-25011, 21-25013:
 - (a) ARINC 629 CTC Coupler:
 - 1) Left CH-1: B21631
 - 2) Left CH-2: B21632
 - (b) CTC-L, M21631 (P110)
 - (c) Computing and Communications Unit (CCU), M244502 in P110 (for MM 21-25013)
 - (d) Wiring
- (3) Maintenance Messages 21-25012, 21-25014:

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- (a) ARINC 629 CTC Coupler:
 - 1) Right CH-1: B21634
 - 2) Right CH-2: B21633
- (b) CTC-R, M21632 (P210)
- (c) Computing and Communications Unit (CCU), M244506 in P110 (for MM 21-25014)
- (4) Maintenance Message 21-28801:
 - (a) CTC-L, M21631 (P110)
- (5) Maintenance Message 21-28802:
 - (a) CTC-R, M21632 (P210)
 - (b) Wiring

D. Related Data

- (1) WDM 21-61-11
- (2) WDM 21-61-12

E. Circuit Breakers

- (1) These are the circuit breakers related to the CTC-L Maintenance Messages:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	2	C21431	L CTC CHAN 1 (AC)
H	3	C21433	L CTC CHAN 2 (AC)
H	24	C21647	L CTC CHAN 2 (DC)
H	25	C21641	L CTC CHAN 1 (DC)

- (2) These are the circuit breakers related to the CTC-R Maintenance Messages:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	C21434	R CTC CHAN 2 (AC)
G	28	C21432	R CTC CHAN 1 (AC)
H	2	C21642	R CTC CHAN 1 (DC)
H	3	C21648	R CTC CHAN 2 (DC)

F. Initial Evaluation

- (1) Reinstall the software for the applicable Left (Right) CTC, M21631 (M21632). This is the task: Cabin Temperature Controller (CTC) Software Installation, AMM TASK 21-61-01-400-803.
NOTE: Make sure that the OPC and OPS Software in Channel 1 and Channel 2 are the same version.
- (2) Push the AIR COND RESET button on the AIR CONDITIONING Module.
- (3) On the MAT do the applicable Ground Test (How to Do a Ground Test, AMM TASK 45-10-00-740-819:
 - (a) 21 Cabin Temperature Control System, OPERATIONAL TEST
 - Left Cabin Temperature Controller
 - Right Cabin Temperature Controller
 - 1) If the maintenance message does not show on the Ground Test Display, you corrected the fault.

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- 2) If the maintenance message still shows on the Ground Test Display, then:
 - a) For Maintenance Messages 21-25011, 21-25012, 21-25013 or 21-25014, do the “Fault Isolation Procedure - CTC Internal Fault or No Power” below (SUBTASK 21-61-00-810-009).
 - b) For Maintenance Messages 21-28801 or 21-28802, do the “Fault Isolation Procedure - CTC No Output on any Bus” below (SUBTASK 21-61-00-810-010).

G. Fault Isolation Procedure - CTC Internal Fault or No Power

- (1) Replace the applicable Left (Right) Cabin Temperature Controller, M21631 (M21632). These are the tasks:
 - Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801
 - Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) Do the Repair Confirmation at the end of this task.

H. Fault Isolation Procedure - CTC Internal Fault or No Power

- (1) Do a check of the applicable Left (Right) Computing and Communications Unit (CCU), M24502 (M24506) in the P110 (P210) Panel.

This is the task:

Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
- (a) Do the Repair Confirmation at the end of this task.
- (2) For the maintenance messages indicated in the table below, replace the applicable ARINC 629 Coupler. These are the tasks:
 - ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801
 - ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801

Maintenance Message	Cabin Temperature Controller	ARINC 629 Coupler	WDM Reference
21-25011	L CTC - CH 1	B21631	WDM 21-61-11
21-25012	R CTC - CH 1	B21634	WDM 21-61-12
21-25013	L CTC - CH 2	B21632	WDM 21-61-11
21-25014	R CTC - CH 2	B21633	WDM 21-61-12

- (a) Do the Repair Confirmation at the end of this task.
- (3) If the fault is related to the right CTC, do this check of the wiring from the circuit breakers to the Right Cabin Temperature Controller:
 - (a) Remove the right cabin temperature controller M21632. To remove the right cabin temperature controller, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Do a wiring check between these pins at the E2-2 shelf and the circuit breakers (WDM 21-61-12):

DM21632AF **C21642**
pin 6 pin 2

DM21632AF **C21432**
pin 27 pin 2

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J. Repair Confirmation

- (1) Push the AIR COND RESET button on the AIR CONDITIONING Module.
- (2) On the MAT do the applicable Ground Test (How to Do a Ground Test, AMM TASK 45-10-00-740-819:
 - (a) 21 Cabin Temperature Control System, OPERATIONAL TEST
 - Left Cabin Temperature Controller
 - Right Cabin Temperature Controller
 - 1) If the maintenance message does not show on the Ground Test Display, you corrected the fault.
 - 2) If the maintenance message still shows on the Ground Test Display, then continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

876. CTC L CH1 ARINC Communication Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22500.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the ARINC 629 coupler, B21631, in the P111 panel.
These are the tasks:
ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the CTC-L to its coupler:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21631 from the coupler, B21631 (WDM 21-61-11).

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- (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD	DB21631
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

877. CTC L CH2 ARINC Communication Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22501.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the ARINC 629 coupler, B21632, in the P111 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
- ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE: This coupler connects the CTC-L to the Systems 629 Bus-R.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the CTC-L to its coupler:

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- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DB21632 from the coupler, B21632 (WDM 21-61-11).
- (c) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DB21632 at the P111 panel (WDM 21-61-11):

DM21631AA	DB21632
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21632.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

878. CTC R CH1 ARINC Communication Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-22502, 21-22503.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the ARINC 629 coupler, B21634, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the CTC-R to its coupler:
 - (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21634 from the coupler, B21634 (WDM 21-61-12).
 - (c) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DB21634 at the P211 panel (WDM 21-61-12):

DM21632AD	DB21634
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21634.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

879. CTC R CH2 ARINC Communication Problems - Fault Isolation

A. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

B. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the ARINC 629 coupler, B21633, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-L.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring from the CTC-R to its coupler:
 - (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21633 from the coupler, B21633 (WDM 21-61-12).
 - (c) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DB21633 at the P211 panel (WDM 21-61-12):

DM21632AA	DB21633
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21633.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

880. Flight Deck Temperature Control (AUTO) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-28060.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
 - (b) If the MAT shows ACTIVE for the maintenance message while the selector is in one or more of the positions specified above, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in all the positions specified above, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the flight deck temperature selector, M21314S3.

These are the tasks:

Zone Temperature Selector Removal, AMM TASK 21-61-05-000-801,

Zone Temperature Selector Installation, AMM TASK 21-61-05-400-801.

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- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message while the selector is in one or more of the positions specified above, then continue.
- (2) Do this check of the wiring from the flight deck temperature selector to the left overhead panel cardfile (OPCF-L):
 - (a) Remove the air conditioning module, M21314, from the P5 panel, but do not disconnect its electrical connectors (WDM 21-61-17).
 - (b) Disconnect connector M21314DS3 from the flight deck temperature selector.
 - (c) Disconnect connector DM23117L from the OPCF-L, M23117.
 - (d) Do a wiring check between these pins of connector M21314DS3 at the pilot's overhead panel, P5, and connector DM23117L at the maintenance panel, P61 (WDM 21-61-17).

M21314DS3

pin F	.....	pin A8
pin E	.....	pin A9
pin D	.....	pin A10
pin C	.....	pin A11
pin B	.....	pin A12
pin G	.....	pin A13
pin H	.....	pin A19
pin J	.....	pin A14
pin K	.....	pin A15
pin L	.....	pin A16
pin M	.....	pin A17
pin N	.....	pin A18

DM23117L

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M21314DS3 and DM23117L.
 - 3) Re-install the air conditioning module, M21314.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M21314DS3 to the flight deck temperature selector, M21314S3.
- (h) Re-install the air conditioning module, M21314.
- (3) Replace the OPCF-L chassis, M23117.

These are the tasks:

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Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the FLT DECK TEMP selector to each of these positions: AUTO, AUTO C, AUTO W, MAN, MAN C, and MAN W.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in all the positions specified above, you corrected the fault.

————— END OF TASK —————

881. Cabin Temperature Controller Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23080.

B. Fault Isolation Procedure

- (1) Replace the applicable left (right) cabin temperature controller M21631 (M21632).

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Push the AIR COND RESET button on the AIR CONDITIONING module.
- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left (Right) Trim Air System.
- (c) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

882. CTC-L or CTC-R Using Default Data From ELMS P110 or P210 Panel Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-25110, 21-25111, 21-25112, 21-25113, 21-25210, 21-25211, 21-25212, 21-25213.

B. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Present Leg Faults display on the MAT.
 - (a) If a maintenance message related to the applicable ELMS P110 or ELMS P210 shows in Present Leg Faults, then do these steps:
 - 1) Find the message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.

————— END OF TASK —————

883. CTC-L or CTC-R Using Default Data From ASCPC-L or ASCPC-R Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-25501, 21-25502, 21-25503, 21-25504, 21-25506, 21-25507, 21-25508, 21-25509.

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B. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Present Leg Faults display on the MAT.
 - (a) If a maintenance message related to the applicable ASCPC-L or ASCPC-R shows in Present Leg Faults, then do these steps:
 - 1) Find the message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.

————— END OF TASK —————

884. CTC-L or CTC-R Using Default Data From Left or Right Cardfile Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-25511, 21-25512, 21-25513, 21-25514, 21-25516, 21-25517, 21-25518, 21-25519.

B. General

- (1) Multiple levels of redundancy are built into the system. Each channel of the CTC can communicate with each cardfile. A loss of communication with one channel does not degrade CTC performance
- (2) When the data from a cardfile is not valid, the most recent valid value or a safe default value is used by the channel reporting the fault. If valid data from another channel is available, then the alternate data is used.
- (3) Maintenance messages 21-25511 through 21-25519 can show when data from the Left Cardfile, P85 or Right Cardfile, P84 is found to be invalid by one of the CTC channels. A maintenance message indicates a loss of one level of redundancy.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Present Leg Faults display on the MAT.
 - (a) If other maintenance messages related to the applicable Left Cardfile or Right Cardfile show in Present Leg Faults, then do these steps:
 - 1) Find the message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
- (2) A nuisance fault can be cleared by removing power from the cardfile. Do the steps that follow to remove power from the right ECS Miscellaneous card:
 - (a) Put the A18 S4 power switch on the P84 right system cardfile to the OFF position.
 - (b) Put the A18 S4 power switch on the P84 right system cardfile to the ON position.
 - (c) If the MAT shows NOT ACTIVE for the message (or if the message does not show), you corrected the fault.
 - (d) If the MAT shows ACTIVE for the message, then continue.
- (3) A nuisance fault can be cleared by removing power from the cardfile. Do the steps that follow to remove power from the left ECS Miscellaneous card:
 - (a) Put the A18 S4 power switch on the P85 left system cardfile to the OFF position.
 - (b) Put the A18 S4 power switch on the P85 left system cardfile to the ON position.
 - (c) If the MAT shows NOT ACTIVE for the message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

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885. CSCP/CACP Zone Temperature Display - Shows Fault Message - Fault Isolation

A. Fault Isolation Procedure

- (1) Push the AIR button on the Display Select Panel on the flight deck.
NOTE: This shows the AIR synoptic page on the applicable L INBD, LWR CTR, or R INBD display unit (DU).
 - (a) If the target or actual temperatures do not show on the AIR synoptic page, then do these steps:
 - 1) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - 2) If a maintenance message related to the cabin temperature control system shows in Existing Faults, then do these steps:
 - a) Find the message in the applicable FIM Maintenance Message Index.
 - b) Do the specified task for the maintenance message.
 - (b) If the target and actual temperatures show on the AIR synoptic page, then continue.
- (2) Touch these selections on the Cabin System Control Panel (CSCP) to do the QUICK TEST:
 - (a) CABIN MAINTENANCE
 - (b) CABIN TESTS
 - (c) START QUICK TEST
 - (d) CONTINUE
- (3) If the QUICK TEST FAULTS REVIEW screen shows, touch these selections on the CSCP to show the maintenance messages:
 - (a) ALL UNITS
 - (b) CONTINUE
 - (c) For each maintenance message that shows in the Quick Test Fault Results, do these steps:
 - 1) Find the maintenance messages number in the FIM 23-Maintenance Message Index.
 - 2) Do the specified fault isolation task.

————— **END OF TASK** —————

886. Flight Deck Duct Temperature Sensor Miscompare - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22400.

B. Initial Evaluation

- (1) Make these selections on the MAT:
 - (a) ONBOARD MAINTENANCE
 - (b) EXTENDED MAINTENANCE
 - (c) EXISTING FAULTS
 - (d) 21 Cabin Temperature Control System.
- (2) Look at the fault display on the MAT.
- (3) If the MAT shows LATCHED for the maintenance message, then push the AIR COND RESET switch on the P5 panel.

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- (4) Look at the fault display on the MAT.
- (5) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (6) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the flight deck duct temperature sensor 1, M21602.

These are the tasks:

Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,

Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.

- (a) Look at the fault display on the MAT.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message then continue.
- (2) Replace the flight deck duct temperature sensor 2, M21603.
These are the tasks:
Zone Duct Temperature Sensor Removal, AMM TASK 21-61-03-000-801,
Zone Duct Temperature Sensor Installation, AMM TASK 21-61-03-400-801.
 - (a) Look at the fault display on the MAT.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message then continue.
- (3) Remove the left Cabin Temperature Controller (CTC), M21631, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (4) Disconnect connector DM21602 from the flight deck duct temperature sensor 1, M21602.
- (5) Disconnect connector DM21603 from the flight deck duct temperature sensor 2, M21603.
- (6) Do a check of the wiring between these pins of connector DM21631AD at the E1-2 shelf and connector DM21602 at the temperature sensor, M21602 (WDM 21-61-17):

DM21631AD	DM21602
pin E3	pin 1
pin E4	pin 2

- (7) Do a check of the wiring between these pins of connector DM21631AA at the E1-2 shelf and connector DM21603 at the temperature sensor, M21603 (WDM 21-61-17):

DM21631AA	DM21603
pin F3	pin 1
pin F4	pin 2

- (8) If you find a problem with the wiring, then do these steps:
 - (a) Repair the wiring.
 - (b) Reconnect the connector DM21602 to the temperature sensor, M21602.
 - (c) Reconnect the connector DM21603 to the temperature sensor, M21603.

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- (d) Reinstall the left CTC, M21631, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (e) Look at the fault display on the MAT.
 - (f) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (9) If you do not find a problem with the wiring, then do these steps:
- (a) Reconnect the connector DM21602 to the temperature sensor, M21602.
 - (b) Reconnect the connector DM21603 to the temperature sensor, M21603.
 - (c) Install a new left CTC, M21631, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (d) Look at the fault display on the MAT.
 - (e) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

————— END OF TASK —————

887. Trim Air Modulating Valve (Forward Cargo Zone) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-20020.

B. Initial Evaluation

- (1) If the Forward Cargo Zone target temperature indication on the air synoptic page is blank, then do the Fault Isolation Procedure below.

NOTE: A blank target temperature indication on the Air Synoptic display can be caused by a failure of the Trim Air Modulation valve. The CTC does not provide target temperature information to the Air Synoptic display if the Trim Air Modulation valve fails to operate.

- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for the maintenance message, then do these steps:
- (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right Trim Air System.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the forward cargo trim air modulating valve, V21624.

These are the tasks:

Zone Trim Air Modulating Valves Removal, AMM TASK 21-61-02-000-801,

Zone Trim Air Modulating Valves Installation, AMM TASK 21-61-02-400-801.

- (a) Push the AIR COND RESET switch on the P5 panel.
- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right Trim Air System.

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- (c) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the right cabin temperature controller (CTC-R), M21632.
These are the tasks:
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right Trim Air System.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message does show on the ground test display, then continue.
- (3) Do this check of the wiring from the CTC-R to the forward cargo trim air modulating valve:
 - (a) Remove the CTC-R, M21632, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DV21624 from the forward cargo trim air modulating valve:
 - (c) Do a wiring check between these pins of connector DV21624 at the valve and connector DM21632AE at the E2-2 shelf:

DV21624

pin 1	.....	pin F10
pin 2	.....	pin H10
pin 3	.....	pin G10
pin 4	.....	pin H5
pin 6	.....	pin H4
pin 8	.....	pin H7
pin 10	.....	pin H6

DM21632AE

- (d) Do a wiring check between these pins of connector DV21624 at the valve and connector DM21632AB at the E2-2 shelf:

DV21624

pin 1	.....	pin E10
pin 2	.....	pin C10
pin 3	.....	pin D10
pin 4	.....	pin C5
pin 6	.....	pin C4
pin 8	.....	pin C7
pin 10	.....	pin C6

DM21632AB

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Reconnect connector DV21624.
 - 3) Reinstall the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- 4) Push the AIR COND RESET switch on the P5 panel.
- 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right Trim Air System.
- 6) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— END OF TASK —————

888. Forward Cargo Temperature Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 23-43290, 23-43990.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the FWD CARGO A/C temperature selector to the C position.
 - (b) Look at the maintenance message display on the MAT.
 - (c) Set the FWD CARGO A/C temperature selector to the W position.
 - (d) Look at the maintenance message display on the MAT.
 - (e) If the MAT shows ACTIVE for the maintenance message when the selector is in the C or the W position, then do the Fault Isolation Procedure below.
 - (f) If the MAT shows NOT ACTIVE for the maintenance message when the selector is in the C and the W positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the forward cargo temperature selector, M21315S1.

These are the tasks:

Forward Cargo Temperature Selector Removal, AMM TASK 21-61-07-000-801,

Forward Cargo Temperature Selector Installation, AMM TASK 21-61-07-400-801.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the FWD CARGO temperature selector first to C, then to W.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) when the selector is in the C and the W positions, then you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message when the selector is in the C or the W position, then continue.
- (2) Do this check of the wiring from the forward cargo temperature selector to the right overhead panel cardfile (OPCF-R):
 - (a) Remove the miscellaneous switching module, M21315, from the forward overhead panel, P5, but do not disconnect the electrical connectors (WDM 21-61-16).
 - (b) Disconnect connector M21315DS1 from the forward cargo temperature selector.
 - (c) Disconnect connector DM23217L from the OPCF-R M23217.
 - (d) Do a wiring check between these pins of connector M21315DS1 at the pilot's overhead panel, P5, and connector DM23217M at the maintenance panel, P61 (WDM 21-61-16):

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M21315DS1	DM23217M
pin F	pin B9
pin E	pin B10
pin D	pin B11
pin C	pin B12
pin B	pin B13
pin G	pin B14
pin H	pin B20
pin J	pin B15
pin K	pin B16
pin L	pin B17
pin M	pin B18
pin N	pin B19

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Reconnect connectors M21315DS1 and DM23217M.
 - 3) Reinstall the miscellaneous switching module, M21315.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the FWD CARGO temperature selector first to C, then to W.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) when the selector is in the C and the W positions, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Reconnect connector M21315DS1 to the cabin temperature selector, M21315S1.
- (h) Reinstall the miscellaneous switching module, M21315.
- (3) Replace the applicable Overhead Panel Interface Cards as follows:
- (a) Do this task: Overhead Panel Interface Card (OPIC) Removal, AMM TASK 23-93-02-000-801.
 - (b) Do this task: Overhead Panel Interface Card (OPIC) Installation, AMM TASK 23-93-02-400-801.
 - (c) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the FWD CARGO temperature selector first to C, then to W.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) when the selector is in the C and the W positions, then you corrected the fault.
 - 3) If the MAT shows ACTIVE for the maintenance message when the selector is in the C or the W position, then continue.
- (4) Replace the OPCF-R chassis, M23217.
- These are the tasks:
- Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
- (a) Monitor the maintenance message on the MAT while you do these steps:

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- 1) Set the FWD CARGO temperature selector first to C, then to W.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) when the selector is in the C and the W positions, then you corrected the fault.

————— **END OF TASK** —————

889. Forward Cargo Duct Temperature Sensor 1 Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22320.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right Cabin Temperature Controller (CTC), M21632, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins H3 and H4 of connector DM21632AD at the E2-2 shelf (WDM 21-61-35).
- (3) If the resistance at connector DM21632AD is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21638 from the forward cargo duct temperature sensor 1, M21638.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21638 (WDM 21-61-35).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21638.
These are the tasks:
Forward Cargo Air Conditioning (FCAC) Duct Temperature Sensor Removal, AMM TASK 21-61-09-000-801,
Forward Cargo Air Conditioning (FCAC) Duct Temperature Sensor Installation, AMM TASK 21-61-09-400-801.
 - 2) Reinstall the right CTC, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21638 at the temperature sensor, M21638 (WDM 21-61-35):

DM21632AD

pin H3	.....	pin 1
pin H4	.....	pin 2

DM21638

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.

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- b) Reconnect the connector DM21638 to the temperature sensor, M21638.
 - c) Reinstall the right CTC, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (4) If the resistance at connector DM21632AD is 1k-1000K ohms, then do these steps:
- (a) Install a new right CTC, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

————— **END OF TASK** —————

890. Forward Cargo Duct Temperature Sensor 2 Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22420.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right Cabin Temperature Controller (CTC), M21632, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins C3 and C4 of connector DM21632AA at the E2-2 shelf (WDM 21-61-35).
- (3) If the resistance at connector DM21632AA is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21639 from the forward cargo duct temperature sensor 2, M21639.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21639 (WDM 21-61-35).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21639.These are the tasks:
Forward Cargo Air Conditioning (FCAC) Duct Temperature Sensor Removal, AMM TASK 21-61-09-000-801,
Forward Cargo Air Conditioning (FCAC) Duct Temperature Sensor Installation, AMM TASK 21-61-09-400-801.
 - 2) Reinstall the right CTC, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:

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- 1) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21639 at the temperature sensor, M21639 (WDM 21-61-35):

DM21632AA	DM21639
pin C3	pin 1
pin C4	pin 2

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reconnect the connector DM21639 to the temperature sensor, M21639.
 - c) Reinstall the right CTC, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (4) If the resistance at connector DM21632AA is 1k-1000K ohms, then do these steps:
 - (a) Install a new right CTC, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

————— **END OF TASK** —————

891. Forward Cargo Temperature Sensor 1 Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22120.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right Cabin Temperature Controller (CTC), M21632, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins G5 and G6 of connector DM21632AD at the E2-2 shelf (WDM 21-61-35).
- (3) If the resistance at connector DM21632AD is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21637 from the forward cargo temperature sensor 1, M21637.
 - (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21637 (WDM 21-61-35).
 - (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21637.

These are the tasks:

Forward Cargo Compartment Temperature Sensor Removal, AMM
TASK 21-61-08-000-801,

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Forward Cargo Compartment Temperature Sensor Installation, AMM
TASK 21-61-08-400-801.

- 2) Reinstall the right CTC, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DM21637 at the temperature sensor, M21637 (WDM 21-61-35):

DM21632AD	DM21637
pin G5	pin 1
pin G6	pin 2
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reconnect the connector DM21637 to the temperature sensor, M21637.
 - c) Reinstall the right CTC, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (4) If the resistance at connector DM21632AD is 1k-1000K ohms, then do these steps:
 - (a) Install a new right CTC, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

————— **END OF TASK** —————

892. Forward Cargo Temperature Sensor 2 Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22220.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Remove the right Cabin Temperature Controller (CTC), M21632, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (2) Measure the resistance between pins D5 and D6 of connector DM21632AA at the E2-2 shelf (WDM 21-61-35).
- (3) If the resistance at connector DM21632AA is not 1K-1000K ohms, then do these steps:
 - (a) Disconnect connector DM21636 from the forward cargo temperature sensor 2, M21636.

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- (b) Measure the resistance between pins 1 and 2 on the temperature sensor, M21636 (WDM 21-61-35).
- (c) If the resistance is not 1K-1000K ohms, then do these steps:
 - 1) Replace the temperature sensor, M21636.
These are the tasks:
Forward Cargo Compartment Temperature Sensor Removal, AMM TASK 21-61-08-000-801,
Forward Cargo Compartment Temperature Sensor Installation, AMM TASK 21-61-08-400-801.
 - 2) Reinstall the right CTC, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (d) If the resistance is 1K-1000K, then do these steps:
 - 1) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DM21636 at the temperature sensor, M21636 (WDM 21-61-35):

DM21632AA	DM21636
pin D5	pin 1
pin D6	pin 2
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Reconnect the connector DM21636 to the temperature sensor, M21636.
 - c) Reinstall the right CTC, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- (4) If the resistance at connector DM21632AA is 1k-1000K ohms, then do these steps:
 - (a) Install a new right CTC, M21632, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.

————— **END OF TASK** —————

895. Unable to Keep a Stable Cabin Temperature - No Maintenance Messages Present - Fault Isolation

A. Initial Evaluation

- (1) If the MAT shows ACTIVE for any chapter 21 maintenance messages, then do the fault isolation procedure for those messages before you continue.
- (2) Supply conditioned air to the passenger cabin. To supply conditioned air, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
- (3) Let the pack(s) operate for 2 minutes to let pack outlet temperature become stable.
- (4) Use a thermometer, STD-1122 to monitor the air temperature in the passenger cabin for 10 minutes:

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- (a) If the passenger cabin keeps a stable air temperature, then there was an intermittent fault.
- (b) If the air temperature is not stable, then do the Fault Isolation Procedure that follows.

B. Fault Isolation Procedure



CAUTION

MAKE SURE YOU REMOVE ELECTRICAL POWER FROM THE AIRPLANE. IF YOU SUPPLY ELECTRICAL POWER TO THE ELECTRICAL/ELECTRONIC EQUIPMENT WHEN THE LAVATORY/GALLEY VENTILATION SYSTEM IS NOT IN OPERATION, THE ELECTRICAL/ELECTRONIC EQUIPMENT CAN BECOME TOO HOT. THIS CAN CAUSE DAMAGE TO THE ELECTRICAL/ELECTRONIC EQUIPMENT.

- (1) Do this task: Remove Electrical Power, AMM TASK 24-22-00-860-806.
- (2) Do these steps to get access to the lavatory/galley ventilation fans:
 - (a) Open the bulk cargo door. To open the bulk cargo door, do this task: Open the Door, AMM TASK 52-36-00-860-801.
 - (b) Remove the left end wall at Station 2062 in the bulk cargo compartment. To remove the left end wall, do this task: Bulk Cargo Compartment Aft End Wall Removal, AMM TASK 25-52-19-000-801.
 - (c) Get access to the lavatory/galley ventilation fans.
- (3) Do these steps to do a check of the lavatory/galley ventilation fans:
 - (a) Check the two lavatory/galley ventilation fans for damaged or missing impeller blades.
 - (b) If the lavatory/galley ventilation fan has damaged or missing impeller blades, then do the steps that follow:
 - 1) Replace the lavatory/galley ventilation fan.
These are the tasks:
Lavatory/Galley Ventilation Fan Removal, AMM TASK 21-26-01-000-801,
Lavatory/Galley Ventilation Fan Installation, AMM TASK 21-26-01-400-801.
 - 2) Supply conditioned air to the passenger cabin. To supply conditioned air, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 3) Let the pack(s) operate for 2 minutes to let pack outlet temperature become stable.
 - 4) Use a thermometer, STD-1122 to monitor the air temperature in the passenger cabin for 10 minutes:
 - 5) If the passenger cabin keeps a stable air temperature, then you corrected the fault.
 - 6) If the air temperature is not stable, then continue.
 - (c) If the lavatory/galley ventilation fans are not damaged, then continue.
- (4) Do this task: Lavatory/Galley Ventilation Inlet Duct and Screen Cleaning, AMM TASK 21-26-02-000-802.
 - (a) Supply conditioned air to the passenger cabin. To supply conditioned air, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - (b) Let the pack(s) operate for 2 minutes to let pack outlet temperature become stable.
 - (c) Use a thermometer, STD-1122 to monitor the air temperature in the passenger cabin for 10 minutes:
 - (d) If the passenger cabin keeps a stable air temperature, then you corrected the fault.

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- (e) If the air temperature is not stable, then continue.
- (5) Do a check of each of the zone air temperature sensors in the passenger cabin:
 - (a) Remove the zone air temperature sensor. To remove the temperature sensor, do this task: Zone Air Temperature Sensor Removal, AMM TASK 21-61-04-000-801.
 - (b) Make sure the temperature sensor is clean. If the temperature sensor is not clean, do this task: Zone Air Temperature Sensor - Cleaning, AMM TASK 21-61-04-000-802
 - (c) Install the temperature sensor in the temperature sensor panel. To install the temperature sensor, do this task: Zone Air Temperature Sensor Installation, AMM TASK 21-61-04-400-801
 - (d) Make sure the hose is tightly attached to the temperature sensor panel and the lavatory/galley ventilation duct.
 - 1) Supply conditioned air to the passenger cabin. To supply conditioned air, do this task: Supply Conditioned Air with a Cooling Pack, AMM TASK 21-00-00-800-803.
 - 2) Let the pack(s) operate for 2 minutes to let pack outlet temperature become stable.
 - 3) Use a thermometer, STD-1122 to monitor the air temperature in the passenger cabin for 10 minutes:
 - 4) If the passenger cabin keeps a stable air temperature, then you corrected the fault.
 - 5) If the air temperature is not stable, then continue.

————— END OF TASK —————

896. Relay (Auto/Manual Control F/D Trim) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-50013.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for power to the auto/man control F/D trim relay, K21611, in the P110 panel:
 - (a) Remove the relay, K21611, in the P110 panel (WDM 21-61-17).
 - (b) Do a check for 28V DC at pin X1 of connector DK21611 at the P110 panel.
 - (c) If there is not 28V DC at pin X1 of connector DK21611, then do the steps that follow:
 - 1) Repair the wiring between pin X1 of DK21611 and pin 2 of the circuit breaker, C21655 (WDM 21-61-17):

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- a) Repair the wiring between pin X1 of DK21611 and pin 2 of this circuit breaker, C21655:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	19	C21655	F/D TRIM MOD VLV CTRL

- 2) Re-install the relay, K21611, in the P110 panel (WDM 21-61-17).
 - 3) Push the AIR COND RESET switch on the P5 panel.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (d) If there is 28V DC at pin X1 of connector DK21611, then continue.
- (2) Do a check for path to ground for the auto/man control F/D trim relay, K21611, in the P110 panel:
- (a) Disconnect the electrical connector DM24505B from the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Do a wiring check between pin X2 of connector DK21611 and pin 1 of DM24505B.
 - (c) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin X2 of connector DK21611 and pin 1 of DM24505B.
 - 2) Re-connect the electrical connector DM24505B to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the auto/man control F/D trim relay, K21611, in the P110 panel (WDM 21-61-17).
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 7) If the maintenance message shows on the ground test display, then continue.
 - (d) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Replace the auto/man control F/D trim relay, K21611 (WDM 21-61-17).
 - 2) Re-connect the electrical connector DM24505B to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the wiring between the relay, K21611, and the SIU, M24505:

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- (a) Disconnect the electrical connector DM24505C from the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the relay, K21611, in the P110 panel (WDM 21-61-17).
 - (c) Do a wiring check between pin D2 of connector DK21611 and pin 71 of DM24505C.
 - (d) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin D2 of connector DK21611 and pin 71 of DM24505C.
 - 2) Re-connect the electrical connector DM24505C to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the relay, K21611, in the P110 panel (WDM 21-61-17).
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 7) If the maintenance message shows on the ground test display, then continue.
 - (e) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Re-install the relay, K21611, in the P110 panel (WDM 21-61-17).
 - 2) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 3) Push the AIR COND RESET switch on the P5 panel.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the internal wiring in the P110 panel for the auto/man control F/D trim relay circuit (WDM 21-61-17).
- (a) Disconnect the electrical connectors DM24505A and DM24505C from the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the relay, K21611, in the P110 panel (WDM 21-61-17).
 - (c) Do a wiring check between pin D1 of connector DK21611 and pin 2 of the circuit breaker, C21443 (WDM 21-61-17):
 - (d) Do a wiring check between pin 70 of connector M24505C and pin 2 of the circuit breaker, C21443 (WDM 21-61-17):
 - 1) Do a wiring check between pin 70 of connector M24505C and pin 2 of this circuit breaker, C21443:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21443	F/D TRIM MOD VLV

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- (e) Do a wiring check between pin 11 of connector M24505A and pin 2 of the circuit breaker, C21655 (WDM 21-61-17):

- 1) Do a wiring check between pin 11 of connector M24505A and pin 2 of this circuit breaker, C21655:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	19	C21655	F/D TRIM MOD VLV CTRL

- (f) If there is a problem with the wiring, then do the steps that follow:
- 1) Repair the wiring. (WDM 21-61-17)
 - 2) Re-connect the electrical connectors DM24505A and DM24505C to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the relay, K21611, in the P110 panel (WDM 21-61-17).
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

897. Relay (Flight Deck Trim Mod Valve Open) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-50014.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for power to the flight deck trim mod valve open relay, K21623, in the P110 panel:
 - (a) Remove the relay, K21623, in the P110 panel (WDM 21-61-17).
 - (b) Do a check for 28V DC at pin X1 of connector DK21623 at the P110 panel.
 - (c) If there is not 28V DC at pin X1 of connector DK21623, then do the steps that follow:
 - 1) Repair the wiring between pin X1 of DK21623 and pin 2 of the circuit breaker, C21655 (WDM 21-61-17):

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- a) Repair the wiring between pin X1 of DK21623 and pin 2 of this circuit breaker, C21655:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	19	C21655	F/D TRIM MOD VLV CTRL

- 2) Re-install the relay, K21623, in the P110 panel (WDM 21-61-17).
 - 3) Push the AIR COND RESET switch on the P5 panel.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (d) If there is 28V DC at pin X1 of connector DK21623, then continue.
- (2) Do a check for path to ground for the flight deck trim mod valve open relay, K21623, in the P110 panel:
- (a) Disconnect the electrical connector DM24505B from the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Do a wiring check between pin X2 of connector DK21623 and pin 2 of DM24505B.
 - (c) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin X2 of connector DK21623 and pin 2 of DM24505B.
 - 2) Re-connect the electrical connector DM24505B to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the flight deck trim mod valve open relay, K21623, in the P110 panel (WDM 21-61-17).
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 7) If the maintenance message shows on the ground test display, then continue.
 - (d) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Replace the flight deck trim mod valve open relay, K21623 (WDM 21-61-17).
 - 2) Re-connect the electrical connector DM24505B to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the wiring between the relay, K21623, and the SIU, M24505:

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- (a) Disconnect the electrical connector DM24505C from the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the relay, K21623, in the P110 panel (WDM 21-61-17).
 - (c) Do a wiring check between pin B1 of connector DK21623 and pin 72 of DM24505C.
 - (d) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin B1 of connector DK21623 and pin 72 of DM24505C.
 - 2) Re-connect the electrical connector DM24505C to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the relay, K21623, in the P110 panel (WDM 21-61-17).
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 7) If the maintenance message shows on the ground test display, then continue.
 - (e) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Re-install the relay, K21623, in the P110 panel (WDM 21-61-17).
 - 2) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 3) Push the AIR COND RESET switch on the P5 panel.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the internal wiring in the P110 panel for the flight deck trim mod valve open relay circuit (WDM 21-61-17).
- (a) Disconnect the electrical connectors DM24505A and DM24505C from the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the relay, K21623, in the P110 panel (WDM 21-61-17).
 - (c) Do a wiring check between pins A2 and B2 of connector DK21623 and pin 2 of the circuit breaker, C21443 (WDM 21-61-17):
 - (d) Do a wiring check between pin 70 of connector M24505C and pin 2 of the circuit breaker, C21443 (WDM 21-61-17):
 - 1) Do a wiring check between pin 70 of connector M24505C and pin 2 of this circuit breaker, C21443:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21443	F/D TRIM MOD VLV

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- (e) Do a wiring check between pin 11 of connector M24505A and pin 2 of the circuit breaker, C21655 (WDM 21-61-17):

- 1) Do a wiring check between pin 11 of connector M24505A and pin 2 of this circuit breaker, C21655:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	19	C21655	F/D TRIM MOD VLV CTRL

- (f) If there is a problem with the wiring, then do the steps that follow:
- 1) Repair the wiring. (WDM 21-61-17)
 - 2) Re-connect the electrical connectors DM24505A and DM24505C to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the relay, K21623, in the P110 panel (WDM 21-61-17).
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

898. Relay (Flight Deck Trim Mod Valve Close) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-50015.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
- (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for power to the flight deck trim mod valve close relay, K21624, in the P110 panel:
- (a) Remove the relay, K21624, in the P110 panel (WDM 21-61-17).
 - (b) Do a check for 28V DC at pin X1 of connector DK21624 at the P110 panel.
 - (c) If there is not 28V DC at pin X1 of connector DK21624, then do the steps that follow:

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- 1) Repair the wiring between pin X1 of DK21624 and pin 2 of the circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	19	C21655	F/D TRIM MOD VLV CTRL

- 2) Re-install the relay, K21624, in the P110 panel (WDM 21-61-17).
 - 3) Push the AIR COND RESET switch on the P5 panel.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (d) If there is 28V DC at pin X1 of connector DK21624, then continue.
- (2) Do a check for path to ground for the flight deck trim mod valve close relay, K21624, in the P110 panel:
- (a) Disconnect the electrical connector DM24505B from the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Do a wiring check between pin X2 of connector DK21624 and pin 3 of DM24505B.
 - (c) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin X2 of connector DK21624 and pin 3 of DM24505B.
 - 2) Re-connect the electrical connector DM24505B to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the flight deck trim mod valve close relay, K21624, in the P110 panel (WDM 21-61-17).
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 7) If the maintenance message shows on the ground test display, then continue.
 - (d) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Replace the flight deck trim mod valve close relay, K21624 (WDM 21-61-17).
 - 2) Re-connect the electrical connector DM24505B to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Do this ground test on the MAT: 21 Environmental Control System, System Test, Door Area Heat.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the maintenance message shows on the ground test display, then continue.
- (3) Do a check of the wiring between the relay, K21624, and the SIU, M24505:

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- (a) Disconnect the electrical connector DM24505C from the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the relay, K21624, in the P110 panel (WDM 21-61-17).
 - (c) Do a wiring check between pin B1 of connector DK21624 and pin 73 of DM24505C.
 - (d) If there is a problem with the wiring, then do the steps that follow:
 - 1) Repair the wiring between pin B1 of connector DK21624 and pin 73 of DM24505C.
 - 2) Re-connect the electrical connector DM24505C to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the relay, K21624, in the P110 panel (WDM 21-61-17).
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 7) If the maintenance message shows on the ground test display, then continue.
 - (e) If there is not a problem with the wiring, then do the steps that follow:
 - 1) Re-install the relay, K21624, in the P110 panel (WDM 21-61-17).
 - 2) Do a check of the Signal Interface Unit (2), M24505, in the P110 panel.
This is the task:
Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
 - 3) Push the AIR COND RESET switch on the P5 panel.
 - 4) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 6) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the internal wiring in the P110 panel for the flight deck trim mod valve close relay circuit (WDM 21-61-17).
- (a) Disconnect the electrical connectors DM24505A and DM24505C from the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002
 - (b) Remove the relay, K21624, in the P110 panel (WDM 21-61-17).
 - (c) Do a wiring check between pins A2 and B2 of connector DK21624 and pin 2 of the circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21443	F/D TRIM MOD VLV

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- (d) Do a wiring check between pin 70 of connector M24505C and pin 2 of the circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	C21443	F/D TRIM MOD VLV

- (e) Do a wiring check between pin 11 of connector M24505A and pin 2 of the circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	19	C21655	F/D TRIM MOD VLV CTRL

- (f) If there is a problem with the wiring, then do the steps that follow:
- 1) Repair the wiring. (WDM 21-61-17)
 - 2) Re-connect the electrical connectors DM24505A and DM24505C to the Signal Interface Unit (2), M24505. do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-install the relay, K21624, in the P110 panel (WDM 21-61-17).
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left Trim Air System.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.

END OF TASK

899. CTC-L1 No Input from ELMS P110 Electronics Unit on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29463.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the Computing and Communications Unit, M24502.

This is the task:

Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B24107, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the ELMS P110 electronics unit to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
 - (a) Remove the CTC-L, M21631, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - (b) Disconnect connector DB21631 from the coupler, B21631.
 - (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD

DB21631

pin 1T	.....	pin 5
pin 1TR	.....	pin 4
pin 2T	.....	pin 2
pin 2TR	.....	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21631.
- (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

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- (6) Do this check of the wiring from the ELMS P110 panel to its Left System Bus coupler:
- (a) Disconnect connector DM24502A from the Computing and Communications Unit (CCU), M24502, do this task: Computing and Communications Unit - Removal, AMM TASK 24-09-00-000-815-002.
 - (b) Disconnect connector DB24107 from the coupler, B24107 (WDM 24-09-24).
 - (c) Do a wiring check between these pins of connector DM24502A and connector DB24107 (WDM 24-09-24):

DM24502A	DM24107
pin 2	pin 5
pin 3	pin 4
pin 5	New Contact To
pin 6	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB24107.
 - 3) Re-connect connector DM24502A. do this task: Computing and Communications Unit - Installation, AMM TASK 24-09-00-400-811-002
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

900. CTC-R2 No Input from ELMS P110 Electronics Unit on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29464.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the Computing and Communications Unit, M24502.

This is the task:

Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

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- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21633, in the P111 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE:** This coupler connects the CTC-R to the Systems 629 Bus-L.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B24107, in the P111 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE:** This coupler connects the ELMS P110 electronics unit to the Systems 629 Bus-L.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DB21633 from the coupler, B21633.
- (c) Do a wiring check between these pins of connector DM21632AA at the E2-2 shelf and connector DB21633 at the P111 panel (WDM 21-61-12):
- | DM21632AA | DB21633 |
|-------------------|----------------|
| pin 1T | pin 2 |
| pin 1TR | pin 1 |
| pin 2T | pin 5 |
| pin 2TR | pin 4 |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21633.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21633.
- (g) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the ELMS P110 panel to its Left System Bus coupler:

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- (a) Disconnect connector DM24502A from the Computing and Communications Unit (CCU), M24502, do this task: Computing and Communications Unit - Removal, AMM TASK 24-09-00-000-815-002.
- (b) Disconnect connector DB24107 from the coupler, B24107 (WDM 24-09-24).
- (c) Do a wiring check between these pins of connector DM24502A and connector DB24107 (WDM 24-09-24):

DM24502A	DB24107
pin 2	pin 5
pin 3	pin 4
pin 5	pin 2
pin 6	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB24107.
 - 3) Re-connect connector DM24502A. do this task: Computing and Communications Unit - Installation, AMM TASK 24-09-00-400-811-002
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

901. CTC-L1 No Input from ELMS P210 Electronics Unit on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29467.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the Computing and Communications Unit, M24506.

This is the task:

Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

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- (3) Replace the ARINC 629 coupler, B21631, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B24108, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the ELMS P210 electronics unit to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (b) Disconnect connector DB21631 from the coupler, B21631.
- (c) Do a wiring check between these pins of connector DM21631AD at the E1-2 shelf and connector DB21631 at the P111 panel (WDM 21-61-11):

DM21631AD	DB21631
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21631.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21631.
- (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the ELMS P210 electronics unit to its coupler:
- (a) Disconnect connector DM24506A from the CCU, M24506. do this task: Computing and Communications Unit - Removal, AMM TASK 24-09-00-000-815-002

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- (b) Disconnect connector DB24108 from the coupler, B24108.
- (c) Do a wiring check between these pins of connector DM24506A and connector DB24108 (WDM 24-09-25):

DM24506A	DB24108
pin 2	pin 5
pin 3	pin 4
pin 5	pin 2
pin 6	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB24108.
 - 3) Re-connect connector DM24506A to the CCU. do this task: Computing and Communications Unit - Removal, AMM TASK 24-09-00-000-815-002
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

902. CTC-R2 No Input from ELMS P210 Electronics Unit on Systems 629 Bus-L - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29468.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the Computing and Communications Unit, M24506.
This is the task:
Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21633, in the P111 panel.

These are the tasks:

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ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-R to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B24108, in the P111 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the ELMS P210 electronics unit to the Systems 629 Bus-L.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
- (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21633 from the coupler, B21633.
 - (c) Do a wiring check between these pins of connector DM21631AA at the E2-2 shelf and connector DB21633 at the P111 panel (WDM 21-61-12):

DM21632AA	DB21633
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21633.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-connect connector DB21633.
 - (g) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the ELMS P210 electronics unit to its coupler:
- (a) Disconnect connector DM24506A from the CCU, M24506. do this task: Computing and Communications Unit - Installation, AMM TASK 24-09-00-400-811-002
 - (b) Disconnect connector DB24108 from the coupler, B24108.

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- (c) Do a wiring check between these pins of connector DM24506A and connector DB24108 (WDM 24-09-25):

DM24506A	DB24108
pin 2	pin 5
pin 1	pin 4
pin 5	pin 2
pin 4	pin 1

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB24108.
 - 3) Re-connect connector DM24506A. do this task: Computing and Communications Unit - Removal, AMM TASK 24-09-00-000-815-002
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

903. CTC-L2 No Input from ELMS P110 Electronics Unit on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29663.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the Computing and Communications Unit (CCU), M24502.
- This is the task:
- Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21632, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

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ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the CTC-L to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B24207, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the ELMS P110 electronics unit to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
- (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21632 from the coupler, B21632.
 - (c) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DB21632 at the P211 panel (WDM 21-61-11):

DM21631AA	DB21632
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21632.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-connect connector DB21632.
 - (g) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the ELMS P210 electronics unit to its coupler:
- (a) Disconnect connector DM24502A from the CCU, M24502. do this task: Computing and Communications Unit - Removal, AMM TASK 24-09-00-000-815-002
 - (b) Disconnect connector DB24207 from the coupler, B24207.
 - (c) Do a wiring check between these pins of connector DM24502A and connector DB24207 (WDM 24-09-24):

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DB24207

pin 2		pin 126
pin 1		pin 127
pin 5		pin 123
pin 4		pin 124

DM24502A

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB24207 to the coupler, B24207.
 - 3) Re-connect connector DM24502A to the CCU, M24502. do this task: Computing and Communications Unit - Installation, AMM TASK 24-09-00-400-811-002
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

904. CTC-R1 No Input from ELMS P110 Electronics Unit on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29664.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the Computing and Communications Unit (CCU), M24502.
- This is the task:
- Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21634, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE: This coupler connects the CTC-R to the Systems 629 Bus-R.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B24207, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the ELMS P110 electronics unit to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
 - (a) Remove the CTC-R, M21632.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (b) Disconnect connector DB21634 from the coupler, B21634.
- (c) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DB21634 at the P211 panel (WDM 21-61-12):

DM21632AD	DB21634
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21634.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21634.
- (g) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the ELMS P110 electronics unit to its coupler:
 - (a) Disconnect connector DM24502A from the CCU, M24502, do this task: Computing and Communications Unit - Removal, AMM TASK 24-09-00-000-815-002.
 - (b) Disconnect connector DB24207 from the coupler, B24207.
 - (c) Do a wiring check between these pins of connector DM24502A and connector DB24207 (WDM 24-09-24):

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DB24207	DM24502A
pin 2	pin 126
pin 1	pin 127
pin 5	pin 123
pin 4	pin 124

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB24207 to the coupler, B24207.
 - 3) Re-connect connector DM24502A to the CCU, M24502. do this task: Computing and Communications Unit - Installation, AMM TASK 24-09-00-400-811-002
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

905. CTC-L2 No Input from ELMS P210 Electronics Unit on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29667.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left cabin temperature controller (CTC-L), M21631.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the Computing and Communications Unit (CCU), M24506.
- This is the task:
- Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21632, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE: This coupler connects the CTC-L to the Systems 629 Bus-R.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B24208, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the ELMS P210 electronics unit to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-L to its coupler:
 - (a) Remove the CTC-L, M21631. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21632 from the coupler, B21632.
 - (c) Do a wiring check between these pins of connector DM21631AA at the E1-2 shelf and connector DB21632 at the P211 panel (WDM 21-61-11):

DM21631AA	DB21632
pin 1T	pin 2
pin 1TR	pin 1
pin 2T	pin 5
pin 2TR	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21632.
 - 3) Re-install the CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21632.
- (g) Re-install the CTC-L, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the ELMS P210 electronics unit to its coupler:
 - (a) Disconnect connector DM24506A from the CCU, M24506. do this task: Computing and Communications Unit - Removal, AMM TASK 24-09-00-000-815-002
 - (b) Disconnect connector DB24208 from the coupler, B24208.
 - (c) Do a wiring check between these pins of connector DM24506A and connector DB24208 (WDM 24-09-25):

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DB24208	DM24506A
pin 2	pin 126
pin 1	pin 127
pin 5	pin 123
pin 4	pin 124

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB24208 to the coupler, B24208.
 - 3) Re-connect connector DM24506A to the CCU, M24506. do this task: Computing and Communications Unit - Installation, AMM TASK 24-09-00-400-811-002
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

906. CTC-R1 No Input from ELMS P210 Electronics Unit on Systems 629 Bus-R - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-29668.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right cabin temperature controller (CTC-R), M21632.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do a check of the Computing and Communications Unit (CCU), M24506.
- This is the task:
- Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the ARINC 629 coupler, B21634, in the P211 panel.
- These are the tasks:
- ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,
ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.
- NOTE: This coupler connects the CTC-R to the Systems 629 Bus-R.

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- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the ARINC 629 coupler, B24208, in the P211 panel.

These are the tasks:

ARINC 629 Current-Mode Coupler Removal, AMM TASK 23-91-01-000-801,

ARINC 629 Current-Mode Coupler Installation, AMM TASK 23-91-01-400-801.

NOTE: This coupler connects the ELMS P210 electronics unit to the Systems 629 Bus-R.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Do this check of the wiring from the CTC-R to its coupler:
 - (a) Remove the CTC-R, M21632. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (b) Disconnect connector DB21634 from the coupler, B21634.
 - (c) Do a wiring check between these pins of connector DM21632AD at the E2-2 shelf and connector DB21634 at the P211 panel (WDM 21-61-12):

DM21632AD	DB21634
pin 1T	pin 5
pin 1TR	pin 4
pin 2T	pin 2
pin 2TR	pin 1

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB21632.
 - 3) Re-install the CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DB21634.
- (g) Re-install the CTC-R, M21634. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (6) Do this check of the wiring from the ELMS P210 electronics unit to its coupler:
 - (a) Disconnect connector DM24506A from the CCU, M24506, do this task: Computing and Communications Unit - Removal, AMM TASK 24-09-00-000-815-002.
 - (b) Disconnect connector DB24208 from the coupler, B24208.
 - (c) Do a wiring check between these pins of connector DM24506A and connector DB24208 (WDM 24-09-25):

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DB24208

pin 2		pin 126
pin 1		pin 127
pin 5		pin 123
pin 4		pin 124

DM24506A

- (d) If you find a problem with the wiring, then do these steps:
- 1) Replace the ARINC 629 wiring (SWPM 20-11-11).
 - 2) Re-connect connector DB24208 to the coupler, B24208.
 - 3) Re-connect connector DM24506A to the CCU, M24506. do this task: Computing and Communications Unit - Installation, AMM TASK 24-09-00-400-811-002
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

940. EICAS Status Message TRIM AIR L (R) With No Correlated Maintenance Message - Fault Isolation

A. Description

- (1) The EICAS status message TRIM AIR L (R) is seen with no correlated maintenance message recorded in the Central Maintenance Computer.
- (2) The trim air switches enable trim air operation when they are set to ON. The switches turn off the trim system when they are in the out position. The FAULT light turns on and the advisory message TRIM AIR L (R) shows when any of these conditions occur:
 - (a) Related L (R) trim air switch-lights is set to OFF (out position) and related PRSOV is latched closed.
 - (b) Related zone duct temperature is greater than 190°F (88°C).

B. Initial evaluation

- (1) Use the MAT to make sure that there are no correlated maintenance messages for the EICAS status message. If there are correlated maintenance messages, then do those fault isolation tasks before you continue.

C. Fault Isolation Procedure

- (1) Set the L (R) TRIM AIR switch first to OFF, then to ON.
 - (a) If the EICAS message does not show, you corrected the fault.
 - (b) If the EICAS message continues to show, then continue.
- (2) Replace the applicable zone trim air modulating valve. These are the tasks:
 - Zone Trim Air Modulating Valves Removal, AMM TASK 21-61-02-000-801.
 - Zone Trim Air Modulating Valves Installation, AMM TASK 21-61-02-400-801.

D. Repair Confirmation

- (1) Return the airplane to revenue service. Monitor the airplane for repeat occurrences of the EICAS status message.

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801. Trim Air Pressure Sensor (Left) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22001.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for damage to the tube assembly that connects the left trim air pressure sensor, M21633 to the duct that goes to the trim air muffler.
 - (a) If the tube assembly is damaged, then do these steps:
 - 1) Repair the tube assembly.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the tube assembly is not damaged, then continue.
- (2) Disconnect connector DM21633 from the pressure sensor (WDM 21-62-11).
- (3) Do a check for 28 VDC between pins 1 and 2 of connector DM21633 (WDM 21-62-11).
- (4) If there is 28 VDC between pins 1 and 2 of connector DM21633, then do these steps:
 - (a) Replace the left trim air pressure sensor, M21633.

These are the tasks:
Trim Air Pressure Sensor Removal, AMM TASK 21-62-02-000-801,
Trim Air Pressure Sensor Installation, AMM TASK 21-62-02-400-801.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then remove the left Cabin Temperature Controller (CTC). To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (d) Disconnect connector DM21633 from the pressure sensor.
 - (e) Do a wiring check between these pins of connectors DM21631AE and DM21631AB on the E1-2 shelf and connector DM21633 at the pressure sensor, M21633 (WDM 21-62-11).

DM21631AE

pin A2		pin 3
pin A3		pin 4

DM21633

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DM21631AB

pin K2 pin 3
pin K3 pin 4

DM21633

- (f) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21633.
 - 3) Re-install the left CTC, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (g) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DM21633.
 - 2) Install a new left CTC, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) Do this ground test: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (5) If there is not 28 VDC between pins 1 and 2 of connector DM21633, then do these steps (WDM 21-62-11):
 - (a) Do a continuity check between pin 2 of connector DM21633 and structure ground.
 - (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21633.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If you do not find a problem with the wiring, do these steps:
 - 1) Do a check for 28 VDC between terminal QB45 of TB1201 on the E1-2 shelf, and structure ground (WDM 21-62-11).
 - 2) If there is not 28 VDC at terminal QB45 of TB1201, do these steps:
 - a) Repair the wiring between circuit breaker C21627, on the Left Power Management Panel, P110, and terminal QB45 of TB1201 on the E1-2 shelf (WDM 21-62-11).
 - b) Re-connect connector DM21633.
 - c) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.

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- 3) If there is 28 VDC at terminal QB45 of TB1201, do these steps:
 - a) Repair the wiring between terminal QB45 of TB1201 on the E1-2 shelf, and pin 1 of connector DM21633 on the pressure sensor (WDM 21-62-11).
 - b) Re-connect connector DM21633.
 - c) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- (6) Replace the left pack flow sensor, M21536.

These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.

NOTE: A pack inlet pressure difference greater than 4 psi between the two packs or between a pack and a bleed air source is considered a fault if APU bleed is ON and both packs are operating. When the APU bleed is OFF, the fault threshold is a 1 psi difference. It is possible for the pack flow sensor to cause a Trim Air Pressure Sensor fault when the APU bleed is OFF and the left and right pack inlet pressure indications are different.

————— **END OF TASK** —————

802. Trim Air Pressure Regulating and SOV (Left) Torque Motor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24201.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.

- (2) Check the MAT to confirm the 21-24201 message is not a nuisance message:

NOTE: Incorporation of the Boeing SB 777-21-0028 and the Hamilton Standard SB 810200-21-08 can reduce the occurrence of the nuisance messages.

- (a) Access the Fault History and Present Leg Faults screens.
 - (b) Check the MAT for maintenance messages 21-22001 and 21-23015.
 - 1) If the messages 21-22001 and 21-23015 are present do the Fault Isolation Procedure below.
 - 2) If the messages 21-22001 and 21-23015 are not present, then continue.
 - (c) Verify that the 21-24201 message occurred only during these conditions:
 - 1) Engine Start
 - 2) Taxi
 - 3) Power Off
 - (d) If the maintenance message 21-24201 occurred during conditions other than those listed above, do the Fault Isolation Procedure below.
 - (e) If the maintenance message 21-24201 occurred during the conditions listed above, then continue.
- (3) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 panel.

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- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
- (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for damage to the tube assembly that connects the left trim air pressure sensor, M21633 to the duct that goes to the trim air muffler.
 - (a) If the tube assembly is damaged, then do these steps:
 - 1) Repair the tube assembly.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Left System Air On.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the tube assembly is not damaged, then continue.
- (2) Clean the trim air PRSOV (V21621) filter (AMM PAGEBLOCK 21-62-01/701).
 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the trim air PRSOV, V21621.

These are the tasks:

Trim Air Pressure Regulating and Shutoff Valve Removal, AMM TASK 21-62-01-000-801,
Trim Air Pressure Regulating and Shutoff Valve Installation, AMM TASK 21-62-01-400-801.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the trim air pressure sensor, M21633.

These are the tasks:

Trim Air Pressure Sensor Removal, AMM TASK 21-62-02-000-801,
Trim Air Pressure Sensor Installation, AMM TASK 21-62-02-400-801.

 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the left flow sensor, M21536.

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These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.

- (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the left cabin temperature controller (CTC-L), M21631.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,

Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

- (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (7) Replace the left air supply and cabin pressure controller, (ASCPC-L), M36111.

These are the tasks:

ASCPC Removal, AMM TASK 36-11-20-000-801,

ASCPC Installation, AMM TASK 36-11-20-400-801.

- (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (8) Do this check of the wiring between the CTC and the PRSOV:

- (a) Disconnect connector DV21621A from the left trim air pressure regulating and shutoff valve (PRSOV), V21621.
- (b) Remove the CTC-L, M21631 from the E1-2 shelf. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
- (c) Do a wiring check between these pins of connector DM21631AE on the E1-2 shelf and connector DV21621A at the trim air PRSOV, V21621 (WDM 21-62-11).

DM21631AE

pin E8 pin 1
pin F8 pin 2

DV21621A

- (d) Do a wiring check between these pins of connector DM21631AB on the E1-2 shelf and connector DV21621A at the trim air PRSOV, V21621 (WDM 21-62-11).

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DM21631AB

pin E8 pin 2
pin F8 pin 1

DV21621A

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DV21621A.
 - 3) Re-install CTC-L, M21631. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
- (9) Do this check of the wiring between the ASCPC and the PRSOV:
- (a) Disconnect connector DV21621B from the left trim air pressure regulating and shutoff valve (PRSOV), V21621.
 - (b) Remove the ASCPC-L, M36111, from the E1-2 shelf. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
 - (c) Do a wiring check between these pins of connector DM36111AB on the E1-2 shelf and connector DV21621B at the trim air PRSOV, V21621 (WDM 21-62-11).

DM36111AB

pin A2 pin 1

DV21621B

- (d) Do a wiring check between pin 2 of connector DV21621B at the trim air PRSOV, V21621 and structure ground (WDM 21-62-11).
- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DV21621B.
 - 3) Re-install the ASCPC-L, M36111. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

803. Left Trim Air Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43500.

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B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the L TRIM AIR switch first to off, then to ON.
 - (b) If the MAT shows ACTIVE for the maintenance message while the switch is in one or more of the positions specified above, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in all the positions specified above, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the trim air switch, M21314S9 (WDM 21-62-11).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the L TRIM AIR switch first to off, and then to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON or off position, then continue.
- (2) Do this check of the wiring from the trim air switch to the left overhead panel cardfile:
 - (a) Remove the air conditioning module, M21314 (WDM 21-62-11).
 - (b) Disconnect connector M21314DS9 from the trim air switch.
 - (c) Disconnect connector DM23117L from the left overhead card file, M23117.
 - (d) Do a wiring check between these pins of connector M21314DS9 at pilot's overhead panel, P5, and connector DM23117L, at the maintenance panel, P61 (WDM 21-62-11):

M21314DS9

pin 4	.....	pin B4
pin 5	.....	pin B6
pin 6	.....	pin B5

DM23117L

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector M21314DS9.
 - 3) Re-connect connector DM23117L.
 - 4) Re-install the air conditioning module, M21314.
 - 5) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the L TRIM AIR switch first to off, then to ON.
 - 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M21314DS9 to the trim air switch, M21314S9.
- (h) Re-install the air conditioning module, M21314.

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- (3) Replace the left overhead panel card file chassis, M23117 at the maintenance panel, P61.
These are the tasks:
Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Set the L TRIM AIR switch first to off, then to ON.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.

————— **END OF TASK** —————

805. Right Trim Air Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43860.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
- (a) Set the R TRIM AIR switch first to off, then to ON.
- (b) If the MAT shows ACTIVE for the maintenance message while the switch is in one or more of the positions specified above, then do the Fault Isolation Procedure below.
- (c) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in all the positions specified above, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the trim air switch, M21314S10 (WDM 21-62-12).
- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Set the R TRIM AIR switch first to off, and then to ON.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON or off position, then continue.
- (2) Do this check of the wiring from the trim air switch to the left overhead panel cardfile:
- (a) Remove the air conditioning module, M21314 (WDM 21-62-12).
- (b) Disconnect connector M21314DS10 from the trim air switch.
- (c) Disconnect connector DM23117L from the right overhead card file, M23217.
- (d) Do a wiring check between these pins of connector M21314DS10 at pilot's overhead panel, P5, and connector DM23117L, at the maintenance panel, P61 (WDM 21-62-12):

M21314DS10		DM23117L
pin 4		pin B4
pin 5		pin B6
pin 6		pin B5

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- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector M21314DS10.
 - 3) Re-connect connector DM23117L.
 - 4) Re-install the air conditioning module, M21314.
 - 5) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the R TRIM AIR switch first to off, then to ON.
 - 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M21314DS10 to the trim air switch, M21314S10.
- (h) Re-install the air conditioning module, M21314.
- (3) Replace the right overhead panel card file chassis, M23217 at the maintenance panel, P61.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the R TRIM AIR switch first to off, then to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.

————— END OF TASK —————

806. Trim Air Pressure Sensor (Right) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-22002.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for damage to the tube assembly that connects the right trim air pressure sensor, M21634 to the duct that goes to the trim air muffler.
 - (a) If the tube assembly is damaged, then do these steps:
 - 1) Repair the tube assembly.
 - 2) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.

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- 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the tube assembly is not damaged, then continue.
 - (2) Disconnect connector DM21634 from the pressure sensor (WDM 21-62-12).
 - (3) Do a check for 28 VDC between pins 1 and 2 of connector DM21634 (WDM 21-62-12).
 - (4) If there is 28 VDC between pins 1 and 2 of connector DM21634, then do these steps:
 - (a) Replace the right trim air pressure sensor, M21634.

These are the tasks:
Trim Air Pressure Sensor Removal, AMM TASK 21-62-02-000-801,
Trim Air Pressure Sensor Installation, AMM TASK 21-62-02-400-801.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then remove the right Cabin Temperature Controller (CTC). To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (d) Disconnect connector DM21634 from the pressure sensor.
 - (e) Do a wiring check between these pins of connectors DM21632AE and DM21632AB on the E2-2 shelf and connector DM21634 at the pressure sensor, M21634 (WDM 21-62-12).
DM21632AE	DM21634
pin A2	pin 3
pin A3	pin 4
-
DM21632AB	DM21634
pin K2	pin 3
pin K3	pin 4
- (f) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21634.
 - 3) Re-install the right CTC. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Do this ground test: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (g) If you do not find a problem with the wiring, then do these steps:
 - 1) Re-connect connector DM21634.
 - 2) Install a new right CTC, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 3) Do this ground test: 21 Cabin Temperature Control System, Operational Test, Right System Air On.

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- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (5) If there is not 28 VDC between pins 1 and 2 of connector DM21634, then do these steps (WDM 21-62-12):
 - (a) Do a continuity check between pin 2 of connector DM21634 and structure ground.
 - (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM21634.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If you do not find a problem with the wiring, do these steps:
 - 1) Do a check for 28 VDC between terminal QB5 of TB2202 on the E2-2 shelf, and structure ground (WDM 21-62-12).
 - 2) If there is not 28 VDC at terminal QB5 of TB2202, do these steps:
 - a) Repair the wiring between circuit breaker C21628, on the Right Power Management Panel, P210, and terminal QB5 of TB2202 on the E2-2 shelf (WDM 21-62-12).
 - b) Re-connect connector DM21634.
 - c) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If there is 28 VDC at terminal QB5 of TB2202, then do these steps:
 - a) Repair the wiring between terminal QB5 of TB2202 on the E2-2 shelf, and pin 1 of connector DM21634 at the pressure sensor (WDM 21-62-12).
 - b) Re-connect connector DM21634.
 - c) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- (6) Replace the right pack flow sensor, M21521.

These are the tasks:

Flow Sensor Removal, AMM TASK 21-51-03-000-801,

Flow Sensor Installation, AMM TASK 21-51-03-400-801.

NOTE: A pack inlet pressure difference greater than 4 psi between the two packs or between a pack and a bleed air source is considered a fault if APU bleed is ON and both packs are operating. When the APU bleed is OFF, the fault threshold is a 1 psi difference. It is possible for the pack flow sensor to cause a Trim Air Pressure Sensor fault when the APU bleed is OFF and the left and right pack inlet pressure indications are different.

————— **END OF TASK** —————

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807. Trim Air Pressure Regulating and SOV (Right) Torque Motor Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-24202.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) Check the MAT to confirm the 21-24202 message is not a nuisance message:

NOTE: Incorporation of the Boeing SB 777-21-0028 and the Hamilton Standard SB 810200-21-08 can reduce the occurrence of the nuisance messages.

- (a) Access the Fault History and Present Leg Faults screens.
 - (b) Check the MAT for maintenance messages 21-22002 and 21-23016.
 - 1) If the messages 21-22002 and 21-23016 are present do the Fault Isolation Procedure below.
 - 2) If the messages 21-22002 and 21-23016 are not present, then continue.
 - (c) Verify that the 21-24202 message occurred only during these conditions:
 - 1) Engine Start
 - 2) Taxi
 - 3) Power Off
 - (d) If the maintenance message 21-24202 occurred during conditions other than those listed above, do the Fault Isolation Procedure below.
 - (e) If the maintenance message 21-24202 occurred during the conditions listed above, then continue.
- (3) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (c) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (d) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check for damage to the tube assembly that connects the right trim air pressure sensor, M21634 to the duct that goes to the trim air muffler.
 - (a) If the tube assembly is damaged, then do these steps:
 - 1) Repair the tube assembly.
 - 2) Push the AIR COND RESET switch on the P5 panel.
 - 3) Do this ground test on the MAT: 21 Cabin Temperature Control System, Operational Test, Right System Air On.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the tube assembly is not damaged, then continue.
- (2) Clean the trim air PRSOV (V21622) filter (AMM PAGEBLOCK 21-62-01/701).

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- (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the trim air PRSOV, V21622.
- These are the tasks:
- Trim Air Pressure Regulating and Shutoff Valve Removal, AMM TASK 21-62-01-000-801,
Trim Air Pressure Regulating and Shutoff Valve Installation, AMM TASK 21-62-01-400-801.
- (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the trim air pressure sensor, M21634.
- These are the tasks:
- Trim Air Pressure Sensor Removal, AMM TASK 21-62-02-000-801,
Trim Air Pressure Sensor Installation, AMM TASK 21-62-02-400-801.
- (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the right flow sensor, M21521.
- These are the tasks:
- Flow Sensor Removal, AMM TASK 21-51-03-000-801,
Flow Sensor Installation, AMM TASK 21-51-03-400-801.
- (a) Push the AIR COND RESET switch on the P5 panel.
 - (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left System Air On.
 - (c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the right cabin temperature controller (CTC-R), M21632.
- These are the tasks:
- Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
- (a) Push the AIR COND RESET switch on the P5 panel.



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- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
- (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.
- (7) Replace the right air supply and cabin pressure controller, (ASCPC-R), M36112.

These are the tasks:

ASCPC Removal, AMM TASK 36-11-20-000-801,

ASCPC Installation, AMM TASK 36-11-20-400-801.

- (a) Push the AIR COND RESET switch on the P5 panel.
- (b) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
- (c) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance message shows on the ground test display, then continue.
- (8) Do this check of the wiring between the CTC and the PRSOV:
 - (a) Disconnect connector DV21622A from the right trim air pressure regulating and shutoff valve (PRSOV), V21622.
 - (b) Remove the CTC-R, M21632 from the E2-2 shelf. To remove it, do this task: Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801.
 - (c) Do a wiring check between these pins of connector DM21632AE on the E2-2 shelf and connector DV21622A at the trim air PRSOV, V21622 (WDM 21-62-12).

DM21632AE

DV21622A

pin E8	.....	pin 1
pin F8	.....	pin 2

- (d) Do a wiring check between these pins of connector DM21632AB on the E2-2 shelf and connector DV21622A at the trim air PRSOV, V21622 (WDM 21-62-12).

DM21632AB

DV21622A

pin E8	.....	pin 2
pin F8	.....	pin 1

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV21622A.
 - 3) Re-install CTC-R, M21632. To install it, do this task: Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
- (9) Do this check of the wiring between the ASCPC and the PRSOV:

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- (a) Disconnect connector DV21622B from the right trim air pressure regulating and shutoff valve (PRSOV), V21622.
- (b) Remove the ASCPC-R, M36112, from the E2-2 shelf. To remove it, do this task: ASCPC Removal, AMM TASK 36-11-20-000-801.
- (c) Do a wiring check between these pins of connector DM36112AB on the E2-2 shelf and connector DV21622B at the trim air PRSOV, V21622 (WDM 21-62-12).

DM36112AB

DV21622B

pin A2 pin 1

- (d) Do a wiring check between pin 2 of connector DV21622B at the trim air PRSOV, V21622 and structure ground (WDM 21-62-12).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV21622B.
 - 3) Re-install the ASCPC-R, M36112,. To install it, do this task: ASCPC Installation, AMM TASK 36-11-20-400-801.
 - 4) Push the AIR COND RESET switch on the P5 panel.
 - 5) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Right System Air On.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

809. Trim Air Pressure Ground Test Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 21-23060.

B. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (a) If a maintenance message related to the trim air pressure sensor, the trim air PRSOV, or the CTC shows in existing faults, then do these steps:
 - 1) Find the message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - (b) If a maintenance message related to the trim air pressure sensor, the trim air PRSOV, or the CTC does not show in existing faults, then continue.
- (2) Replace the left (right) cabin temperature controller (CTC) M21631 (M21632) as applicable.

These are the tasks:

Cabin Temperature Controller (CTC) Removal, AMM TASK 21-61-01-000-801,
Cabin Temperature Controller (CTC) Installation, AMM TASK 21-61-01-400-801.

 - (a) Do this ground test on the MAT: 21 Cabin Temperature Control System, System Test, Left (Right) System Air On.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

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801. Procedure To Be Determined - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 21-20017, 21-20018, 21-20019, 21-21155, 21-22117, 21-22118, 21-22119, 21-22202, 21-22206, 21-22207, 21-22217, 21-22218, 21-22219, 21-22319, 21-22419, 21-30010, 21-30011, 21-30012, 21-30013, 21-30032, 21-30033, 21-30034, 21-30035.

B. Fault Isolation Procedure

- (1) At this time the FIM does not have a procedure for this fault. The FIM will contain a procedure for this fault in the future.

————— END OF TASK —————

802. Observed Fault with Correlated Maintenance Messages - Fault Isolation

A. Initial Evaluation

- (1) Find the fault code to the right of the fault description in the Observed Faults List (at the front of the FIM).
 - (a) The first two digits of the fault code are the FIM chapter that you need. Go to the Fault Code Index in that chapter and find the fault code.
 - (b) Find the maintenance message to the right of the fault code.
 - (c) Find the task number on the same line as the maintenance message number.
 - (d) Go to the task in the FIM and do the steps in the task.

————— END OF TASK —————

803. EICAS Message Latched by AIMS - Fault Isolation

A. Initial Evaluation

NOTE: AIMS can latch this EICAS message when it occurs. After you find the cause of the fault and correct it, it is possible that the EICAS message will continue to show.

- (1) Do not erase the EICAS message until you complete the task for the correlated maintenance message.
- (2) When this EICAS message occurs, do these steps:
 - (a) Make sure that you have the correlated maintenance message number that shows on the MAT with the EICAS message.
 - (b) Go back to the FIM Fault Code Index and find the fault code for the EICAS message.
 - (c) Find the correlated maintenance message number and the task number to the right of the fault code.
 - (d) Go to the specified task in the FIM and do the steps in the task.
 - (e) After you do the actions in the task to correct the fault, do these steps:
 - 1) Look at the MAT for the EICAS message.
 - 2) If the MAT shows LATCHED for the EICAS message, then you must erase it from the EICAS status display. To erase it, do this task: Erasing a EICAS Status Message Latched by AIMS, AMM TASK 31-61-00-800-802.

————— END OF TASK —————

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