

CHAPTER

23

COMMUNICATIONS



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23-EFFECTIVE PAGES			23-00-00 (cont)			23-11-04 (cont)		
1 thru 8	SEP 05/2018		910	Sep 05/2017		408	BLANK	
23-CONTENTS			911	Sep 05/2017		23-11-04		
1	Sep 05/2017		912	Sep 05/2017		601	May 05/2018	
2	Sep 05/2017		913	Sep 05/2017		602	May 05/2015	
3	Jan 05/2016		914	Sep 05/2017		603	Jan 05/2015	
4	Jul 25/2018		915	Sep 05/2017		604	BLANK	
5	Jul 25/2018		916	BLANK		23-11-05		
6	Jul 25/2018		23-11-00			401	May 05/2015	
7	May 05/2018		201	Jan 05/2016		402	Sep 05/2017	
8	May 05/2017		202	Jan 05/2016		403	Sep 05/2017	
9	Jan 05/2016		23-11-00			404	Sep 05/2017	
10	Jan 05/2016		501	Jan 05/2015		405	Jan 05/2015	
11	May 05/2018		502	Jan 05/2015		406	BLANK	
12	May 05/2018		503	Jan 05/2015		23-12-00		
13	May 05/2018		504	Sep 05/2017		201	Jan 05/2016	
14	May 05/2017		505	Sep 05/2017		202	Jan 05/2016	
15	May 05/2017		506	Sep 05/2017		203	Jan 05/2016	
16	May 05/2017		507	Sep 05/2017		204	BLANK	
17	Sep 05/2017		508	Sep 05/2017		23-12-00		
18	May 05/2017		23-11-03			501	Jan 05/2015	
19	May 05/2017		401	May 05/2015		502	Jan 05/2015	
O 20	Sep 05/2018		402	Sep 05/2017		503	Jan 05/2015	
O 21	Sep 05/2018		403	Sep 05/2017		504	Jan 05/2015	
O 22	Sep 05/2018		404	Sep 05/2017		505	Jan 05/2015	
D 23	Sep 5/2018		405	Sep 05/2017		506	Jan 05/2015	
D 24	BLANK		406	Sep 05/2017		507	Jan 05/2015	
23-00-00			407	Sep 05/2017		508	Jan 05/2015	
901	May 05/2015		408	BLANK		509	Jan 05/2015	
902	Sep 05/2017		23-11-04			510	Jan 05/2015	
903	Sep 05/2017		401	Sep 05/2017		23-12-01		
904	Sep 05/2017		402	Sep 05/2017		401	May 05/2015	
905	Sep 05/2017		403	Sep 05/2017		402	Sep 05/2017	
906	Sep 05/2017		404	May 05/2018		403	Sep 05/2017	
907	Sep 05/2017		405	Sep 05/2017		404	Sep 05/2017	
908	Sep 05/2017		406	Sep 05/2017		405	Jan 05/2015	
909	Sep 05/2017		407	Sep 05/2017		406	Jan 05/2015	

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23-12-02			23-15-00 (cont)			23-15-12 (cont)		
401	May 05/2015		507	Jul 25/2018		405	Jul 25/2018	
402	Sep 05/2017		508	Jul 25/2018		406	Jan 05/2018	
403	Sep 05/2017		509	Jul 25/2018		407	Jul 25/2018	
404	Sep 05/2017		510	Jul 25/2018		408	Jul 25/2018	
405	Sep 05/2017		23-15-08			409	Sep 05/2017	
406	Sep 05/2017		401	Jul 25/2018		410	BLANK	
407	Sep 05/2017		402	Jul 25/2018		23-15-13		
408	BLANK		403	Jul 25/2018		401	Jul 25/2018	
23-12-03			404	May 05/2018		402	Jul 25/2018	
401	May 05/2018		405	Jul 25/2018		403	Jul 25/2018	
402	Sep 05/2017		406	Jul 25/2018		404	Jul 25/2018	
403	Sep 05/2017		407	Jul 25/2018		405	Jul 25/2018	
404	May 05/2017		408	Jul 25/2018		406	Jul 25/2018	
405	May 05/2018		409	Jul 25/2018		407	Jul 25/2018	
406	Jan 05/2018		410	Jul 25/2018		408	BLANK	
407	Sep 05/2017		411	Jul 25/2018		23-15-14		
408	Sep 05/2017		412	BLANK		401	May 05/2015	
409	Sep 05/2017		23-15-10			402	Sep 05/2017	
410	Sep 05/2017		201	Jul 25/2018		403	Jan 05/2018	
23-12-03			202	Jul 25/2018		404	Jul 25/2018	
701	Jan 05/2017		203	Jul 25/2018		405	Jul 25/2018	
702	Sep 05/2017		204	Jul 25/2018		406	Sep 05/2017	
703	Jan 05/2015		23-15-10			23-15-23		
704	BLANK		401	May 05/2017		201	Jan 05/2015	
23-15-00 Config 1			402	Sep 05/2017		202	Jan 05/2015	
201	Jul 25/2018		403	Jul 25/2018		203	Jan 05/2015	
202	Jul 25/2018		404	Sep 05/2017		204	BLANK	
203	Jul 25/2018		405	Jul 25/2018		23-15-23		
204	BLANK		406	Sep 05/2017		401	May 05/2015	
23-15-00			407	Jul 25/2018		402	Jul 25/2018	
501	Jul 25/2018		408	BLANK		403	Jan 05/2018	
502	Jul 25/2018		23-15-12			404	Jan 05/2018	
503	Jul 25/2018		401	Jan 05/2018		405	May 05/2018	
504	Jul 25/2018		402	Jul 25/2018		406	Jul 25/2018	
505	Jul 25/2018		403	Jul 25/2018		407	Jul 25/2018	
506	Jul 25/2018		404	Jul 25/2018		408	Jul 25/2018	

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23-15-23 (cont)			23-24-00 Config 6			23-27-00 (cont)		
409	Jul 25/2018		501	Jan 05/2018		503	Jan 05/2015	
410	Jul 25/2018		502	Jan 05/2018		504	Jan 05/2015	
411	Jan 05/2018		503	Sep 05/2017		23-31-00		
412	May 05/2018		504	Jan 05/2018		201	Jan 05/2016	
413	May 05/2018		505	Jan 05/2018		202	Jan 05/2016	
414	Jan 05/2018		506	Jan 05/2018		203	Jan 05/2016	
415	May 05/2018		507	Jan 05/2018		204	Jan 05/2016	
416	Sep 05/2017		508	BLANK		23-31-00		
417	Sep 05/2017		23-24-01 Config 3			501	May 05/2017	
418	Sep 05/2017		201	Jul 25/2018		502	Jan 05/2015	
23-15-24			202	Jul 25/2018		503	Jan 05/2015	
401	May 05/2015		203	Jan 05/2018		504	Jan 05/2015	
402	Jul 25/2018		204	Jan 05/2018		505	Jan 05/2015	
403	Jul 25/2018		205	Jan 05/2018		506	Sep 05/2017	
404	May 05/2015		206	Jan 05/2018		507	Sep 05/2017	
405	Jul 25/2018		207	Jan 05/2018		508	Jul 25/2018	
406	Jul 25/2018		208	Jan 05/2018		509	Jul 25/2018	
407	Jul 25/2018		23-24-02			510	Jul 25/2018	
408	Jul 25/2018		401	May 05/2018		23-31-02		
409	Jan 05/2018		402	May 05/2015		401	Sep 05/2017	
410	Jan 05/2016		403	May 05/2018		402	Sep 05/2017	
411	Sep 05/2017		404	May 05/2018		403	Sep 05/2017	
412	BLANK		405	Sep 05/2017		404	Sep 05/2017	
23-21-00			406	Sep 05/2017		405	Sep 05/2017	
501	Jan 05/2017		407	Sep 05/2017		406	Sep 05/2017	
502	Jan 05/2017		408	BLANK		407	Sep 05/2017	
503	Jan 05/2017		23-24-03			408	Sep 05/2017	
504	Jan 05/2017		401	Jan 05/2015		23-31-03		
23-21-01			402	Sep 05/2017		401	Jan 05/2015	
401	May 05/2015		403	Jan 05/2015		402	Jan 05/2015	
402	Sep 05/2017		404	Jan 05/2018		403	Jan 05/2015	
403	May 05/2018		405	Jan 05/2018		404	Sep 05/2017	
404	Sep 05/2017		406	BLANK		405	Jan 05/2015	
405	Jan 05/2015		23-27-00			406	Jan 05/2015	
406	BLANK		501	Jan 05/2015		407	Jan 05/2015	
			502	Jan 05/2015		408	Jan 05/2015	

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23-31-03 (cont)			23-33-02 (cont)			23-39-00 (cont)		
409	Sep 05/2017		410	Sep 05/2017		203	May 05/2018	
410	Jan 05/2015		411	Sep 05/2017		204	May 05/2018	
411	Jan 05/2015		412	Sep 05/2017		205	May 05/2018	
412	Jan 05/2015		413	Sep 05/2017		206	May 05/2018	
413	Jan 05/2015		414	Sep 05/2017		207	May 05/2018	
414	Sep 05/2017		415	Sep 05/2017		208	May 05/2018	
415	Jan 05/2015		416	Sep 05/2017		209	May 05/2018	
416	Jan 05/2015		417	Sep 05/2017		210	Sep 05/2017	
417	Jan 05/2015		418	Sep 05/2017		211	May 05/2018	
418	Jan 05/2015		419	Sep 05/2017		212	May 05/2018	
419	Jan 05/2015		420	Sep 05/2017		213	May 05/2018	
420	Jan 05/2015		421	Sep 05/2017		214	May 05/2018	
421	Jan 05/2015		422	Sep 05/2017		215	May 05/2018	
422	Sep 05/2017		423	Sep 05/2017		216	May 05/2018	
423	Jan 05/2015		424	Sep 05/2017		217	May 05/2018	
424	Jan 05/2015		425	Sep 05/2017		218	May 05/2018	
23-33-00			426	Sep 05/2017		219	May 05/2018	
201	Jan 05/2016		427	Sep 05/2017		220	May 05/2018	
202	Jan 05/2016		428	Sep 05/2017		221	May 05/2018	
203	Jan 05/2016		429	Jan 05/2018		222	BLANK	
204	BLANK		430	Jan 05/2018		23-39-03		
23-33-00			431	Jan 05/2018		401	May 05/2015	
501	May 05/2017		432	Sep 05/2017		402	Sep 05/2017	
502	May 05/2017		433	Sep 05/2017		403	Sep 05/2017	
503	May 05/2017		434	Sep 05/2017		404	Sep 05/2017	
504	BLANK		435	Sep 05/2017		405	May 05/2017	
23-33-02			436	Sep 05/2017		406	BLANK	
401	Jan 05/2015		437	Sep 05/2017		23-39-04		
402	Jan 05/2015		438	Sep 05/2017		401	May 05/2015	
403	Jan 05/2015		439	Sep 05/2017		402	Sep 05/2017	
404	Sep 05/2017		440	Sep 05/2017		403	Sep 05/2017	
405	Sep 05/2017		441	Sep 05/2017		404	Jan 05/2015	
406	Sep 05/2017		442	BLANK		405	Sep 05/2017	
407	Sep 05/2017		23-39-00			406	Sep 05/2017	
408	Jan 05/2015		201	May 05/2018		407	May 05/2017	
409	Sep 05/2017		202	May 05/2018		408	BLANK	

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23-39-11			23-39-16 (cont)			23-43-00		
401	Sep 05/2017		407	May 05/2018		501	Jan 05/2015	
402	Sep 05/2017		408	May 05/2018		502	Jan 05/2015	
403	Sep 05/2017		409	May 05/2018		23-43-01		
404	May 05/2017		410	May 05/2017		401	Jan 05/2015	
23-39-16			23-41-00			402	Sep 05/2017	
201	May 05/2018		501	Sep 05/2017		403	Sep 05/2017	
202	May 05/2018		502	Jan 05/2015		404	Sep 05/2015	
203	May 05/2018		503	Jan 05/2015		405	Jan 05/2015	
204	May 05/2018		504	BLANK		406	BLANK	
205	May 05/2018		23-42-00			23-51-00		
206	May 05/2018		501	Jan 05/2015		201	Jan 05/2016	
207	May 05/2018		502	May 05/2015		202	Jan 05/2016	
208	May 05/2018		503	May 05/2015		23-51-00		
209	May 05/2018		504	May 05/2015		501	May 05/2015	
210	May 05/2018		505	May 05/2015		502	May 05/2015	
211	May 05/2018		506	May 05/2015		503	May 05/2015	
212	May 05/2018		23-42-02			504	May 05/2015	
213	May 05/2018		401	Jan 05/2015		505	May 05/2015	
214	Sep 05/2017		402	Sep 05/2017		506	May 05/2015	
215	Sep 05/2017		403	Jul 25/2018		507	May 05/2015	
216	Sep 05/2017		404	Sep 05/2017		508	May 05/2015	
217	May 05/2017		405	Jan 05/2016		23-51-01		
218	May 05/2017		406	Jan 05/2015		401	Sep 05/2017	
219	May 05/2017		407	Jan 05/2015		402	Sep 05/2017	
220	May 05/2017		408	Sep 05/2016		403	Sep 05/2017	
221	May 05/2017		23-42-03			404	May 05/2018	
222	Sep 05/2017		401	Jan 05/2015		405	May 05/2018	
223	Sep 05/2017		402	Sep 05/2017		406	May 05/2018	
224	BLANK		403	Sep 05/2017		23-51-04		
23-39-16			404	Sep 05/2017		401	Sep 05/2017	
401	May 05/2018		405	Sep 05/2017		402	Sep 05/2017	
402	May 05/2018		406	Sep 05/2017		403	May 05/2015	
403	May 05/2018		407	Jan 05/2015		404	Sep 05/2017	
404	May 05/2018		408	Sep 05/2016		405	Jan 05/2015	
405	May 05/2018		409	Jan 05/2015		406	BLANK	
406	May 05/2018		410	Jan 05/2015				

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23-51-05			23-61-01 (cont)			23-61-01 (cont)		
401	Jan 05/2015		216	May 05/2018		252	BLANK	
402	Jan 05/2015		217	May 05/2018		23-71-00		
403	Sep 05/2017		218	Sep 05/2017		201	Jan 05/2016	
404	Sep 05/2017		219	Jul 25/2018		202	Jan 05/2016	
405	May 05/2016		220	Sep 05/2017		203	Jan 05/2016	
406	May 05/2016		221	Jul 25/2018		204	BLANK	
407	Jan 05/2015		222	Sep 05/2017		23-71-00		
408	BLANK		223	Jul 25/2018		501	Jan 05/2018	
23-51-06			224	Sep 05/2017		502	Jan 05/2018	
401	May 05/2016		225	Jul 25/2018		503	May 05/2015	
402	Sep 05/2017		226	Sep 05/2017		504	Jan 05/2015	
403	Jan 05/2015		227	Sep 05/2017		505	Jan 05/2018	
404	Jan 05/2015		228	May 05/2015		506	May 05/2017	
23-51-07			229	Jul 25/2018		507	May 05/2017	
401	Jan 05/2015		230	Sep 05/2017		508	Jan 05/2018	
402	Jan 05/2015		231	Jul 25/2018		509	May 05/2017	
403	Jan 05/2015		232	Sep 05/2017		510	May 05/2017	
404	May 05/2015		233	Jul 25/2018		511	Sep 05/2017	
405	Jan 05/2015		234	Sep 05/2017		512	Sep 05/2017	
406	Jan 05/2015		235	Jul 25/2018		513	May 05/2017	
23-61-01			236	Sep 05/2017		514	BLANK	
201	Sep 05/2015		237	Sep 05/2017		23-71-01		
202	Sep 05/2017		238	Sep 05/2017		201	Sep 05/2016	
203	Jan 05/2015		239	May 05/2018		202	Sep 05/2017	
204	Jan 05/2015		240	Sep 05/2017		203	Sep 05/2017	
205	Jan 05/2015		241	Sep 05/2017		204	Sep 05/2017	
206	Jan 05/2015		242	Sep 05/2017		23-71-01		
207	Jan 05/2015		243	Sep 05/2017		401	May 05/2015	
208	May 05/2017		244	May 05/2017		402	Sep 05/2017	
209	Sep 05/2017		245	Sep 05/2017		403	Sep 05/2017	
210	Sep 05/2017		246	Sep 05/2017		404	May 05/2015	
211	Sep 05/2017		247	May 05/2017		405	Sep 05/2017	
212	May 05/2018		248	May 05/2017		406	BLANK	
213	Sep 05/2017		249	May 05/2017		23-71-02		
214	May 05/2018		250	May 05/2017		401	Jan 05/2015	
215	Sep 05/2017		251	May 05/2017		402	Sep 05/2017	

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23-71-02 (cont)			23-75-01 Config 1			23-82-03 (cont)		
403	Jan 05/2018		D 401	Sep 5/2018		403	Jan 05/2015	
404	Jan 05/2015		D 402	Sep 5/2018		404	Sep 05/2017	
405	Jan 05/2015		D 403	Sep 5/2018		405	Jan 05/2015	
406	BLANK		D 404	Sep 5/2018		406	BLANK	
23-71-03			D 405	Sep 5/2018		23-91-00		
201	Sep 05/2016		D 406	Sep 5/2018		501	May 05/2016	
202	Sep 05/2016		23-75-07			502	Jan 05/2015	
203	Sep 05/2016		D 401	Sep 5/2018		503	Jan 05/2015	
204	Sep 05/2016		D 402	Sep 5/2018		504	Jan 05/2015	
205	Sep 05/2016		D 403	Sep 5/2018		505	Jan 05/2015	
206	Sep 05/2017		D 404	Sep 5/2018		506	Sep 05/2017	
207	Sep 05/2017		D 405	Sep 5/2018		507	May 05/2015	
208	Sep 05/2017		D 406	Sep 5/2018		508	May 05/2015	
209	Sep 05/2016		23-75-09			509	Sep 05/2017	
210	Sep 05/2017		D 401	Sep 5/2018		510	May 05/2015	
211	Sep 05/2017		D 402	Sep 5/2018		23-91-01		
212	Sep 05/2016		D 403	Sep 5/2018		401	Jan 05/2015	
213	May 05/2017		D 404	BLANK		402	Jan 05/2015	
214	Sep 05/2016		23-75-10			403	Jan 05/2015	
215	May 05/2017		D 401	Sep 5/2018		404	Jan 05/2015	
216	May 05/2017		D 402	Sep 5/2018		405	Jan 05/2015	
217	May 05/2018		D 403	Sep 5/2018		406	Jan 05/2015	
218	May 05/2018		D 404	Sep 5/2018		407	Jan 05/2015	
219	Sep 05/2016		D 405	Sep 5/2018		408	Jan 05/2015	
220	BLANK		D 406	Sep 5/2018		409	Jan 05/2015	
23-71-04			23-82-00			410	Sep 05/2017	
401	Jan 05/2015		501	Jan 05/2015		411	Sep 05/2017	
402	Sep 05/2017		502	BLANK		412	Sep 05/2017	
403	Jan 05/2018		23-82-01			413	Sep 05/2017	
404	Jan 05/2015		401	Sep 05/2017		414	Sep 05/2017	
23-75-00 Config 2			402	Jan 05/2015		415	May 05/2017	
D 201	Sep 5/2018		403	Jan 05/2015		416	May 05/2015	
D 202	Sep 5/2018		404	Sep 05/2017		417	Sep 05/2017	
23-75-00			23-82-03			418	Sep 05/2017	
D 501	Sep 5/2018		401	Sep 05/2017		419	May 05/2015	
D 502	Sep 5/2018		402	Sep 05/2017		420	May 05/2015	

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23-91-01 (cont)			23-93-00 (cont)			23-93-02 (cont)		
421	Sep 05/2017		534	Sep 05/2017		208	Sep 05/2017	
422	BLANK		535	Sep 05/2017		209	Sep 05/2017	
23-93-00			536	Sep 05/2017		210	Sep 05/2017	
501	Jan 05/2015		537	Sep 05/2017		23-93-03		
502	Jan 05/2015		538	Sep 05/2017		401	May 05/2015	
503	Jan 05/2015		539	Sep 05/2017		402	Sep 05/2017	
504	Jan 05/2015		540	Sep 05/2017		403	May 05/2017	
505	Jan 05/2015		541	Sep 05/2017		404	May 05/2017	
506	Jan 05/2015		542	Sep 05/2017		405	May 05/2017	
507	Sep 05/2017		543	Sep 05/2017		406	BLANK	
508	Sep 05/2017		544	Sep 05/2017				
509	Sep 05/2017		545	Sep 05/2017				
510	Sep 05/2017		546	Sep 05/2017				
511	Sep 05/2017		23-93-01					
512	Sep 05/2017		401	Sep 05/2017				
513	Sep 05/2017		402	Sep 05/2017				
514	Sep 05/2017		403	Sep 05/2017				
515	Sep 05/2017		404	Sep 05/2017				
516	Sep 05/2017		405	May 05/2017				
517	Sep 05/2017		406	Sep 05/2017				
518	Sep 05/2017		407	May 05/2015				
519	Sep 05/2017		408	Sep 05/2017				
520	Sep 05/2017		409	Sep 05/2017				
521	Sep 05/2017		410	Sep 05/2017				
522	Sep 05/2017		411	Sep 05/2017				
523	Sep 05/2017		412	Sep 05/2017				
524	Sep 05/2017		413	Sep 05/2017				
525	Sep 05/2017		414	BLANK				
526	Sep 05/2017		23-93-02					
527	Sep 05/2017		201	Sep 05/2017				
528	Sep 05/2017		202	Sep 05/2017				
529	Sep 05/2017		203	Jan 05/2015				
530	Sep 05/2017		204	Sep 05/2017				
531	Sep 05/2017		205	Sep 05/2017				
532	Sep 05/2017		206	Sep 05/2017				
533	Sep 05/2017		207	Sep 05/2017				

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<u>SUBJECT</u>	<u>CHAPTER SECTION</u>	<u>CONF</u>	<u>PAGE</u>	<u>EFFECT</u>
<u>COMMUNICATION - DDG MAINTENANCE PROCEDURES</u>	<u>23-00-00</u>		901	ARO ALL
MMEL 23-24-02 (DDG) Preparation - Fixed Emergency Locator Transmitter (ELT) Inoperative TASK 23-00-00-040-810			901	ARO ALL
MMEL 23-24-02 (DDG) Restoration - Fixed Emergency Locator Transmitter (ELT) Inoperative TASK 23-00-00-440-809			903	ARO ALL
MMEL 23-31-1-1 (DDG) Preparation - Passenger Address Controller Modes TASK 23-00-00-040-806			904	ARO ALL
MMEL 23-31-1-1 (DDG) Restoration - Passenger Address Controller Modes TASK 23-00-00-440-806			904	ARO ALL
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COMMUNICATION - DDG MAINTENANCE PROCEDURES

1. General

- A. This procedure has the maintenance tasks for the Master Minimum Equipment List (MMEL) maintenance requirements as shown in the Dispatch Deviations Guide (DDG). These tasks prepare the airplane for flight with certain systems/components inoperative.
- B. This procedure also has the tasks that put the airplane back to its usual condition.
- C. These are the tasks for the components in the communication system:
 - (1) MMEL 23-24-02 (DDG) Preparation - Fixed Emergency Locator Transmitter (ELT) Inoperative
 - (2) MMEL 23-24-02 (DDG) Restoration - Fixed Emergency Locator Transmitter (ELT) Inoperative
 - (3) MMEL 23-31-1-1 (DDG) Preparation - Passenger Address Controller Modes
 - (4) MMEL 23-31-1-1 (DDG) Restoration - Passenger Address Controller Modes
 - (5) MMEL 23-31-1-3A (DDG) Preparation - Inoperative Speakers Not Adjacent
 - (6) MMEL 23-31-1-3A (DDG) Restoration - Inoperative Speakers Not Adjacent
 - (7) MMEL 23-31-1-3B (DDG) Preparation - Inoperative Speakers Adjacent
 - (8) MMEL 23-31-1-3B (DDG) Restoration - Inoperative Speakers Adjacent
 - (9) MMEL 23-42-1-4 (DDG) Preparation - Cabin Interphone Controller Modes Inoperative.
 - (10) MMEL 23-42-1-4 (DDG) Restoration - Cabin Interphone Controller Modes Inoperative.
 - (11) MMEL 23-51-6-1 (DDG) Preparation - Control Wheel MIC/Interphone Switches Inoperative
 - (12) MMEL 23-51-6-1 (DDG) Restoration - Control Wheel MIC/Interphone Switches Inoperative
 - (13) MMEL 23-51-6-2 (DDG) Preparation - Flight Crew Audio Control Panel MIC/Interphone Switches Inoperative
 - (14) MMEL 23-51-6-2 (DDG) Restoration - Flight Crew Audio Control Panel MIC/Interphone Switches Inoperative
 - (15) MMEL 23-51-6-3 (DDG) Preparation - Glareshield MIC/Interphone Switches Inoperative
 - (16) MMEL 23-51-6-3 (DDG) Restoration - Glareshield MIC/Interphone Switches Inoperative
 - (17) MEL 23-71-1, Deactivation Procedure - Cockpit Voice Recorder (CVR) System
 - (18) MEL 23-71-1, Reactivation Procedure - Cockpit Voice Recorder (CVR) System
 - (19) MMEL 23-93-01 (DDG) Preparation - Overhead Panel Bus Controllers (OPBC) Inoperative

TASK 23-00-00-040-810

2. MMEL 23-24-02 (DDG) Preparation - Fixed Emergency Locator Transmitter (ELT) Inoperative

A. General

- (1) This task gives the maintenance steps which prepare the airplane for flight with the Emergency Locator Transmitter (ELT) inoperative.
- (2) The ELT may be inoperative provides:
 - (a) ELT is deactivated.
 - (b) Repairs are made within 90 calendar days.
- (3) The ELT unit is installed at either LBL 22 or RBL 22 of approximate station 1880 above the ceiling panel in the main deck. For more detail of the ELT location, see WDM 23-24-11.

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B. References

Reference	Title
WDM 23-24-11	Wiring Diagram Manual

C. Tools/Equipment

Reference	Description
STD-9906	Stepladder - 8foot

D. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

E. Prepare Procedure

SUBTASK 23-00-00-010-001



BE CAREFUL WHEN YOU ARE ABOVE THE CEILING. DAMAGE TO DUCTS, WIRE BUNDLES, CEILING PANELS, AND SUPPORT BRACES CAN OCCUR.

- (1) Open the ceiling or access panel to get access the ELT unit.

NOTE: Use a 8 foot stepladder, STD-9906 if it is necessary to get access to the ELT.

F. ELT System Deactivation

SUBTASK 23-00-00-040-006

- (1) Do the steps that follow for deactivation of the ELT system:
 - (a) Set the switch on the front panel of the ELT unit to the OFF position.
 - (b) Disconnect the electrical connector, DM23575A from the front panel of the ELT unit (WDM 23-24-11).
 - (c) Install protective caps to the electrical connectors on the airplane cable and the ELT unit.
 - (d) Stow the electrical cable that disconnected from the ELT.
 - (e) Install an INOP placard on the front panel of ELT.

SUBTASK 23-00-00-410-003

- (2) Close the ceiling or access panel for access to the ELT unit.

SUBTASK 23-00-00-910-001

- (3) In the flight compartment, install an INOP placard adjacent to the switch on the ELT control panel.

————— END OF TASK —————

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TASK 23-00-00-440-809

3. MMEL 23-24-02 (DDG) Restoration - Fixed Emergency Locator Transmitter (ELT) Inoperative

A. General

- (1) This task puts the airplane back to its usual condition after operation with the ELT system inoperative.
- (2) The ELT unit is installed at either LBL 22 or RBL 22 of approximate station 1880 above the ceiling panel in the main deck. For more detail of the ELT location, see WDM 23-24-11.

B. References

Reference	Title
23-24-00-710-803-003	Emergency Locator Transmitter (ELT) System - Operational Test (P/B 501)
WDM 23-24-11	Wiring Diagram Manual

C. Tools/Equipment

Reference	Description
STD-9906	Stepladder - 8foot

D. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

E. Prepare Procedure

SUBTASK 23-00-00-010-002



BE CAREFUL WHEN YOU ARE ABOVE THE CEILING. DAMAGE TO DUCTS, WIRE BUNDLES, CEILING PANELS, AND SUPPORT BRACES CAN OCCUR.

- (1) Open the ceiling or access panel to get access the ELT unit.
NOTE: Use a 8 foot stepladder, STD-9906 if it is necessary to get access to the ELT.

F. ELT System Restoration

SUBTASK 23-00-00-440-001

- (1) Do the steps that follow for restoration of the ELT system:
 - (a) In the flight compartment, make sure that the switch on the ELT control panel is set to the ARM or ARMED position.
 - (b) At the ELT unit, make sure that the switch on the ELT's front panel is set to the OFF position.
 - (c) Remove protective caps from the electrical connectors on the airplane cable and the ELT unit.
 - (d) Connect the electrical connector, DM23575A to the front panel of the ELT unit (WDM 23-24-11).
 - (e) Set the switch on the ELT's front panel to the ARM or ARMED position.

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G. ELT System Repair

SUBTASK 23-00-00-810-001

- (1) Do these steps to correct the fault:
 - (a) Find the fault message, fault code, or description of the fault that occurred.
 - (b) Use the fault isolation manual (FIM) to find the fault or problem in the ELT system.
 - (c) Repair the problem that you find.
 - (d) Do this task: Emergency Locator Transmitter (ELT) System - Operational Test, TASK 23-24-00-710-803-003, to make sure that the ELT system operates correctly.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 23-00-00-910-002

- (1) Remove the INOP placards from the ELT unit and the ELT control panel.

SUBTASK 23-00-00-410-004

- (2) Close the ceiling or access panel for access to the ELT unit.

————— END OF TASK —————

TASK 23-00-00-040-806

4. MMEL 23-31-1-1 (DDG) Preparation - Passenger Address Controller Modes

A. General

- (1) This task contains the maintenance steps which prepare the airplane for flight with the Passenger Address Controller Modes inoperative.
- (2) The Passenger Address Controller Modes can be inoperative under this condition:
 - (a) Operating controller mode is selected.

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Confirmation

SUBTASK 23-00-00-700-007

- (1) Push the PA NORM/ALT switch on the attendant switch panel to ALT position.
 - (a) Make sure the light on the PA NORM/ALT switch is on.
NOTE: The PA NORM/ALT light is on when the PA controller operates on the alternate side.
 - (b) Make sure that the PASSENGER ADDRESS status message is not displayed.

————— END OF TASK —————

TASK 23-00-00-440-806

5. MMEL 23-31-1-1 (DDG) Restoration – Passenger Address Controller Modes

A. General

- (1) This task puts the airplane back to its usual condition after operation with Passenger Address Controller Modes inoperative.
- (2) To put the airplane to usual condition, replace the Passenger Address/Cabin Interphone Controller (PA/CI).

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B. References

Reference	Title
23-39-03 P/B 401	PASSENGER ADDRESS/CABIN INTERPHONE CONTROLLER - REMOVAL/INSTALLATION

C. Procedure

SUBTASK 23-00-00-900-007

- (1) Do the task: PASSENGER ADDRESS/CABIN INTERPHONE CONTROLLER - REMOVAL/INSTALLATION, PAGEBLOCK 23-39-03/401
- (2) Do the steps that follow to set the controller operating mode to normal:
 - (a) Push the PA NORM/ALT switch on the Attendant Switch Panel (ASP) to NORM position.
 - (b) Make sure that the PA NORM/ALT switch light turns off (normal mode).

————— END OF TASK —————

TASK 23-00-00-040-807

6. MMEL 23-31-1-3A (DDG) Preparation – Inoperative Speakers Not Adjacent

A. General

- (1) This task gives the maintenance steps which prepare the airplane for flight with the speakers not adjacent inoperative.
- (2) The speakers not adjacent can be inoperative under this condition:
 - (a) Inoperative speakers are not adjacent to each other.

B. References

Reference	Title
23-31-00-720-801	Passenger Address (PA) System Functional Check (P/B 501)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Confirmation

SUBTASK 23-00-00-700-004

- (1) Do the steps that follow to confirm that no adjacent cabin speakers are inoperative:

NOTE: Some cabin speaker drive module faults can result in PASSENGER ADDRESS condition message being shown when the related speakers operate correctly.

 - (a) Do this task: Passenger Address (PA) System Functional Check, TASK 23-31-00-720-801.
 - (b) Make sure that inoperative cabin speakers are not adjacent (forward to aft).

————— END OF TASK —————

TASK 23-00-00-440-807

7. MMEL 23-31-1-3A (DDG) Restoration – Inoperative Speakers Not Adjacent

A. General

- (1) This task puts the airplane back to its usual condition after operation with the non adjacent speakers inoperative.
- (2) To put the airplane to usual condition, replace the speaker drive module.

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B. References

Reference	Title
23-31-02 P/B 401	SPEAKER DRIVE MODULE - REMOVAL/INSTALLATION

C. Procedure

SUBTASK 23-00-00-900-006

- (1) Do the task: SPEAKER DRIVE MODULE - REMOVAL/INSTALLATION, PAGEBLOCK 23-31-02/401

————— **END OF TASK** —————

TASK 23-00-00-040-808

8. MMEL 23-31-1-3B (DDG) Preparation – Inoperative Speakers Adjacent

A. General

- (1) This task gives the maintenance steps which prepare the airplane for flight with the adjacent speakers inoperative.
- (2) The adjacent speakers can be inoperative under this condition:
 - (a) Inoperative speakers are adjacent to each other.

B. References

Reference	Title
23-31-00-720-801	Passenger Address (PA) System Functional Check (P/B 501)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Confirmation

SUBTASK 23-00-00-700-005

- (1) Do the steps that follow to confirm that adjacent cabin speakers are inoperative:

NOTE: Some cabin speaker drive module faults can result in PASSENGER ADDRESS condition message being shown when the related speakers operate correctly.

 - (a) Do this task: Passenger Address (PA) System Functional Check, TASK 23-31-00-720-801.
 - (b) Make sure that the passenger seat, cabin attendant seat or crew rest area bunk where passenger address system can not be heard are blocked and have DO NOT OCCUPY placard.

————— **END OF TASK** —————

TASK 23-00-00-440-808

9. MMEL 23-31-1-3B (DDG) Restoration – Inoperative Speakers Adjacent

A. General

- (1) This task puts the airplane back to its usual condition after operation with the adjacent speakers inoperative.
- (2) To put the airplane to usual condition, replace the speaker drive module.

B. References

Reference	Title
23-31-02 P/B 401	SPEAKER DRIVE MODULE - REMOVAL/INSTALLATION

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C. Procedure

SUBTASK 23-00-00-900-005

- (1) Do the task: SPEAKER DRIVE MODULE - REMOVAL/INSTALLATION, PAGEBLOCK 23-31-02/401

————— **END OF TASK** —————

TASK 23-00-00-040-805

10. MMEL 23-42-1-4 (DDG) Preparation - Cabin Interphone Controller Modes (CIC) Inoperative

A. General

- (1) This task gives the maintenance steps which prepare the airplane for flight with the Cabin Interphone Controller Modes (CIC) inoperative.
 - (a) If the normal CIC is inoperative, the flight attendant can select the alternate CIC.

B. Procedure

SUBTASK 23-00-00-040-003

- (1) Do the steps that follow to select the alternate CIC:
 - (a) Press the CI NORM/ALT switch on the Attendant Switch Panel (ASP) to ALT position.
 - (b) Make sure that the CI NORM/ALT switch light turn on (ALT mode).
 - (c) Make sure the CABIN INTERPHONE status message does not show on the display.

————— **END OF TASK** —————

TASK 23-00-00-440-805

11. MMEL 23-42-1-4 (DDG) Restoration - Cabin Interphone Controller Modes (CIC) Inoperative

A. General

- (1) This task puts the airplane back to its usual condition after operation with a Cabin Interphone Controller Modes inoperative.

B. References

Reference	Title
23-39-03 P/B 401	PASSENGER ADDRESS/CABIN INTERPHONE CONTROLLER - REMOVAL/INSTALLATION

C. Activation Procedure

SUBTASK 23-00-00-900-004

- (1) Replace the Passenger Address/Cabin Interphone Controller (PA/CI):
 - (a) Do the task: PASSENGER ADDRESS/CABIN INTERPHONE CONTROLLER - REMOVAL/INSTALLATION, PAGEBLOCK 23-39-03/401

SUBTASK 23-00-00-840-001

- (2) Do the steps that follow to set the controller operating mode to normal:
 - (a) Push the CI NORM/ALT switch on the Attendant Switch Panel (ASP) to NORM position.
 - (b) Make sure that the CI NORM/ALT switch light turns off (normal mode).

————— **END OF TASK** —————

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TASK 23-00-00-040-801

12. **MMEL 23-51-6-1 (DDG) Preparation - Control Wheel MIC/Interphone Switches Inoperative**

A. General

- (1) This task contains the maintenance steps which prepare the airplane for flight with the Control Wheel Microphone (MIC)/Interphone Switches inoperative.
- (2) The Control Wheel MIC/Interphone switch can be inoperative under these conditions:
 - (a) The associated Audio Control Panel MIC/Interphone switch operates normally.
 - (b) The inoperative switch is deactivated open.

B. References

Reference	Title
23-51-06-000-801	Control Wheel PTT Switch Removal (P/B 401)
24-22-00-860-805	Supply Electrical Power (P/B 201)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. MIC/Interphone Switches Deactivation

SUBTASK 23-00-00-860-001

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-00-00-860-002

- (2) Remove the switch on the control wheel to get access to the wire (TASK 23-51-06-000-801).

SUBTASK 23-00-00-020-001

- (3) Disconnect, cap and stow the wires from the MIC/Interphone switch.

SUBTASK 23-00-00-420-001

- (4) Reinstall the MIC/Interphone switch in the control wheel.

SUBTASK 23-00-00-860-003

- (5) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-00-00-930-001

- (6) Put an INOP placard on the MIC/Interphone switch.

E. Confirmation

SUBTASK 23-00-00-700-001

- (1) Do the steps that follow to confirm that the inoperative switch is deactivated open and the associated ACP MIC/Interphone switch operates normally:
 - (a) Do this task: Supply Electrical Power, TASK 24-22-00-860-805

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- (b) Push the FLT microphone selector switch on the Captain's and First Officer's Audio Control Panel.
- (c) Make sure the FLT MIC light comes on.
- (d) Make sure the FLT volume controls are at approximately the middle position.
- (e) Push the deactivated Control Wheel MIC/Interphone switch and speak into the associated pilot's microphone.
- (f) Make sure you hear no voice at the other pilot's headset.
- (g) Push the associated pilot's Audio Control Panel MIC/Interphone switch and speak into the associated pilot's microphone.
- (h) Make sure you hear your voice clearly at the other pilot's headset.

————— **END OF TASK** —————

TASK 23-00-00-440-801

13. MMEL 23-51-6-1 (DDG) Restoration - Control Wheel MIC/Interphone Switches Inoperative

A. General

- (1) This task puts the airplane back to its usual condition after operation with the Control Wheel Microphone (MIC)/Interphone switches inoperative.
- (2) To put the airplane to usual condition, replace the inoperative Control Wheel MIC/Interphone PTT switch.

B. References

Reference	Title
23-51-06 P/B 401	CONTROL WHEEL PTT SWITCH - REMOVAL/INSTALLATION

C. Procedure

SUBTASK 23-00-00-900-001

- (1) Do the task: CONTROL WHEEL PTT SWITCH - REMOVAL/INSTALLATION, PAGEBLOCK 23-51-06/401

————— **END OF TASK** —————

TASK 23-00-00-040-803

14. MMEL 23-51-6-2 (DDG) Preparation - Flight Crew Audio Control Panel MIC/Interphone Switches Inoperative

A. General

- (1) This task contains the maintenance steps which prepare the airplane for flight with the Flight Crew Audio Control Panel Microphone (MIC)/Interphone Switches inoperative.
- (2) The Audio Control Panel MIC/Interphone switch can be inoperative under these conditions:
 - (a) The associated control wheel MIC/Interphone switch operates normally.
 - (b) The inoperative switch is deactivated open.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

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C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Confirmation

SUBTASK 23-00-00-700-002

- (1) Do the steps that follow to confirm that the inoperative ACP MIC/Interphone switch is inoperative open and the associated control wheel MIC/Interphone switch operates normally:
 - (a) Do this task: Supply Electrical Power, TASK 24-22-00-860-805
 - (b) Push the PA microphone selector switch on the associated audio control panel.
 - (c) Make sure that the PA MIC light comes on.
 - (d) Speak into the associated microphone without pushing any MIC/Interphone switch.
 - (e) Make sure you hear no voice on the PA system.
 - (f) Push the inoperative ACP MIC/Interphone switch and speak into the associated microphone.
 - (g) Make sure you hear no voice at the other pilot's headset.
 - (h) Push the associated pilot's control wheel MIC/Interphone switch and speak into the associated microphone.
 - (i) Make sure you hear your voice clearly at the other pilot's headset.

————— END OF TASK —————

TASK 23-00-00-440-803

15. M MEL 23-51-6-2 (DDG) Restoration - Flight Crew Audio Control Panel MIC/Interphone Switches Inoperative

A. General

- (1) This task puts the airplane back to its usual condition after operation with the Flight Crew Audio Control Panel Microphone (MIC)/Interphone switches inoperative.
- (2) To put the airplane to usual condition, replace the Audio Control Panel with the inoperative switch.

B. References

Reference	Title
23-51-01 P/B 401	AUDIO CONTROL PANEL - REMOVAL/INSTALLATION

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Procedure

SUBTASK 23-00-00-900-002

- (1) Do the task: AUDIO CONTROL PANEL - REMOVAL/INSTALLATION, PAGEBLOCK 23-51-01/401

————— END OF TASK —————

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TASK 23-00-00-040-804

16. MMEL 23-51-6-3 (DDG) Preparation - Glareshield MIC/Interphone Switches Inoperative

A. General

- (1) This task contains the maintenance steps which prepare the airplane for flight with the Glareshield Microphone (MIC)/Interphone Switches inoperative.
- (2) The Glareshield MIC/Interphone switch can be inoperative when it is deactivated open.

B. References

Reference	Title
23-51-07-000-801	Glareshield PTT Switch - Removal (P/B 401)
24-22-00-860-805	Supply Electrical Power (P/B 201)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Glareshield MIC/Interphone Switches Deactivation

SUBTASK 23-00-00-000-004

- (1) Do this task: Glareshield PTT Switch - Removal, TASK 23-51-07-000-801.

SUBTASK 23-00-00-040-001

- (2) Disconnect, cap and stow the wires from the Glareshield MIC/Interphone switch.

SUBTASK 23-00-00-410-002

- (3) Install the switch panel in the glareshield panel.

SUBTASK 23-00-00-860-010

- (4) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-00-00-040-002

- (5) Put an INOP placard on the MIC/Interphone switch.

E. Confirmation

SUBTASK 23-00-00-700-003

- (1) Do the steps that follow to confirm that the inoperative Glareshield MIC/Interphone switch is deactivated open:
 - (a) Do this task: Supply Electrical Power, TASK 24-22-00-860-805
 - (b) Push the FLT microphone selector switch on the Captain's and First Officer's Audio Control Panel.
 - (c) Make sure that the FLT MIC light comes on
 - (d) Make sure the FLT volume control is at approximately the middle position.
 - (e) Push the deactivated Glareshield MIC/Interphone switch and speak into the associated pilot's microphone.
 - (f) Make sure you hear no voice at the other pilot's headset.

————— END OF TASK —————

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TASK 23-00-00-440-804

17. MMEL 23-51-6-3 (DDG) Restoration - Glareshield MIC/Interphone Switches Inoperative

A. General

- (1) This task puts the airplane back to its usual condition after operation with the Glareshield Microphone (MIC)/Interphone switch inoperative.
- (2) To put the airplane to usual condition, replace the inoperative Glareshield Microphone (MIC)/Interphone switch.

B. References

Reference	Title
23-51-07 P/B 401	GLARESHIELD PTT SWITCH - REMOVAL/INSTALLATION

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Procedure

SUBTASK 23-00-00-900-003

- (1) Do the task: GLARESHIELD PTT SWITCH - REMOVAL/INSTALLATION, PAGEBLOCK 23-51-07/401

————— **END OF TASK** —————

TASK 23-00-00-040-811

18. MEL 23-71-1, Deactivation Procedure - Cockpit Voice Recorder (CVR) System

A. General

- (1) This procedure deactivates the cockpit voice recorder (CVR) if it is not operating correctly.
- (2) May be inoperative provided:
 - (a) Flight Data Recorder (FDR) operates normally.
 - (b) Repairs are made within three flight days.

B. References

Reference	Title
23-71-00 P/B 501	COCKPIT VOICE RECORDER (CVR) SYSTEM - ADJUSTMENT/TEST
31-31-00 P/B 501	FLIGHT DATA RECORDER SYSTEM (FDRS) - ADJUSTMENT/TEST

C. Location Zones

Zone	Area
221	Passenger Compartment, Left - Section 41
222	Passenger Compartment, Right - Section 41

D. Procedure

SUBTASK 23-00-00-710-002

- (1) Do the operational test on the cockpit voice recorder system (COCKPIT VOICE RECORDER (CVR) SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 23-71-00/501).

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- (a) If the Voice Recorder operational test did not pass, then do this:

NOTE: The Voice Recorder System must be made operational within three flight days of performing this procedure.

- (b) Open this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	C23425	VOX RCDR

SUBTASK 23-00-00-710-003

- (2) Do the Flight Data Recorder Test (FLIGHT DATA RECORDER SYSTEM (FDRS) - ADJUSTMENT/TEST, PAGEBLOCK 31-31-00/501).

SUBTASK 23-00-00-860-011

- (3) If the Flight Data Recorder is operational, the airplane can be dispatched.

————— **END OF TASK** —————

TASK 23-00-00-440-810

19. MEL 23-71-1, Reactivation Procedure - Cockpit Voice Recorder (CVR) System

A. General

- (1) This procedure puts the airplane back to the usual configuration.

B. References

<u>Reference</u>	<u>Title</u>
23-71-01 P/B 401	COCKPIT VOICE RECORDER - REMOVAL/INSTALLATION

C. Location Zones

<u>Zone</u>	<u>Area</u>
221	Passenger Compartment, Left - Section 41
222	Passenger Compartment, Right - Section 41

D. Procedure

SUBTASK 23-00-00-900-008

- (1) Do the removal and installation procedure for the voice recorder (COCKPIT VOICE RECORDER - REMOVAL/INSTALLATION, PAGEBLOCK 23-71-01/401)

————— **END OF TASK** —————

TASK 23-00-00-040-809

20. MMEL 23-93-01 (DDG) - Overhead Panel Bus Controllers (OPBC) Inoperative

A. General

- (1) These tasks prepare the airplane for flight with the overhead panel bus controllers (OPBC) inoperative.
- (2) One OPBC may be inoperative provided:
- (a) One air conditioning pack operates normally.
 - (b) Both auto cabin pressure controls operate normally.
 - (c) For takeoff and landing, one center system hydraulic demand pump is selected ON.
 - (d) The left and right pitot and static air data modules operate normally for the left OPBC inoperative.

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- (3) Use this task to make sure the opposite Overhead Panel ARINC 629 System (OPAS) operates normally when one OPAS is inoperative.

NOTE: The intent of this task is to verify the opposite side OPAS system operates normally when the other OPAS system is inoperative. Therefore, there are no preparation (deactivate) or restoration (reactivate) tasks associated with this DDG item.

NOTE: The left and right Overhead Panel Bus Controllers (OPBC) are interchangeable (OVERHEAD PANEL BUS CONTROLLER - REMOVAL/INSTALLATION, PAGEBLOCK 23-93-01/401). The left and right Panel Data Concentrator Units (PDCU) are interchangeable (PANEL DATA CONCENTRATOR UNIT (PDCU) - REMOVAL/INSTALLATION, PAGEBLOCK 23-93-03/401). The Overhead Panel Interface Cards (OPIC) are interchangeable (OVERHEAD PANEL CARD FILE - MAINTENANCE PRACTICES, PAGEBLOCK 23-93-02/201).

NOTE: The Generator Drive lights will be inoperative.

B. References

Reference	Title
23-93-01 P/B 401	OVERHEAD PANEL BUS CONTROLLER - REMOVAL/INSTALLATION
23-93-02 P/B 201	OVERHEAD PANEL CARD FILE - MAINTENANCE PRACTICES
23-93-03 P/B 401	PANEL DATA CONCENTRATOR UNIT (PDCU) - REMOVAL/INSTALLATION

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Right OPAS Inoperative

SUBTASK 23-00-00-040-004

- (1) For the right OPBC inoperative, make sure the left system OPAS operates normally as follows:

- (a) Make sure the OPBC L, PDCU L, OPIC LA1 and OPIC RA1 status messages do not show.
- (b) Open this circuit breaker and wait at least 5 seconds:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
D	6	C23603	OPAS 1

- (c) Close this circuit breaker and wait at least 10 seconds:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
D	6	C23603	OPAS 1

- (d) Make sure the OPBC L, PDCU L, OPIC LA1 and OPIC RA1 status messages do not show.

E. Left OPAS Inoperative

SUBTASK 23-00-00-040-005

- (1) For the left OPBC inoperative, make sure the right system OPAS operates normally as follows:

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- (a) Make sure the OPBC R, PDCU R, OPIC RA2 and OPIC LA2 status messages do not show.
- (b) Open this circuit breaker and wait at least 5 seconds:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	C23602	OPAS 2

- (c) Close this circuit breaker and wait at least 10 seconds:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	C23602	OPAS 2

- (d) Make sure the OPBC R, PDCU R, OPIC RA2 and OPIC LA2 status messages do not show.

———— **END OF TASK** ————

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HIGH FREQUENCY (HF) COMMUNICATION SYSTEM - MAINTENANCE PRACTICES

1. General

A. This task has these tasks:

- (1) High Frequency (HF) Communication System Deactivation.
- (2) High Frequency (HF) Communication System Activation.

TASK 23-11-00-040-801

2. High Frequency (HF) Communication System - Deactivation

A. General

- (1) This task removes electrical power from the High Frequency (HF) Communication System.

B. Location Zones

Zone	Area
152	Aft Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

C. Procedure

SUBTASK 23-11-00-860-009

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

D. High Frequency (HF) Communication System - Tryout

NOTE: This tryout is to make sure the High Frequency (HF) Communication System is in a zero energy state.

SUBTASK 23-11-00-860-010

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

SUBTASK 23-11-00-700-001

- (2) Make sure the following indications show on the AIMS display panel:
 - (a) HF-L FAIL
 - (b) HF-R FAIL

————— **END OF TASK** —————

TASK 23-11-00-440-801

3. High Frequency (HF) Communication System - Activation

A. General

- (1) This task adds electrical power to the High Frequency (HF) Communication System.

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B. Location Zones

Zone	Area
152	Aft Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

C. Procedure

SUBTASK 23-11-00-860-011

- (1) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

SUBTASK 23-11-00-700-002

- (2) Make sure the following indications no longer show on the AIMS display panel:
- (a) HF-L FAIL
 - (b) HF-R FAIL

———— **END OF TASK** ————

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HIGH FREQUENCY (HF) COMMUNICATION SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) An operational test of the high frequency (HF) communication system.
 - (2) A system test of the HF communication system.
- C. The left, right, and center radio tuning panels (RTPs) are installed on the aft aisle stand panel, P8, in the flight compartment.

TASK 23-11-00-710-801

2. HF Communication System - Operational Test

A. General

- (1) The operational test does a check of the internal functions of the HF communication transceiver. The operational test also does a check of the radio tuning panel input to the HF communication transceiver.
- (2) The same sequence of steps is used for the left, or right (if installed) HF communication system.
- (3) The HF communication system does not transmit during the operational test. The operational test does not include a check of the HF antenna coupler or the HF communication antenna. Use the system test to do a full test of the HF communication system.
- (4) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Procedure

SUBTASK 23-11-00-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-11-00-740-001

- (2) Use a maintenance access terminal (MAT) to do the system test for each HF communication system (HF L, HF R):
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 HF Communication System

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- 5) SYSTEM TEST
 - 6) Left (Right) HF Communication System
 - 7) CONTINUE
- (b) Do the instructions that show on the MAT and then make these selections:
- 1) CONTINUE
 - 2) START TEST
- (c) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
- (d) If FAILED shows, refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

————— **END OF TASK** —————

TASK 23-11-00-730-801

3. HF Communication System - System Test

A. General

- (1) The system test includes these tests:
 - (a) An operational test.
 - (b) An interface test between the radio tuning panels (RTP to RTP).
 - (c) A communication test.
- (2) Make sure the flight interphone system operates correctly. The communication test uses these flight interphone system components: audio control panels, headsets, and MIC/Interphone switches.
- (3) When you do the HF communication test, make sure the airplane is not in or near any large metal structures. HF communication while the airplane is on the ground will be degraded by airplane position or blocked by RF signal attenuation due to ground equipment and structures. If the quality of the transmitted and received voice signals are not satisfactory, move the airplane to a better position and rerun the test.
- (4) Make sure you use approved test frequencies when you speak with the tower radio operator.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Procedure

SUBTASK 23-11-00-860-003

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

E. Operational Test

SUBTASK 23-11-00-710-001

- (1) Do this task: HF Communication System - Operational Test, TASK 23-11-00-710-801.

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F. RTP to RTP Interface Test

SUBTASK 23-11-00-710-002

(1) Do these steps to do the RTP to RTP interface test:

- (a) Push and release the HF L switch at RTP-L.
- (b) Push and release the HF R switch at RTP-R.
- (c) Push and release the VHF C switch at RTP-C.
- (d) On each RTP, make sure the offside tuning light is off.

NOTE: The offside tuning light is the light between the ACTIVE and STANDBY frequency windows.

- (e) Push and release the HF R switch on RTP-L.
 - 1) On RTP-L and RTP-R, make sure the offside tuning lights are on.
- (f) Push and release the HF L switch on RTP-L.
 - 1) On RTP-L and RTP-R, make sure the offside tuning lights are off.
- (g) Push and release the HF L switch on RTP-R.
 - 1) On RTP-L and RTP-R, make sure the offside tuning lights are on.
- (h) Push and release the HF R switch on RTP-R.
 - 1) On RTP-L and RTP-R, make sure the offside tuning lights are off.
- (i) Push and release the HF L switch on RTP-C.
 - 1) On RTP-L and RTP-C, make sure the offside tuning lights are on.
- (j) Push and release the HF R switch on RTP-C.
 - 1) On RTP-R and RTP-C, make sure the offside tuning lights are on.
 - 2) On RTP-L, make sure the offside tuning light is off.
- (k) Push and release the VHF C switch on RTP-C.
 - 1) On RTP-R and RTP-C, make sure the offside tuning lights are off.

G. Internal Cooling Fan Test

SUBTASK 23-11-00-730-001

(1) To test the internal cooling fan for the left HF transceiver, do this step

- (a) At the HF-L transceiver unit, make sure that the HF-L transceiver's internal cooling fan is running.

(2) To test the internal cooling fan for the right HF transceiver, do this step

- (a) At the HF-R transceiver unit, make sure that the HF-R transceiver's internal cooling fan is running.

H. Communication Test

SUBTASK 23-11-00-860-004

(1) On RTP-L, make sure the HF L switch light is on.

SUBTASK 23-11-00-860-005

(2) On RTP-R, make sure the HF R switch light is on.

SUBTASK 23-11-00-860-006

(3) On RTP-C, make sure the VHF C switch light is on.

SUBTASK 23-11-00-860-007

(4) Make sure each RTP shows a different ACTIVE frequency.

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- (a) Make sure the ACTIVE frequencies on RTP-L and RTP-R are not the same as the test frequencies that you will use in this test.
- (b) If you must change the ACTIVE frequency, set the STANDBY frequency window to the new frequency.
 - 1) Push and release the frequency transfer switch.

SUBTASK 23-11-00-860-008

- (5) At each audio control panel (captain's, first officer's, and first observer's ACP), push the applicable receiver volume controls to make all the receiver lights go off.

SUBTASK 23-11-00-710-003



DO NOT TRANSMIT WITH THE HF COMMUNICATION SYSTEM WHILE YOU REFUEL OR DEFUEL THE AIRPLANE. AN EXPLOSION CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.



MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF COMMUNICATION ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

- (6) Do the HF L communication test at the RTP-L with the captain's ACP and headset.
 - (a) Do these steps at the captains ACP:
 - 1) Push and release the HF L receiver volume control.
 - 2) Push and release the HF L transmitter select switch.
 - 3) Set the HF L receiver volume control to the middle position.
 - (b) Do these steps at RTP-L:
 - 1) If the AM lamp is on, do this step:
 - a) Push and release the AM switch light. Make sure the AM light goes off.
NOTE: When the AM light is off, the mode of operation is upper side band (USB).
 - 2) Turn the HF SENS knob fully clockwise.
 - 3) Set the frequency in STANDBY window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 4) Push and release the frequency transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
 - (c) On the captain's ACP, set the Mic/Interphone switch to the MIC position.
 - 1) Make sure you hear a tone in the headset while the system tunes to the new frequency.
NOTE: A continuous or pulsed tone indicates that the coupler is tuning to a new frequency. The coupler tune tone will sound no longer than 15 seconds. The average coupler tune time is 1 to 7 seconds.
NOTE: Some couplers save tuning information for up to 100 frequencies. These couplers can fast tune to saved frequencies. The average fast tune time is 0.2 to 1.0 seconds. A tune tone may not always be audible for a previously tuned frequency.

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- (d) Speak with the radio tower operator:
 - 1) Push and hold the Mic/Interphone switch in the MIC position while you speak.
 - 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
 - 3) While you hear the received voice, turn the HF SENS knob fully counterclockwise and then fully clockwise.
 - a) Make sure the sound of the received voice decreases and then increases.
 - 4) While you hear the received voice, turn the HF L receiver volume control on the captain's ACP.
 - a) Make sure the volume of the sound changes without a change in the quality of the sound.
- (e) On the ACP, push and release the HF L receiver volume control.

SUBTASK 23-11-00-710-004

- (7) Do the HF L test at the RTP-R with the first officer's ACP and headset.
 - (a) Do these steps at the first officer's ACP:
 - 1) Push and release the HF L receiver volume control.
 - 2) Push and release the HF L transmitter select switch.
 - 3) Set the HF L receiver volume control to the middle position.
 - (b) Do these steps at the RTP-R:
 - 1) Push and release the HF L switch.
 - 2) Make sure the USB mode is set (AM lamp is off).
 - 3) Set the frequency in the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 4) Push and release the frequency transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
 - (c) On the first officer's ACP, push and hold the Mic/Interphone switch to the MIC position.
 - 1) Make sure you hear a tone in the headset while the system tunes to the new frequency.
 - (d) Speak with the radio tower operator:
 - 1) Push and hold the Mic/Interphone switch in the MIC position while you speak.
 - 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
 - 3) While you hear the received voice, turn the HF L receiver volume control on the first officer's ACP.
 - a) Make sure the volume of the sound changes without a change in the quality of the sound.
 - (e) On the first officer's ACP, push and release the HF L receiver volume control.

SUBTASK 23-11-00-710-005

- (8) Do the HF L test at the RTP-C with the first observer's ACP and headset.
 - (a) Do these steps at the first observer's ACP:

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- 1) Push and release the HF L receiver volume control.
 - 2) Push and release the HF L transmitter select switch.
 - 3) Set the HF L receiver volume control to the middle position.
- (b) Do these steps at RTP-C:
- 1) Push and release the HF L switch.
 - 2) Make sure the USB mode is set (AM lamp is off).
 - 3) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 4) Push and release the frequency transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
- (c) On the first observer's ACP, push and hold the Mic/Interphone switch in the MIC position.
- 1) Make sure you hear a tone in the headset while the system tunes to the new frequency.
- (d) Speak with the tower radio operator:
- 1) Push and hold the Mic/Interphone switch in the MIC position while you speak.
 - 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
 - 3) While you hear the received voice, turn the HF L receiver volume control on the first observer's ACP.
 - a) Make sure the volume of the sound changes without a change in the quality of the sound.
- (e) On the first observer's ACP, push and release the HF L receiver volume control.

SUBTASK 23-11-00-710-006

- (9) Do the HF R test at RTP-L with the captain's ACP and headset:
- (a) Do these steps at the captain's ACP:
- 1) Push and release the HF R receiver volume control.
 - 2) Push and release the HF R transmitter select switch.
 - 3) Set the HF R receiver volume control to the middle position.
- (b) Do these steps at RTP-L:
- 1) Push and release the HF R switch.
 - 2) If the AM lamp is on, do this step:
 - a) Push and release the AM switch light. Make sure the AM light goes off.
NOTE: When the AM light is off, the mode of operation is upper side band (USB).
 - 3) Turn the HF SENS knob fully clockwise.
 - 4) Set the STANDBY frequency display to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 5) Push and release the frequency transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
- (c) On the captains's ACP, push and release the Mic/Interphone switch to the MIC position.

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- 1) Make sure you hear a tone in the headset while the system tunes to the new frequency.
- (d) Speak with the radio tower operator:
 - 1) Push and hold the Mic/Interphone switch in the MIC position while you speak.
 - 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
 - 3) While you hear the received voice, turn the HF SENS knob fully counterclockwise and then fully clockwise.
 - a) Make sure the sound of the received voice decreases and then increases.
 - 4) While you hear the received voice, turn the HF R receiver volume control on the captain's ACP.
 - a) Make sure the volume of the sound changes without a change in the quality of the sound.
- (e) On the captain's ACP, push and release the HF R receiver volume control.

SUBTASK 23-11-00-710-007

- (10) Do the HF R test at RTP-R with the first officer's ACP and headset:
 - (a) Do these steps at the first officer's ACP:
 - 1) Push and release the HF R receiver volume control.
 - 2) Push and release the HF R transmitter select switch.
 - 3) Set the HF R receiver volume control to the middle position.
 - (b) Do these steps at RTP-R:
 - 1) Push and release the HF R switch.
 - 2) Make sure the USB mode is set (AM lamp is off).
 - 3) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 4) Push and release the frequency transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
 - (c) On the first officer's ACP, push and release the Mic/Interphone switch to the MIC position.
 - 1) Make sure you hear a tone in the headset while the system tunes to the frequency.
 - (d) Speak with the tower radio operator:
 - 1) Push and hold the Mic/Interphone switch in the MIC position while you speak.
 - 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
 - 3) While you hear the received voice, turn the HF R receiver volume control on the first officer's ACP.
 - a) Make sure the volume of the sound changes without a change in the quality of the sound.
 - (e) On the first officer's ACP, push and release the HF R receiver volume control.

SUBTASK 23-11-00-710-008

- (11) Do the HF R test at RTP-C with the first observer's ACP and headset:
 - (a) Do these steps at the first observer's ACP:

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- 1) Push and release the HF R receiver volume control.
- 2) Push and release the HF R transmitter select switch.
- 3) Set the HF R receiver volume control to the middle position.
- (b) Do these steps at RTP-C:
 - 1) Push and release the HF R switch.
 - 2) Make sure the USB mode is set (AM lamp is off).
 - 3) Set the STANDBY frequency display to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 4) Push and release the frequency transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
- (c) On the first observer's ACP, push and release the Mic/Interphone switch to the MIC position.
 - 1) Make sure you hear a tone in the headset while the system tunes to the new frequency.
- (d) Speak with the radio tower operator:
 - 1) Push and hold the Mic/Interphone switch in the MIC position while you speak.
 - 2) Release the Mic/Interphone switch while you listen.
 - 3) Make sure the quality of the transmitted and received voice is good.
 - 4) While you hear the received voice, turn the HF R receiver volume control on the first observer's ACP.
 - a) Make sure the volume of the sound changes without a change in the quality of the sound.
- (e) On the first observer's ACP, push and release the HF R receiver volume control.

SUBTASK 23-11-00-710-009

- (12) If two modes of operation (AM and USB) are available at your location, do these steps:
 - (a) With the mode set for AM, do the communication test for HF L at RTP-L with the captain's ACP and headset.
 - (b) With the mode set for AM, do the communication test for HF R at RTP-R with the captain's ACP and headset.

———— **END OF TASK** ————

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HF COMMUNICATION ANTENNA COUPLER - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of an HF communication antenna coupler.
 - (2) An installation of an HF communication antenna coupler.
- B. The left and right HF communication antenna couplers, M23102, and M23202 are installed in the vertical stabilizer.

TASK 23-11-03-000-801

2. HF Communication Antenna Coupler Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
20-10-01-000-801	E/E Box Removal (P/B 401)
20-10-23-000-801	Lockwire, Cotter Pins, and Lockrings - Removal (P/B 401)
24-22-00-860-805	Supply Electrical Power (P/B 201)
55-34-01-000-801	Vertical Stabilizer Forward Box Panels Removal (P/B 401)

B. **Location Zones**

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
322	Vertical Stabilizer - Auxiliary Spar to Front Spar

C. **Access Panels**

Number	Name/Location
322FL	Vertical Stabilizer Forward Box Panel

D. **Prepare for the Removal**

SUBTASK 23-11-03-860-001

- (1) Make sure that these circuit breakers are closed:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

SUBTASK 23-11-03-860-002

- (2) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

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E. Removal Procedure

SUBTASK 23-11-03-040-001



WARNING

REMOVE THE ELECTRICAL POWER FROM EACH HF COMMUNICATION SYSTEM BEFORE YOU OPEN THE ACCESS PANEL FOR THE HF ANTENNA COUPLER. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURY TO PERSONS.

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

SUBTASK 23-11-03-010-001

- (2) To remove the vertical stabilizer panel [1], do this task: Vertical Stabilizer Forward Box Panels Removal, TASK 55-34-01-000-801.

NOTE: Two different types of bolts (small and large) attach the access panel.

Remove this access panel:

<u>Number</u>	<u>Name/Location</u>
322FL	Vertical Stabilizer Forward Box Panel

SUBTASK 23-11-03-020-002

- (3) If applicable, remove the lockwire from the coaxial connector [4]. To remove it, do this task: Lockwire, Cotter Pins, and Lockrings - Removal, TASK 20-10-23-000-801.

SUBTASK 23-11-03-030-001

- (4) Disconnect the electrical connector [3] and the coaxial connector [4] from the HF antenna coupler [2].

SUBTASK 23-11-03-020-001



CAUTION

MOVE THE HF ANTENNA COUPLER CAREFULLY. SET THE HF ANTENNA COUPLER ON ITS BOTTOM. DO NOT SET THE HF ANTENNA COUPLER ON ITS END (WITH THE HANDLE UP). INTERNAL PARTS ARE EASILY DAMAGED.

- (5) Remove the HF antenna coupler [2]. To remove it, do this task: E/E Box Removal, TASK 20-10-01-000-801.

————— END OF TASK —————

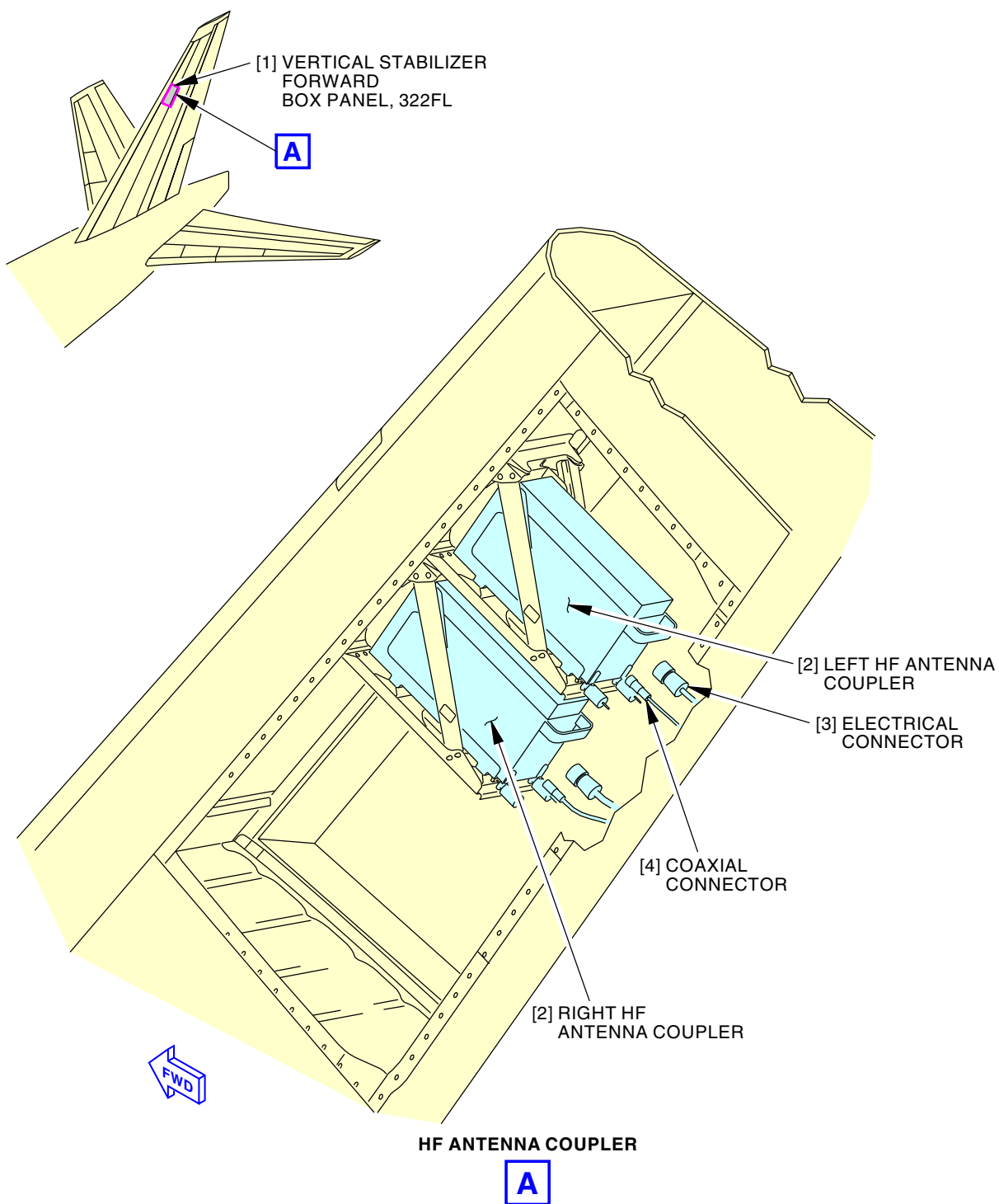
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HF Antenna Coupler Installation
Figure 401/23-11-03-990-801

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TASK 23-11-03-400-801

3. HF Communication Antenna Coupler Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) Make sure the flight interphone system operates. The installation test uses these flight interphone system components; audio control panels, headsets, microphones, and Push-To-Talk (PTT) switches.
- (2) Make sure the airplane is not in or near any large metal structures when you run the installation test. HF communications while the airplane is on the ground can be degraded by airplane position or blocked by RF signal attenuation due to ground equipment or structures. If the quality of the transmitted and received voice signals are not satisfactory, move the airplane to a better position and rerun the test.

NOTE: This is not a full test of the system. If a full test is necessary, do the system test (TASK 23-11-00-730-801).

- (3) Make sure you use approved test frequencies when you speak with the tower radio operator.

B. References

Reference	Title
20-10-01-400-801	E/E Box Installation (P/B 401)
20-10-23-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
23-11-00-730-801	HF Communication System - System Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
55-34-01-400-801	Vertical Stabilizer Forward Box Panels Installation (P/B 401)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	HF antenna coupler	23-11-03-01B-050	ARO ALL

D. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
322	Vertical Stabilizer - Auxiliary Spar to Front Spar

E. Access Panels

Number	Name/Location
322FL	Vertical Stabilizer Forward Box Panel

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F. Installation Procedure

SUBTASK 23-11-03-860-005



WARNING

MAKE SURE THE ELECTRICAL POWER IS OFF FOR EACH HF COMMUNICATION SYSTEM. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURY TO PERSONS.

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

SUBTASK 23-11-03-700-001

- (2) Before you install the coupler, make sure that there is no corrosion or electrical arcing at the rear coupler mount connection.

SUBTASK 23-11-03-420-001



CAUTION

MOVE THE HF ANTENNA COUPLER CAREFULLY. SET THE HF ANTENNA COUPLER ON ITS BOTTOM. DO NOT SET THE HF ANTENNA COUPLER ON ITS END (WITH THE HANDLE UP). INTERNAL PARTS ARE EASILY DAMAGED.

- (3) Install the HF antenna coupler [2]. To install it, do this task: E/E Box Installation, TASK 20-10-01-400-801.

SUBTASK 23-11-03-430-001

- (4) Connect the coaxial connector [4] and the electrical connector [3] to the HF antenna coupler [2].

SUBTASK 23-11-03-420-002

- (5) If applicable, install lockwire on the coaxial connector [4]. To install it, do this task: Lockwire, Cotter Pins, and Lockrings - Installation, TASK 20-10-23-400-801.

SUBTASK 23-11-03-410-001

- (6) To install the vertical stabilizer panel [1], do this task: Vertical Stabilizer Forward Box Panels Installation, TASK 55-34-01-400-801.

NOTE: Two different types of bolts (small and large) attach the access panel.

Install this access panel:

<u>Number</u>	<u>Name/Location</u>
322FL	Vertical Stabilizer Forward Box Panel

SUBTASK 23-11-03-440-001

- (7) Close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

G. Installation Test

SUBTASK 23-11-03-860-006

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

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SUBTASK 23-11-03-710-001



DO NOT TRANSMIT WITH THE HF COMMUNICATION SYSTEM WHILE YOU REFUEL OR DEFUEL THE AIRPLANE. AN EXPLOSION CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.



MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET (2 METERS) AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF COMMUNICATION ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

- (2) Do these steps to do the installation test:
- (a) Connect a headset/bomb microphone into the PHONE and MIC jacks on the captain's jack panel.
 - (b) Do these steps at the captain's Audio Control Panel (ACP):
 - 1) Push and release the HF L (HF R) MIC select switch on the captain's ACP.
 - a) Make sure the HF L (HF R) MIC switch light comes on.
 - 2) Push and release the HF L (HF R) receiver volume control on the captain's ACP.
 - a) Make sure the HF L (HF R) receiver volume control annunciator light comes on.
 - (c) Do these steps at the left radio tuning panel on the aft isle control stand panel (P8) for the left HF communication system, or at the right radio tuning panel (P8) for the right HF communication system:
 - 1) Push and release the applicable HF switch (HF L or HF R).
 - 2) Turn the HF SENS control fully clockwise.
 - 3) Set the STANDBY frequency window to an approved HF frequency which is used frequently and is different from the ACTIVE frequency.
 - 4) Push and release the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
 - 5) Make sure the sound quality of the received voice is satisfactory.

NOTE: If there is no received voice signal present in the headset, then the antenna coupler wire bundles and coaxial cables should be checked for cross-over connection where HF L might be connected to the HF R antenna coupler. Do not key the transmitter until the fault has been repaired.
 - (d) Do these steps to speak with another radio operator:
 - 1) Push and release a PTT switch.
 - a) Make sure you hear a tone in the headset while the HF antenna coupler tunes to the new frequency.

NOTE: You will usually hear the 1 KHz continuous or pulsed tone for 1 to 7 seconds as the antenna coupler tunes to the new test frequency. If you hear the tone for more than 10 seconds, the test frequency you selected is possibly out of range. The coupler tune tone will sound no longer than 15 seconds.

NOTE: Some couplers save tuning information for up to 100 frequencies. These couplers can fast tune to saved frequencies. The average fast tune time is 0.2 to 1.0 seconds.

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- 2) Push and hold a PTT switch.
 - a) Make sure you hear the sidetone in the headset.
- 3) Release the PTT switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.

———— **END OF TASK** ————

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HF COMMUNICATION ANTENNA - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
 - (1) A removal of the HF communication antenna.
 - (2) An installation of the HF communication antenna.
- B. The HF communication antenna, M23098, is part of the leading edge of the vertical stabilizer (TASK 55-35-01-000-801).
- C. The HF communication antenna is the 321E panel.

TASK 23-11-04-000-801

2. HF Communication Antenna Removal

(Figure 401)

A. **Location Zones**

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
321	Vertical Stabilizer Leading Edge

B. **Removal Procedure**

SUBTASK 23-11-04-040-001



REMOVE THE ELECTRICAL POWER FROM EACH HF COMMUNICATION SYSTEM BEFORE YOU OPEN THE ACCESS PANEL FOR THE HF COMMUNICATION ANTENNA. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURY TO PERSONS.

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

SUBTASK 23-11-04-010-001



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE AWAY FROM THE AREA BELOW THE LEADING EDGE. INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR IF THE EQUIPMENT FALLS.

- (2) Do these steps to remove the cover [8]:
 - (a) Remove the bolts [3].
 - (b) Remove the cover [8].

SUBTASK 23-11-04-020-001



BE CAREFUL WHEN YOU REMOVE THE HF COMMUNICATION ANTENNA. YOU CAN EASILY CAUSE DAMAGE TO THE LEADING EDGE FINISH.

- (3) Do these steps to remove the HF communication antenna panel assembly [2]:

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- (a) Remove the bolts [5] and washers [6] which connect the feedlines [4] to the feedline connection nutplate [7].
- (b) If sealant holds the feedlines [4] tight to the feedline connection nutplate [7], loosen the feedlines [4].
- (c) Hold the HF communication antenna panel assembly [2].
- (d) Remove the bolts [1].
- (e) Remove the HF communication antenna panel assembly [2].

SUBTASK 23-11-04-410-001

- (4) Put a protective cover on the leading edge area.

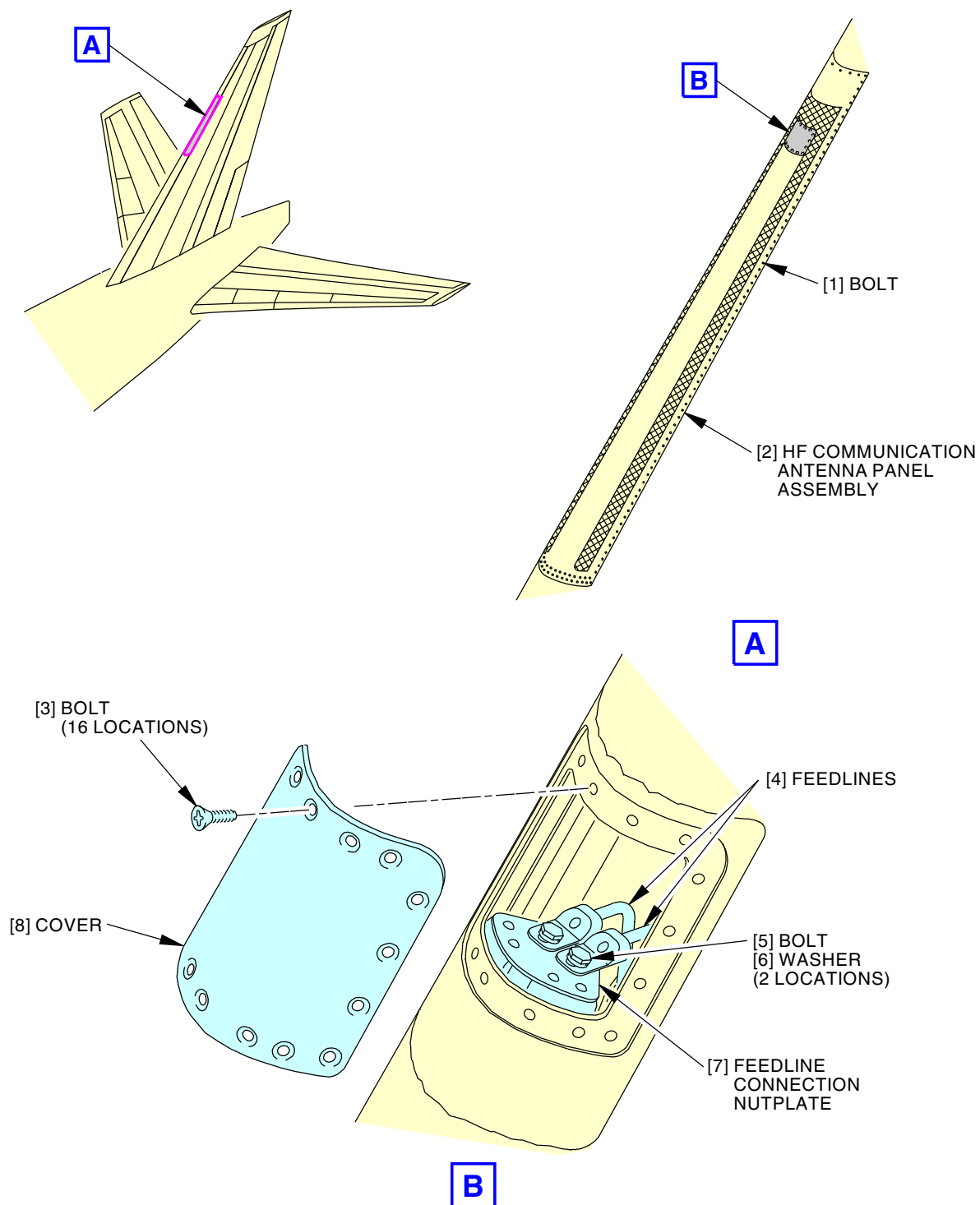
———— **END OF TASK** ————

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HF Communication Antenna Installation
Figure 401/23-11-04-990-801

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TASK 23-11-04-400-801

3. HF Communication Antenna Installation

(Figure 401)

A. References

Reference	Title
20-10-22-110-802	Clean Bare, Clad, or Plated Metal with Solvent (P/B 701)
20-10-22-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
24-22-00-860-805	Supply Electrical Power (P/B 201)
51-21-10-300-801	Decorative Exterior Paint System Repair (P/B 701)
51-21-10-370-811	Decorative Exterior Paint System Application (P/B 701)
51-31-01-390-805	Fastener Seal Application (P/B 201)
51-31-01-390-806	Aerodynamic Smoother Application (P/B 201)
SWPM 20-20-00	Standard Wiring Practices Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I
C00308	Compound - Corrosion Preventive, Petrolatum Hot Application	MIL-C-11796

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Panel assembly	55-35-01-02-420	ARO ALL

E. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
321	Vertical Stabilizer Leading Edge

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F. Installation Procedure

SUBTASK 23-11-04-860-001



WARNING

MAKE SURE THE ELECTRICAL POWER IS OFF FOR EACH HF COMMUNICATION SYSTEM. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURY TO PERSONS.

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

SUBTASK 23-11-04-010-002

- (2) Remove the protective cover if it is necessary.

SUBTASK 23-11-04-420-001



WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE AWAY FROM THE AREA BELOW THE LEADING EDGE. INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT CAN OCCUR IF THE EQUIPMENT OR PARTS FALL.



CAUTION

BE CAREFUL WHEN YOU REMOVE OR INSTALL THE HF COMMUNICATION ANTENNA. YOU CAN EASILY CAUSE DAMAGE TO THE FINISH ON THE ANTENNA LEADING EDGE.

- (3) Install the HF communication antenna panel assembly [2]:
 - (a) Paint aluminum parts of the bolt holes for the HF communication antenna with epoxy resin primer, C00259.
 - 1) Make sure the primer, C00259 is allowed to dry.
 - (b) Put the HF communication antenna panel assembly [2] in position.
 - 1) Make sure the cover [8] is removed.
 - 2) Make sure the feedlines [4] are available at the feedline connection nutplate [7].
 - (c) Do these steps to install the bolts [1]:
 - 1) Apply the corrosion preventive compound, C00308 on the bolts [1].
 - 2) Install the bolts [1] before the corrosion preventive compound, C00308 is dry.
 - 3) Make sure the bolts [1] have a flushness of .001 inch to .007 inch below the surface of the skin.

SUBTASK 23-11-04-760-001

- (4) Use a intrinsically safe approved bonding meter, COM-1550 to measure the resistance between the HF communication antenna and the structure (SWPM 20-20-00).
 - (a) Make sure the resistance is .005 ohms or less.

SUBTASK 23-11-04-420-002

- (5) Connect the feedlines [4]:

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- (a) Clean the faying surface of the feedline connection nutplate [7]. To clean the faying surface, do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-22-120-801.
- (b) Clean the faying surface of the feedline terminals. To clean the faying surface, do this task: Clean Bare, Clad, or Plated Metal with Solvent, TASK 20-10-22-110-802.
- (c) Apply the sealant, A00247 on the shank and threads of each of the bolts [5] (TASK 51-31-01-390-805).
- (d) Apply the sealant, A00247 to these areas:
 - 1) The top side of each of the washers [6].
NOTE: The top side is the side of the washer that will make contact with the head of the bolt.
 - 2) The top side of the feedline terminal.
NOTE: The top side is the side of the feedline terminal that will make contact with the washer.
 - 3) The cleaned surface of the feedline connection nutplate [7]
- (e) Install the washers [6] on the bolts [5].
- (f) Put the feedlines [4] in the correct position.
- (g) Install the bolts [5].
- (h) Tighten the bolts to 120 in-lb (138 kg-cm).
- (i) Use a intrinsically safe approved bonding meter, COM-1550 to measure the resistance between each feedline [4] and the feedline connection nutplate [7] (SWPM 20-20-00).
 - 1) Make sure the resistance is .0025 ohms or less.
- (j) Paint the bare surfaces on the feedline connection nutplate [7] (that you cleaned with abrasives) with two layers of epoxy resin primer, C00259. To paint it, do this task: Decorative Exterior Paint System Application, TASK 51-21-10-370-811 and, do this task: Decorative Exterior Paint System Repair, TASK 51-21-10-300-801.

SUBTASK 23-11-04-410-002

- (6) Install the cover [8]:
 - (a) Put the cover [8] in position.
 - (b) Install the bolts [3].

SUBTASK 23-11-04-390-001

- (7) Fill the clearances around the edge of the HF communication antenna with sealant, A02315 (TASK 51-31-01-390-806).

SUBTASK 23-11-04-440-001

- (8) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

G. Installation Test

SUBTASK 23-11-04-860-002

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

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SUBTASK 23-11-04-710-001

- (2) Do these steps to do a test of the HF L (HF R) communication system:
- (a) Connect a headset/boom microphone to the captain's jack panel.
 - (b) Do these steps at the captain's Audio Control Panel (ACP):
 - 1) Push and release the HF L (HF R) MIC select switch.
 - a) Make sure the HF L (HF R) MIC switch light comes on.
 - 2) Push and release the HF L (HF R) receiver volume control.
 - a) Make sure the HF L (HF R) receiver volume control annunciator light comes on.
 - 3) Set the HF L (HF R) receiver volume control to the middle position.
 - (c) Do these steps at the applicable (captain's for HF L or first officer's for HF R) radio tuning panel on the aft isle stand panel (P8):
 - 1) Push and release the HF L (HF R) switch.
 - 2) Set the STANDBY frequency window to an HF frequency which transmits frequently.
NOTE: Make sure the STANDBY frequency you set is different than the frequency shown in the ACTIVE frequency window.
 - 3) Push and release the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
 - (d) Make sure the sound quality of HF L (HF R) received voice signals are satisfactory.

————— **END OF TASK** —————

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HF COMMUNICATION ANTENNA - INSPECTION/CHECK

1. General

- A. This procedure has this task:
 - (1) An electrical bond check for the HF communication antenna.
- B. The HF communication antenna is part of the leading edge of the vertical stabilizer.
- C. Make sure you remove all of the HF communication antenna couplers before you do the electrical bond check. The HF communication antenna couplers are installed adjacent to the HF communication antenna in the vertical stabilizer forward box panel, 322FL.

TASK 23-11-04-760-801

2. HF Communication Antenna - Electrical Bond Check

(Figure 601)

A. References

Reference	Title
23-11-03-000-801	HF Communication Antenna Coupler Removal (P/B 401)
23-11-03-400-801	HF Communication Antenna Coupler Installation (P/B 401)
SWPM 20-20-00	Standard Wiring Practices Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
322	Vertical Stabilizer - Auxiliary Spar to Front Spar

D. Procedure

SUBTASK 23-11-04-010-003



YOU MUST PREPARE EACH HF COMMUNICATION ANTENNA COUPLER FOR THE REMOVAL. IF YOU DO NOT PREPARE THE ANTENNA COUPLER FOR THE REMOVAL, YOU CAN EASILY CAUSE DAMAGE TO INTERNAL PARTS OF THE HF ANTENNA COUPLER.

- (1) Remove all of the HF communication antenna couplers. To remove the HF communication antenna couplers, do this task: HF Communication Antenna Coupler Removal, TASK 23-11-03-000-801.

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SUBTASK 23-11-04-760-002

- (2) Use an intrinsically safe approved bonding meter, COM-1550 to measure the resistances that follow at each HF antenna coupler mount (SWPM 20-20-00):
 - (a) From the electrical contact to the mount. (Figure 601)
 - 1) Make sure the resistance is 10 milliohms or less.
 - (b) From the electrical contact to the airplane structure.
 - 1) Make sure the resistance is 10 milliohms or less.

SUBTASK 23-11-04-410-003

- (3) To install the HF antenna couplers, do this task: HF Communication Antenna Coupler Installation, TASK 23-11-03-400-801.

————— **END OF TASK** —————

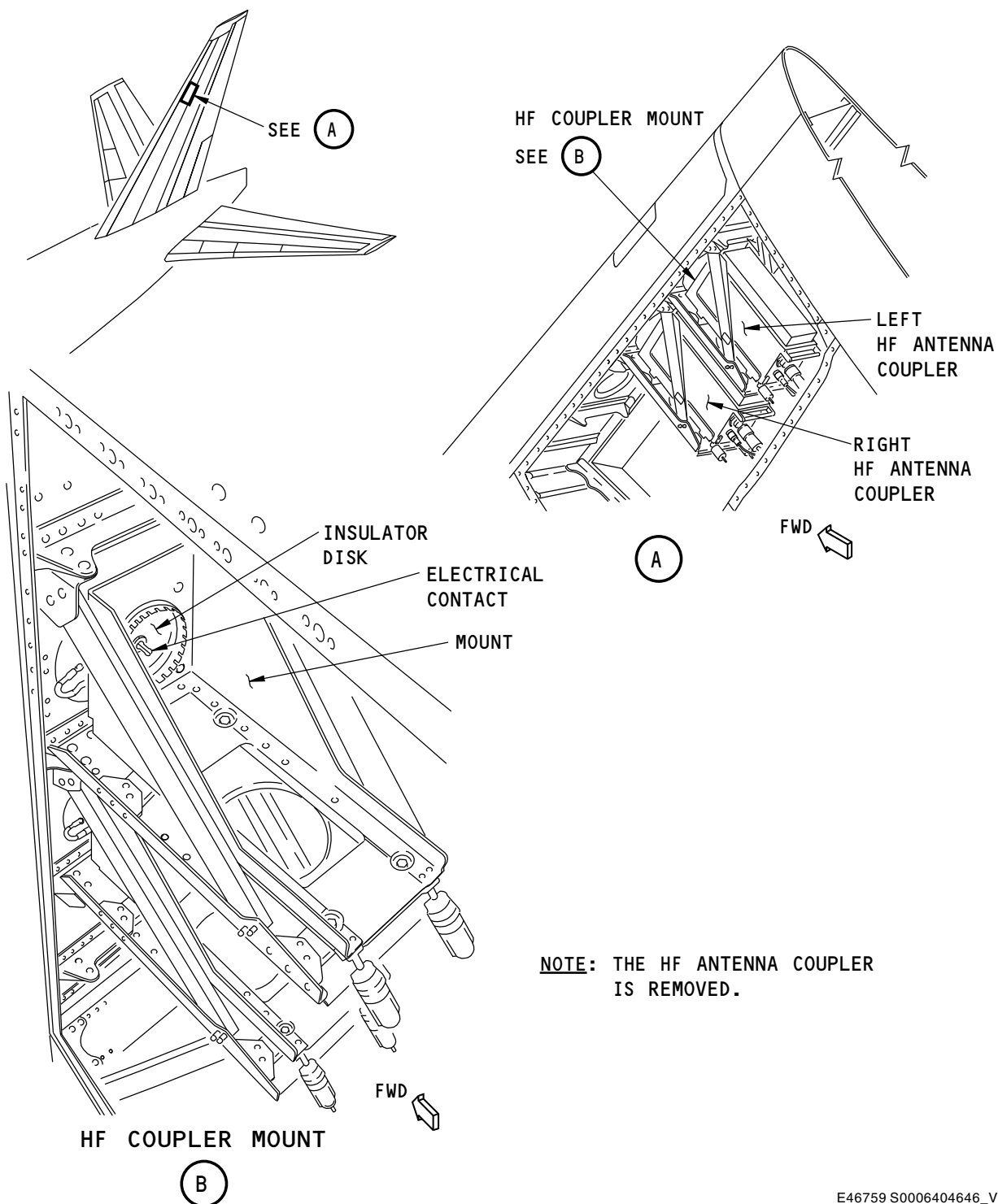
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**HF Communication Antenna - Electrical Bond Check
Figure 601/23-11-04-990-802**

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HF COMMUNICATION TRANSCEIVER - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of an HF communication transceiver.
 - (2) An installation of an HF communication transceiver.
- B. The left and right HF communication transceivers (M23101 and M23201) are installed on the E6 electronics equipment rack, shelf No. 1 (E6-1). The E6 rack is on the right side in the aft cargo compartment.

TASK 23-11-05-000-801

2. HF Communication Transceiver Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
20-10-01-000-801	E/E Box Removal (P/B 401)

B. **Location Zones**

Zone	Area
152	Aft Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

C. **Access Panels**

Number	Name/Location
823	Aft Small Cargo Door

D. **Removal Procedure**

SUBTASK 23-11-05-860-006

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

SUBTASK 23-11-05-010-003

- (2) Open this access panel [1]:

Number	Name/Location
823	Aft Small Cargo Door

SUBTASK 23-11-05-010-002

- (3) Open the E6 access panel.

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SUBTASK 23-11-05-020-001



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE HF COMM TRANSCEIVER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE HF COMM TRANSCEIVER.

- (4) To remove the applicable HF COMM TRANSCEIVER [2] from the E6 electronics equipment rack, do this task: E/E Box Removal, TASK 20-10-01-000-801.

NOTE: The HF communication transceiver is also referred to as the HF comm transceiver.

———— **END OF TASK** ————

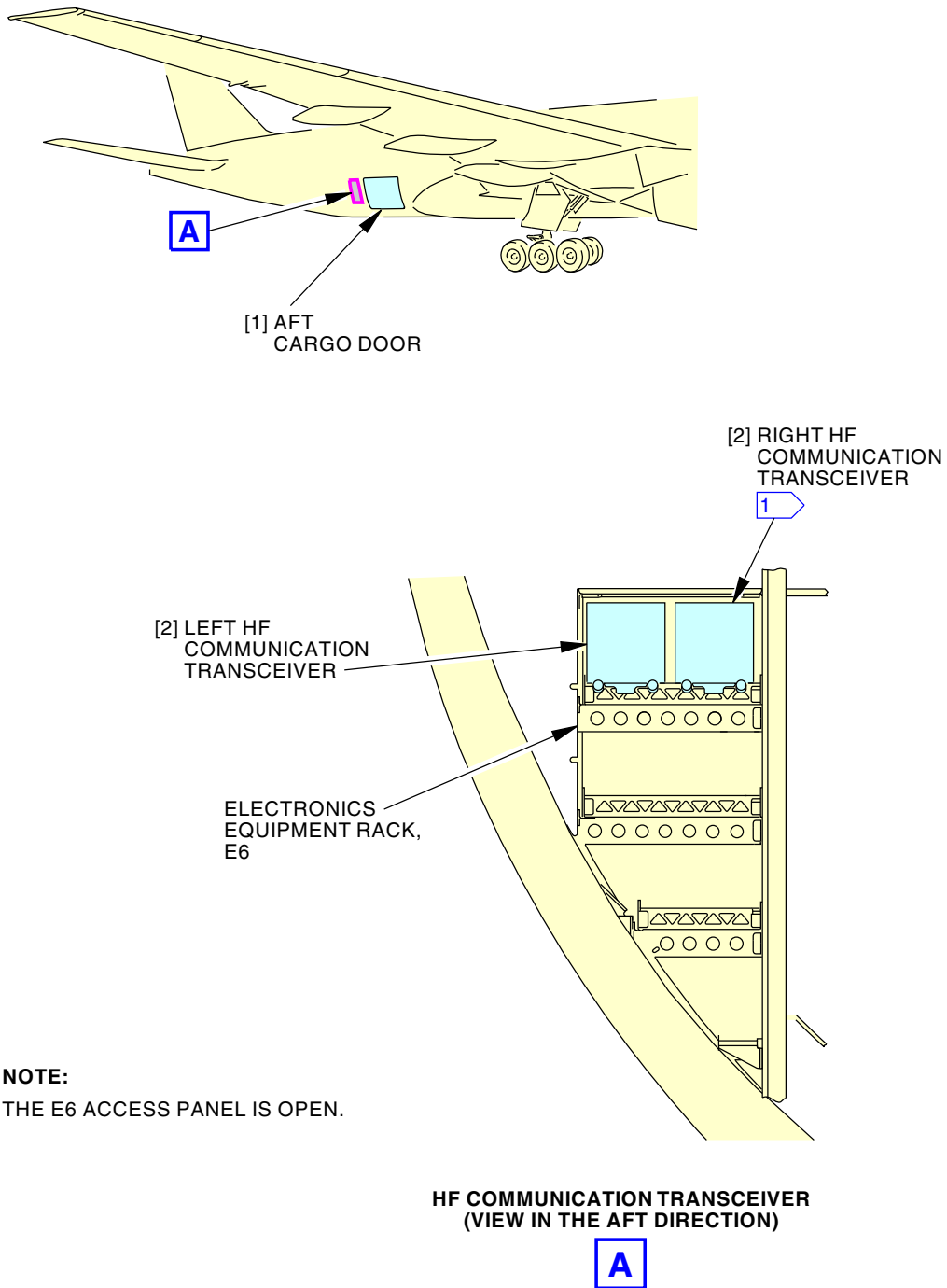
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1 IF INSTALLED

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HF Communication Transceiver Installation
Figure 401/23-11-05-990-801

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TASK 23-11-05-400-801

3. HF Communication Transceiver Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
20-10-01-400-801	E/E Box Installation (P/B 401)
23-11-00-730-801	HF Communication System - System Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	HF COMM TRANSCEIVER	23-11-05-01-040	ARO ALL

D. Location Zones

Zone	Area
152	Aft Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

E. Access Panels

Number	Name/Location
823	Aft Small Cargo Door

F. Installation Procedure

SUBTASK 23-11-05-860-001

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

SUBTASK 23-11-05-420-001

 CAUTION	DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE HF COMM TRANSCEIVER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE HF COMM TRANSCEIVER.

- (2) To install the applicable HF COMM TRANSCEIVER [2] on the E6 electronics equipment rack, do this task: E/E Box Installation, TASK 20-10-01-400-801.

SUBTASK 23-11-05-410-001

- (3) Close the E6 rack access panel.

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SUBTASK 23-11-05-410-003

- (4) Close this access panel [1]:

<u>Number</u>	<u>Name/Location</u>
823	Aft Small Cargo Door

SUBTASK 23-11-05-860-007

- (5) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	2	C23301	L HF COMM
G	15	C23300	R HF COMM

G. Installation Test

NOTE: This is not a full test of the system. If a full test is necessary, do the system test (TASK 23-11-00-730-801).

SUBTASK 23-11-05-860-002

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-11-05-740-002

- (2) Use a maintenance access terminal (MAT) to do the system test for the applicable HF COMM TRANSCEIVER [2]:
- (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 HF Communication System
 - 5) SYSTEM TEST
 - 6) Left (Right) HF Communication System
 - 7) CONTINUE
 - (b) Do the instructions that show on the MAT and then make these selections:
 - 1) CONTINUE
 - 2) START TEST
 - (c) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
 - (d) If FAILED shows, refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

————— END OF TASK —————

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VERY HIGH FREQUENCY (VHF) COMMUNICATION SYSTEM - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

- (1) Very High Frequency (VHF) Communication Deactivation.
- (2) Very High Frequency (VHF) Communication Activation.

TASK 23-12-00-040-801

2. Very High Frequency (VHF) Communication - Deactivation

A. **General**

- (1) This task removes electrical power from the Very High Frequency (VHF) Communication System.

B. **Location Zones**

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
123	Area Below Forward Cargo Compartment, Left
153	Area Below Aft Cargo Compartment, Left
211	Flight Compartment, Left
212	Flight Compartment, Right

C. **Access Panels**

Number	Name/Location
117AL	Main Equipment Center Access Door

D. **Procedure**

SUBTASK 23-12-00-010-001

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-12-00-860-016

- (2) 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>
J	27	C23618	RTP C

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R
G	8	C23604	VHF COMM C

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	1	C23619	RTP R

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Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	5	C23617	RTP L

E. Very High Frequency (VHF) Communication - Tryout

NOTE: This tryout is to make sure the Very High Frequency (VHF) Communication is in a zero energy state.

SUBTASK 23-12-00-860-017

- (1) Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	27	C23618	RTP C

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R
G	8	C23604	VHF COMM C

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	1	C23619	RTP R

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	5	C23617	RTP L

SUBTASK 23-12-00-700-001

- (2) Make sure the following indications show on the AIMS display panel:
- (a) VHF-L FAIL
 - (b) VHF-C FAIL
 - (c) VHF-R FAIL

————— END OF TASK —————

TASK 23-12-00-440-801

3. Very High Frequency (VHF) Communication - Activation

A. General

- (1) This task adds electrical power to the Very High Frequency (VHF) Communication System.

B. Location Zones

<u>Zone</u>	<u>Area</u>
117	Main Equipment Center, Left
118	Main Equipment Center, Right
123	Area Below Forward Cargo Compartment, Left
153	Area Below Aft Cargo Compartment, Left
211	Flight Compartment, Left

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(Continued)

Zone	Area

212	Flight Compartment, Right

C. Procedure

SUBTASK 23-12-00-860-018

- (1) 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>
J	27	C23618	RTP C

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R
G	8	C23604	VHF COMM C

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	1	C23619	RTP R

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	5	C23617	RTP L

SUBTASK 23-12-00-700-002

- (2) Make sure the following indications no longer show on the AIMS display panel:
- (a) VHF-L FAIL
 - (b) VHF-C FAIL
 - (c) VHF-R FAIL

————— **END OF TASK** —————

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VERY HIGH FREQUENCY (VHF) COMMUNICATION SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) An operational test of the very high frequency (VHF) communication system
 - (2) A system test of the very high frequency (VHF) communication system.
- C. There are three VHF communication systems installed: VHF left (VHF L), VHF right (VHF R), and VHF center (VHF C).
- D. The left, right, and center radio tuning panels (RTPs) are on the aft aisle stand panel, P8, in the flight compartment.

TASK 23-12-00-710-801

2. VHF Communication System - Operational Test

A. General

- (1) The operational test does a check of the internal functions of the VHF communication transceiver. The operational test also does a check of the radio tuning panel input to the VHF communication transceiver.
- (2) The same sequence of steps is used for the left, right, or center VHF communication system.
- (3) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Procedure

SUBTASK 23-12-00-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-12-00-740-003

- (2) Do these steps to do the BITE test at the front panel of the left (right, center) VHF transceiver.
 - (a) Press and release either one of the two TEST button switches, (multi-functional switches), located below the LCD display of the transceiver.
NOTE: The LCD display screen should show PUSH TO TEST to perform this test. If not, press the appropriate RETURN button switch as instructed on the LCD display.
 - (b) Make sure the TEST IN PROGRESS is shown on the LCD display screen for approximately the next five seconds.
 - (c) Make sure the LCD display screen on the transceiver shows TEST COMPLETE NO FAILURES.

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SUBTASK 23-12-00-740-001

- (3) Use a maintenance access terminal (MAT) to do the system test for each VHF communication system (VHF L, VHF R, and VHF C).
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 VHF Communication System
 - 5) SYSTEM TEST
 - 6) Left (Center, Right) VHF Communication System
 - 7) CONTINUE.
 - (b) Do the instructions that show on the MAT and then make these selections:
 - 1) CONTINUE
 - 2) START TEST.
 - (c) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
 - (d) If FAILED shows, select the maintenance message and select MAINTENANCE MESSAGE DATA or refer to the applicable Maintenance Message Index in the FIM.

————— END OF TASK —————

TASK 23-12-00-730-801

3. VHF Communication System - System Test

A. General

- (1) This task includes these tests:
 - (a) An operational test
 - (b) An interface test between the radio tuning panels (RTP to RTP)
 - (c) A communication test.
- (2) Use the communication test to do a full test of the VHF communication system. The communication test uses these flight interphone system components: audio control panels, headset/boom mic, and push-to-talk switches.
- (3) When you run the communication test, make sure the airplane is not in or near any large metal structures. VHF communications while the airplane is on the ground can be degraded by airplane orientation or by RF signal attenuation. If the transmitted and received voice is not satisfactory, move the airplane to a better location.
- (4) Make sure you use approved test frequencies when you run the communication test.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

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D. Procedure

SUBTASK 23-12-00-860-002

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

E. Operational Test

SUBTASK 23-12-00-710-001

- (1) Do this task: VHF Communication System - Operational Test, TASK 23-12-00-710-801.

F. RTP to RTP Interface Test

SUBTASK 23-12-00-710-002

- (1) Do these steps to do the RTP to RTP interface test:

- (a) On RTP-L, push the VHF L switch.
- (b) On RTP-R, push the VHF R switch.
- (c) On RTP-C, push the VHF C switch.
- (d) On each RTP, make sure the offside tuning light is off.

NOTE: The offside tuning light is between the ACTIVE and STANDBY frequency window on each RTP.

- (e) Push the VHF R switch on RTP-L.
 - 1) On RTP-L and RTP-R, make sure the offside tuning lights are on.
- (f) Push the VHF C switch on RTP-L.
 - 1) On RTP-L and RTP-C, make sure the offside tuning lights are on.
 - 2) On RTP-R, make sure the tuning light is off.
- (g) Push the VHF L switch on RTP-L.
 - 1) On RTP-L and RTP-C, make sure the offside tuning lights are off.
- (h) Push the VHF L switch on RTP-R.
 - 1) On RTP-L and RTP-R, make sure the offside tuning lights are on.
- (i) Push the VHF C switch on RTP-R.
 - 1) On RTP-R and RTP-C, make sure the offside tuning lights are on.
 - 2) On RTP-L, make sure the offside tuning light is off.
- (j) Push the VHF R switch on RTP-R.
 - 1) On RTP-R and RTP-C, make sure the offside tuning lights are off.
- (k) Push the VHF L switch on RTP-C.
 - 1) On RTP-L and RTP-C, make sure the offside tuning lights are on.
- (l) Push the VHF R switch on RTP-C.
 - 1) On RTP-R and RTP-C, make sure the offside tuning lights are on.
 - 2) On RTP-L, make sure the offside tuning light is off.
- (m) Push the VHF C switch on RTP-C.
 - 1) On RTP-R and RTP-C, make sure the offside tuning lights are off.

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G. Communication Test

NOTE: WHEN YOU DO THE COMMUNICATION TEST, MAKE SURE THE AIRPLANE IS NOT IN OR NEAR ANY LARGE METAL STRUCTURES. VHF COMMUNICATIONS WHILE THE AIRPLANE IS ON THE GROUND CAN BE DEGRADED AT CERTAIN AIRPLANE HEADINGS OR BY RF SIGNAL ATTENUATION.

SUBTASK 23-12-00-860-003

- (1) On RTP-L, make sure the VHF L switch light is on.

SUBTASK 23-12-00-860-004

- (2) On RTP-R, make sure the VHF R switch light is on.

SUBTASK 23-12-00-860-005

- (3) On RTP-C, make sure the VHF C switch light is on.

SUBTASK 23-12-00-860-006

- (4) Make sure each RTP shows a different ACTIVE frequency.
 - (a) Make sure the ACTIVE frequencies are not the same as the test frequencies that you will use in this test.
 - (b) If you must change the ACTIVE frequency, set the STANDBY frequency window to the new frequency.
 - 1) Push the display transfer switch.

SUBTASK 23-12-00-860-007

- (5) At each audio control panel (captain's, first officer's, and first observer's ACP), push the applicable receiver volume controls to make all the receive lights go off.

SUBTASK 23-12-00-710-003

- (6) Do the VHF L test at RTP-L with the captain's ACP and headset:
 - (a) Do these steps at the ACP:
 - 1) Push the VHF L transmitter MIC select switch.
 - a) Make sure the VHF L MIC switch light comes on
 - 2) Push and release the VHF L receiver volume control.
 - a) Make sure the VHF L receiver volume control annunciator light comes on.
 - 3) Turn the VHF L receiver volume control to the middle position.
 - (b) Do these steps at the RTP:
 - 1) Make sure the VHF L switch light is on.
 - 2) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 3) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
 - (c) Speak with the tower radio operator:
 - 1) On the ACP, push and hold the Mic/Interphone switch in the MIC position while you speak.

NOTE: If you hold the mic for 35 seconds when the airplane is on the ground, the VHF communication transmitter is disabled but the VHF communication receiver continues to operate. Also, the RADIO TRANSMIT advisory EICAS message shows.

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- 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
- 3) Slowly turn the VHF L receiver volume control on the ACP while you hear the received voice.
 - a) Make sure the audio level changes without a change in voice quality.
- (d) On the ACP, push the VHF L receiver volume control.

SUBTASK 23-12-00-710-004

- (7) Do the VHF L test at RTP-R with the first officer's ACP and headset:
 - (a) Do these steps at the ACP:
 - 1) Push the VHF L transmitter MIC select switch.
 - a) Make sure the VHF L MIC switch light comes on
 - 2) Push and release the VHF L receiver volume control.
 - a) Make sure the VHF L receiver volume control annunciator light comes on.
 - 3) Turn the VHF L receiver volume control to approximately the middle position.
 - (b) Do these steps at the RTP:
 - 1) Push the VHF L switch.
 - 2) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 3) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
 - (c) Speak with the tower radio operator:
 - 1) On the ACP, push and hold the Mic/Interphone switch in the MIC position while you speak.

NOTE: If you hold the mic for 35 seconds when the airplane is on the ground, the VHF communication transmitter is disabled but the VHF communication receiver continues to operate. Also, the RADIO TRANSMIT advisory EICAS message shows.
 - 2) Release the Mic/Interphone switch while you listen.
 - 3) Make sure the quality of the transmitted and received voice is good.
 - 4) Slowly turn the VHF L receiver volume control on the ACP while you hear the received voice.
 - a) Make sure the audio level changes without a change in voice quality.
 - (d) On the ACP, push the VHF L receiver volume control.

SUBTASK 23-12-00-710-005

- (8) Do the VHF L test at RTP-C with the first observer's ACP and headset:
 - (a) Do these steps at the ACP:
 - 1) Push the VHF L transmitter MIC select switch.
 - a) Make sure the VHF L MIC switch light comes on
 - 2) Push and release the VHF L receiver volume control.
 - a) Make sure the VHF L receiver volume control annunciator light comes on.
 - 3) Turn the VHF L receiver volume control to the middle position.

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- (b) Do these steps at the RTP:
 - 1) Push the VHF L switch.
 - 2) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 3) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
- (c) Speak with the tower radio operator:
 - 1) On the ACP, push and hold the Mic/Interphone switch in the MIC position while you speak.

NOTE: If you hold the mic for 35 seconds when the airplane is on the ground, the VHF communication transmitter is disabled but the VHF communication receiver continues to operate. Also, the RADIO TRANSMIT advisory EICAS message shows.
 - 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
 - 3) Slowly turn the VHF L receiver volume control on the ACP while you hear the received voice.
 - a) Make sure the audio level changes without a change in voice quality.
- (d) On the ACP, push the VHF L receiver volume control.
- (e) On the RTP, set the STANDBY frequency window to a frequency that is not a test frequency.
- (f) Push the display transfer switch.

SUBTASK 23-12-00-710-006

- (9) Do the VHF R test at RTP-L with the captain's ACP and headset:
 - (a) Do these steps at the ACP:
 - 1) Push the VHF R transmitter MIC select switch.
 - a) Make sure the VHF R MIC switch light comes on
 - 2) Push and release the VHF R receiver volume control.
 - a) Make sure the VHF R receiver volume control annunciator light comes on.
 - 3) Turn the VHF R receiver volume control to the middle position.
 - (b) Do these steps at the RTP:
 - 1) Push the VHF R switch.
 - 2) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 3) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
 - (c) Speak with the tower radio operator:



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- 1) On the ACP, push and hold the Mic/Interphone switch in the MIC position while you speak.

NOTE: If you hold the mic for 35 seconds when the airplane is on the ground, the VHF communication transmitter is disabled but the VHF communication receiver continues to operate. Also, the RADIO TRANSMIT advisory EICAS message shows.

- 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
- 3) Slowly turn the VHF R receiver volume control on the ACP while you hear the received voice.
 - a) Make sure the audio level changes without a change in voice quality.

- (d) On the ACP, push the VHF R receiver volume control.

SUBTASK 23-12-00-710-007

- (10) Do the VHF R test at RTP-R with the first officer's ACP and headset:

- (a) Do these steps at the ACP:

- 1) Push the VHF R transmitter MIC select switch.
 - a) Make sure the VHF R MIC switch light comes on
- 2) Push and release the VHF R receiver volume control.
 - a) Make sure the VHF R receiver volume control annunciator light comes on.
- 3) Turn the VHF R receiver volume control to the middle position.

- (b) Do these steps at the RTP:

- 1) Push the VHF R switch.
- 2) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
- 3) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.

- (c) Speak with the radio tower operator:

- 1) On the ACP, push and hold the Mic/Interphone switch in the MIC position while you speak.

NOTE: If you hold the mic for 35 seconds when the airplane is on the ground, the VHF communication transmitter is disabled but the VHF communication receiver continues to operate. Also, the RADIO TRANSMIT advisory EICAS message shows.

- 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
- 3) Slowly turn the VHF R receiver volume control on the ACP while you hear the received voice.
 - a) Make sure the audio level changes without a change in voice quality.

- (d) On the ACP, push the VHF R receiver volume control.

SUBTASK 23-12-00-710-008

- (11) Do the VHF R test at RTP-C with the first observer's ACP and headset:

- (a) Do these steps at the ACP:

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- 1) Push the VHF R transmitter MIC select switch.
 - a) Make sure the VHF R MIC switch light comes on
 - 2) Push and release the VHF R receiver volume control.
 - a) Make sure the VHF R receiver volume control annunciator light comes on.
 - 3) Turn the VHF R receiver volume control to the middle position.
- (b) Do these steps at the RTP:
- 1) Push the VHF R switch.
 - 2) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 3) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
- (c) Speak with the tower radio operator:
- 1) On the ACP, push and hold the Mic/Interphone switch in the MIC position while you speak.

NOTE: If you hold the mic for 35 seconds when the airplane is on the ground, the VHF communication transmitter is disabled but the VHF communication receiver continues to operate. Also, the RADIO TRANSMIT advisory EICAS message shows.
 - 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
 - 3) Slowly turn the VHF R receiver volume control on the ACP while you hear the received voice.
 - a) Make sure the audio level changes without a change in voice quality.
- (d) On the ACP, push the VHF R receiver volume control.
- (e) On the RTP, set the STANDBY frequency window to a frequency that is not a test frequency.
- (f) Push the display transfer switch.

SUBTASK 23-12-00-710-009

- (12) Do the VHF C test at RTP-L with the captain's ACP and headset:
- (a) Do these steps at the ACP:
- 1) Push the VHF C transmitter MIC select switch.
 - a) Make sure the VHF C MIC switch light comes on
 - 2) Push and release the VHF C receiver volume control.
 - a) Make sure the VHF C receiver volume control annunciator light comes on.
 - 3) Turn the VHF C receiver volume control to the middle position.
- (b) Do these steps at the RTP:
- 1) Push the VHF C switch.
 - 2) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 3) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.

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- (c) Speak with the tower radio operator:
- 1) On the ACP, push and hold the Mic/Interphone switch in the MIC position while you speak.
NOTE: If you hold the mic for 35 seconds when the airplane is on the ground, the VHF communication transmitter is disabled but the VHF communication receiver continues to operate. Also, the RADIO TRANSMIT advisory EICAS message shows.
 - 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
 - 3) Slowly turn the VHF C receiver volume control on the ACP while you hear the received voice.
 - a) Make sure the audio level changes without a change in voice quality.
- (d) On the ACP, push the VHF C receiver volume control.

SUBTASK 23-12-00-710-010

- (13) Do the VHF C test at RTP-R with the first officer's ACP and headset:
- (a) Do these steps at the ACP:
- 1) Push the VHF C transmitter MIC select switch.
 - a) Make sure the VHF C MIC switch light comes on
 - 2) Push and release the VHF C receiver volume control.
 - a) Make sure the VHF C receiver volume control annunciator light comes on.
 - 3) Turn the VHF C receiver volume control to the middle position.
- (b) Do these steps at the RTP:
- 1) Push the VHF C switch.
 - 2) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 3) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
- (c) Speak with the tower radio operator:
- 1) On the ACP, push and hold the Mic/Interphone switch in the MIC position while you speak.
NOTE: If you hold the mic for 35 seconds when the airplane is on the ground, the VHF communication transmitter is disabled but the VHF communication receiver continues to operate. Also, the RADIO TRANSMIT advisory EICAS message shows.
 - 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
 - 3) Slowly turn the VHF C receiver volume control on the ACP while you hear the received voice.
 - a) Make sure the audio level changes smoothly without a change in voice quality.
- (d) On the ACP, push the VHF C receiver volume control.

SUBTASK 23-12-00-710-011

- (14) Do the VHF C test at RTP-C with the first observer's ACP and headset:

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- (a) Do these steps at the ACP:
 - 1) Push the VHF C transmitter MIC select switch.
 - a) Make sure the VHF C MIC switch light comes on
 - 2) Push and release the VHF C receiver volume control.
 - a) Make sure the VHF C receiver volume control annunciator light comes on.
 - 3) Turn the VHF C receiver volume control to the middle position.
- (b) Do these steps at the RTP:
 - 1) Push the VHF C switch.
 - 2) Set the STANDBY frequency window to an approved test frequency.
 - a) Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - 3) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
- (c) Speak with the tower radio operator:
 - 1) On the ACP, push and hold the Mic/Interphone switch in the MIC position while you speak.

NOTE: If you hold the mic for 35 seconds when the airplane is on the ground, the VHF communication transmitter is disabled but the VHF communication receiver continues to operate. Also, the RADIO TRANSMIT advisory EICAS message shows.
 - 2) Release the Mic/Interphone switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is good.
 - 3) Slowly turn the VHF C receiver volume control on the ACP while you hear the received voice.
 - a) Make sure the audio level changes without a change in voice quality.
- (d) On the ACP, push the VHF C receiver volume control.

H. Put the Airplane Back to Its Initial Condition

SUBTASK 23-12-00-860-008

- (1) At each ACP, push the applicable transmitter select switches to make sure all of the VHF MIC switch lights go off.

————— END OF TASK —————

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VHF COMMUNICATION TRANSCEIVER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of a very high frequency (VHF) communication transceiver.
- (2) An installation of a VHF communication transceiver.

B. The three VHF communication transceivers are installed in the main equipment center. The left VHF communication transceiver is located on the E1 electronics equipment rack, shelf No. 3 (E1-3). The right VHF communication transceiver is located on the E2 electronics equipment rack, shelf No. 3 (E2-3). The center VHF communication transceiver is located on the E1 electronics equipment rack, shelf No. 2 (E1-2).

TASK 23-12-01-000-801

2. VHF Communication Transceiver Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
20-10-01-000-801	E/E Box Removal (P/B 401)

B. **Location Zones**

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

C. **Access Panels**

Number	Name/Location
117AL	Main Equipment Center Access Door

D. **Removal Procedure**

SUBTASK 23-12-01-040-001

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R
G	8	C23604	VHF COMM C

SUBTASK 23-12-01-010-001

- (2) Open this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

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SUBTASK 23-12-01-020-001



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE VHF COMMUNICATION TRANSCEIVER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE VHF COMMUNICATION TRANSCEIVER.

- (3) To remove the left (center, or right) VHF communication transceiver [1], do this task: E/E Box Removal, TASK 20-10-01-000-801.

———— **END OF TASK** ————

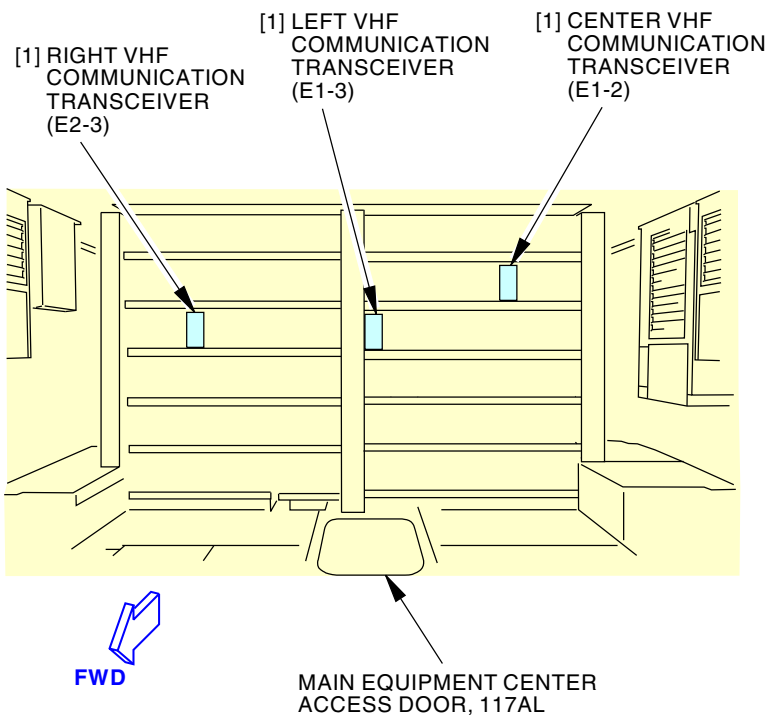
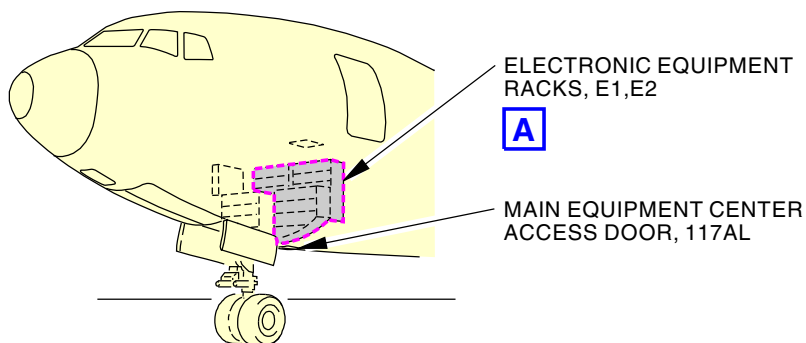
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ELECTRONIC EQUIPMENT RACKS, E1,E2

A

C76850 S0006404661_V2

VHF Communication Transceiver Installation Figure 401/23-12-01-990-801

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TASK 23-12-01-400-801

3. VHF Communication Transceiver Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) The VHF LRU replacement test makes sure the left (center, right) VHF Communication System operates correctly.
- (2) The same sequence of steps is used for the left, center, or right VHF communication transceiver.

B. References

Reference	Title
20-10-01-400-801	E/E Box Installation (P/B 401)
23-12-00-730-801	VHF Communication System - System Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Transceiver	23-12-01-01B-005	ARO ALL

D. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

E. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

F. Installation Procedure

SUBTASK 23-12-01-860-001

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R
G	8	C23604	VHF COMM C

SUBTASK 23-12-01-420-001



DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (2) To install the left (center, or right) VHF communication transceiver [1], do this task: E/E Box Installation, TASK 20-10-01-400-801.

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SUBTASK 23-12-01-440-001

- (3) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R
G	8	C23604	VHF COMM C

G. Installation Test

NOTE: This is not a full test of the system. If a full system test is necessary, do the VHF Communication System Test (TASK 23-12-00-730-801).

SUBTASK 23-12-01-860-002

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-12-01-740-002

- (2) Do these steps to do the BITE test at the front panel of the left (right, center) VHF transceiver.
- Press and release either one of the two TEST button switches, (multi-functional switches), located below the LCD display of the transceiver.
- NOTE: The LCD display screen should show PUSH TO TEST to perform this test. If not, press the appropriate RETURN button switch as instructed on the LCD display.
- Make sure the TEST IN PROGRESS is shown on the LCD display screen for approximately the next five seconds.
 - Make sure the LCD display screen on the transceiver shows TEST COMPLETE NO FAILURES.

SUBTASK 23-12-01-730-001

- (3) Do these steps to do a test of the applicable VHF communication system:
- Connect a headset/boom microphone to the captain's jack panel.
 - Do these steps at the captain's Audio Control Panel (ACP):
 - Push and release the applicable VHF system MIC select switch.
 - Make sure the VHF MIC switch light comes on.
 - Push and release the selected VHF system receiver volume control.
 - Make sure the VHF receiver volume control annunciator light comes on.
 - Set the selected VHF system receiver volume control to the middle position.
 - Do these steps at the captain's radio tuning panel:
 - Push and release the VHF L (VHF R, VHF C) switch.
 - Make sure the applicable VHF switch light comes on.
 - Set the STANDBY frequency window to an approved test frequency.
 - Make sure the STANDBY frequency is different from the ACTIVE frequency.
 - Push and release the display transfer switch.
 - Make sure the STANDBY frequency moves to the ACTIVE frequency window.
 - Do these steps to speak with the tower radio operator:

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- 1) On the ACP, push and hold the MIC/Interphone in the MIC position while you speak.

NOTE: If you hold the mic for 35 seconds when the airplane is on the ground, the VHF communication transmitter is disabled but the VHF communication receiver continues to operate. Also, the RADIO TRANSMIT advisory EICAS message shows.

- 2) Release the MIC/Interphone switch while you listen.
 - a) Make sure you can hear the transmitted and received voice signals satisfactorily.
 - b) Make sure you can hear the sidetone in the headset while you transmit.

H. Job Close-up

SUBTASK 23-12-01-410-002

- (1) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

———— **END OF TASK** ————

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RADIO TUNING PANEL - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of a radio tuning panel.
 - (2) An installation of a radio tuning panel.
- B. The left, right, and center radio tuning panels (RTPs) are on the aft aisle stand panel, P8, in the flight compartment.

TASK 23-12-02-000-801

2. Radio Tuning Panel (RTP) Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **Location Zones**

<u>Zone</u>	<u>Area</u>
117	Main Equipment Center, Left
118	Main Equipment Center, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

B. **Access Panels**

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

C. **Removal Procedure**

SUBTASK 23-12-02-010-001

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-12-02-860-001

- (2) 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>
J	27	C23618	RTP C

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	1	C23619	RTP R

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	5	C23617	RTP L

SUBTASK 23-12-02-860-002

- (3) Turn the outer knob of the AISLE STAND PNL/FLOOD control switch fully counterclockwise.

SUBTASK 23-12-02-860-009

- (4) On the overhead panel, P5, set the MASTER BRIGHT switch to off.

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SUBTASK 23-12-02-020-001



MAKE SURE TO CLEARLY IDENTIFY THE CONNECTOR FOR THE RTP POSITION (LEFT, CENTER, OR RIGHT) WHEN YOU REMOVE AN RTP [1]. IF YOU DO NOT IDENTIFY THE CONNECTOR, YOU MAY CROSS-CONNECT THE PANELS UPON INSTALLATION.



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE RTP. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE RTP.

- (5) Remove the RTP [1]:
- (a) Loosen the four quarter-turn fasteners [2].
 - (b) Lift the RTP [1] to get access to the electrical connector.
 - (c) Disconnect the electrical connector.
 - (d) Put protective covers on the electrical connector.

————— **END OF TASK** —————

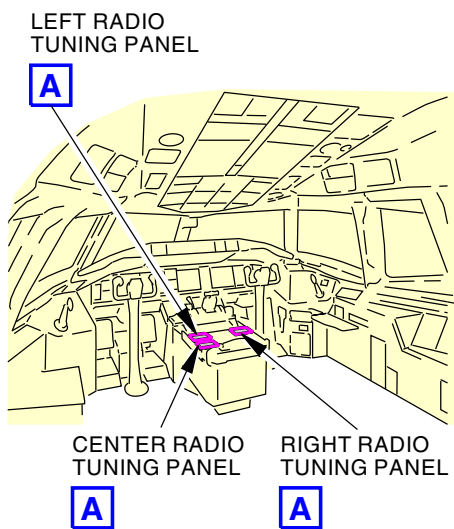
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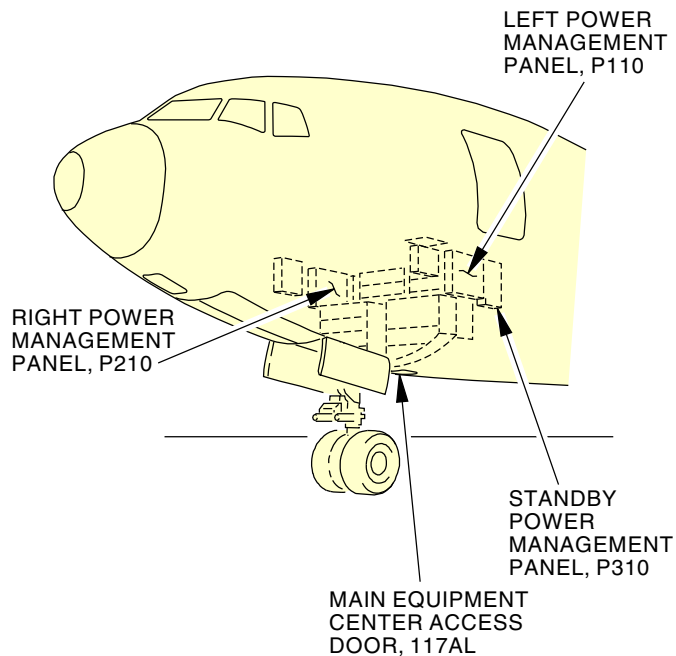
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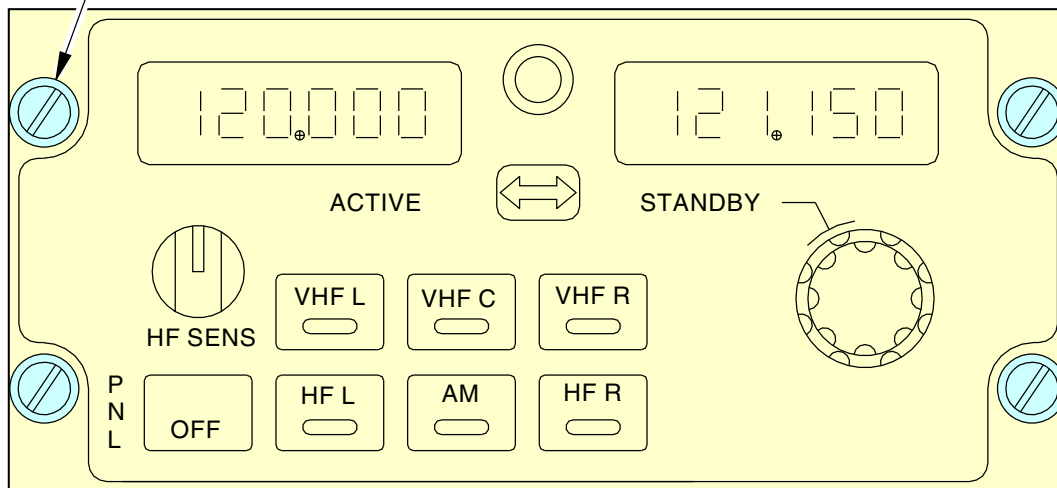
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FLIGHT COMPARTMENT



[2] QUARTER-TURN
FASTENERS
(4 LOCATIONS)



[1] RADIO TUNING PANEL

A

C78903 S0006404666_V2

Radio Tuning Panel Installation Figure 401/23-12-02-990-801

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TASK 23-12-02-400-801

3. Radio Tuning Panel (RTP) Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	RTP	11-31-00-51-055	ARO ALL
		23-12-02-01-105	ARO ALL
		31-11-36-01A-020	ARO 001-013
		33-13-00-01-265	ARO ALL

C. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

E. Installation Procedure

SUBTASK 23-12-02-860-003

- (1) Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
J	27	C23618	RTP C

Right Power Management Panel, P210

Row	Col	Number	Name
J	1	C23619	RTP R

Standby Power Management Panel, P310

Row	Col	Number	Name
H	5	C23617	RTP L

SUBTASK 23-12-02-420-001



MAKE SURE THAT YOU CLEARLY IDENTIFY THE CONNECTOR FOR THE RTP POSITION (LEFT, CENTER, OR RIGHT) THAT YOU ARE TO INSTALL. IF YOU DO NOT IDENTIFY THE CORRECT CONNECTOR, YOU MAY CROSS-CONNECT THE PANELS.

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(CAUTION PRECEDES)



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE RTP. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE RTP.

- (2) Install the RTP [1]:
- Remove the protective covers from the electrical connector.
 - Examine the electrical connector for bent or broken pins, dirt, and damage.
 - Connect the electrical connector.
 - Put the RTP [1] in its position on the P8 panel.
 - Tighten the four quarter-turn fasteners [2].

SUBTASK 23-12-02-860-004

- (3) Remove the DO-NOT-CLOSE tag and close the circuit breaker for the RTP that you installed:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	27	C23618	RTP C

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	1	C23619	RTP R

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	5	C23617	RTP L

F. Installation Test

SUBTASK 23-12-02-860-011

- (1) Make sure that only one of the RTP circuit breakers is closed.

NOTE: You will close one circuit breaker at a time to do a check for a cross-connection.

SUBTASK 23-12-02-860-005

- (2) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-12-02-860-010

- (3) On the overhead panel, P5, set the MASTER BRIGHT switch to the on position.

SUBTASK 23-12-02-860-006

- (4) Adjust the outer knob of the AISLE STAND PNL/FLOOD control switch to approximately the middle position.

SUBTASK 23-12-02-710-002



WARNING

DO NOT OPERATE THE HF COMMUNICATION SYSTEM WHILE THE AIRPLANE IS REFUELED OR DEFUELED. AN EXPLOSION CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO THE AIRPLANE.

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(WARNING PRECEDES)



WARNING

MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF COMMUNICATION ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

- (5) Use the new RTP to set one of the VHF (L, R or C) or HF (L or R) communication systems to a test frequency.

SUBTASK 23-12-02-710-003

- (6) Make sure the VHF or HF communication system operates satisfactorily.

SUBTASK 23-12-02-860-012

- (7) Remove the DO-NOT-CLOSE tag and close the circuit breaker for one of the other RTPs:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	27	C23618	RTP C

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	1	C23619	RTP R

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	5	C23617	RTP L

SUBTASK 23-12-02-710-004

- (8) Use the applicable RTP to set one of the VHF or HF communication systems to a test frequency.

SUBTASK 23-12-02-710-005

- (9) Make sure the VHF or HF communication system operates satisfactorily.

SUBTASK 23-12-02-860-013

- (10) Remove the DO-NOT-CLOSE tag and close the last circuit breaker for the RTPs:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	27	C23618	RTP C

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	1	C23619	RTP R

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	5	C23617	RTP L

SUBTASK 23-12-02-410-002

- (11) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

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————— END OF TASK —————

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VHF COMMUNICATION ANTENNA - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the VHF communication antenna.
 - (2) An installation of the VHF communication antenna.
- B. The VHF communication antenna is referred to as the VHF antenna.
- C. The VHF antennas are installed at centerline on the top and bottom of the fuselage (Figure 401). See WDM 23-12-XX for antenna installation station numbers.

TASK 23-12-03-000-801

2. VHF Communication Antenna - Removal

(Figure 401)

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 311 Supplier: F6892 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 62176 Part #: TS1275-4 Supplier: 1DWR5

B. Location Zones

Zone	Area
123	Area Below Forward Cargo Compartment, Left
153	Area Below Aft Cargo Compartment, Left
211	Flight Compartment, Left
212	Flight Compartment, Right
233	Area Above Passenger Compartment Ceiling, Left - Section 43
234	Area Above Passenger Compartment Ceiling, Right - Section 43

C. Removal Procedure

SUBTASK 23-12-03-860-001

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R

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(Continued)

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	C23604	VHF COMM C

SUBTASK 23-12-03-020-001

- (2) Remove the applicable VHF communication antenna [1]:
- (a) Remove the ten bolts [2] that attach the VHF communication antenna [1] to the airplane.



CAUTION

BE CAREFUL WHEN YOU REMOVE THE AERODYNAMIC SEAL WITH THE SEALANT REMOVAL TOOL. DAMAGE TO THE AIRPLANE SKIN CAN OCCUR.

- (b) Use a sealant removal tool, COM-2481 to remove the aerodynamic seal around the flange of the VHF communication antenna [1].
- (c) Move the VHF communication antenna [1] away from the airplane until you have access to the coaxial connector [4].
- (d) Disconnect the coaxial connector [4] from the VHF communication antenna [1].
- 1) Make sure the coaxial connector [4] does not go back through the opening in the airplane skin.

———— **END OF TASK** ————

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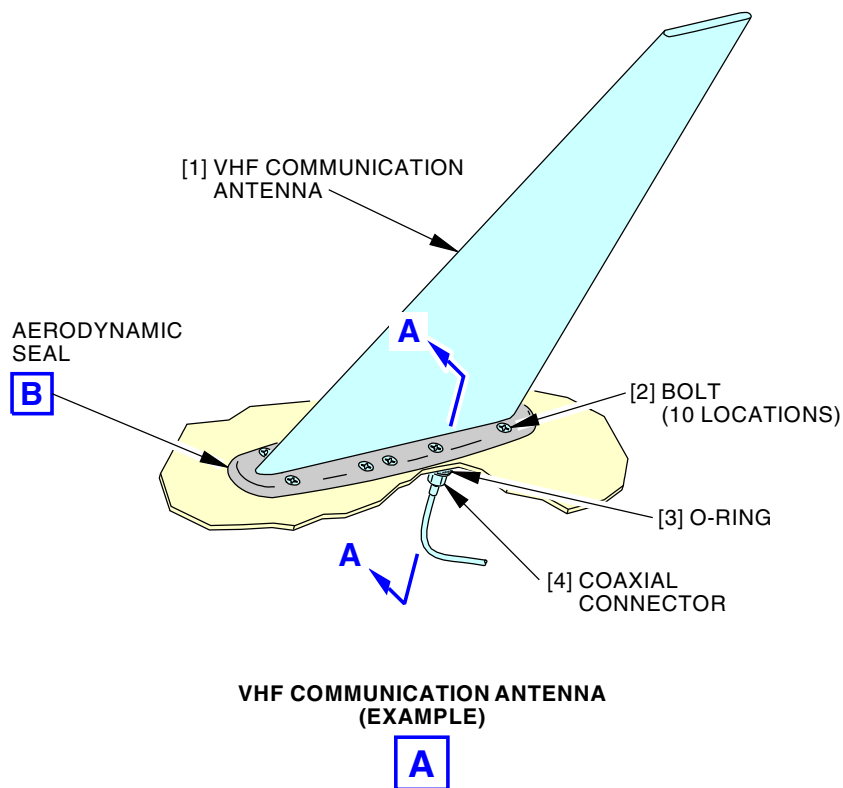
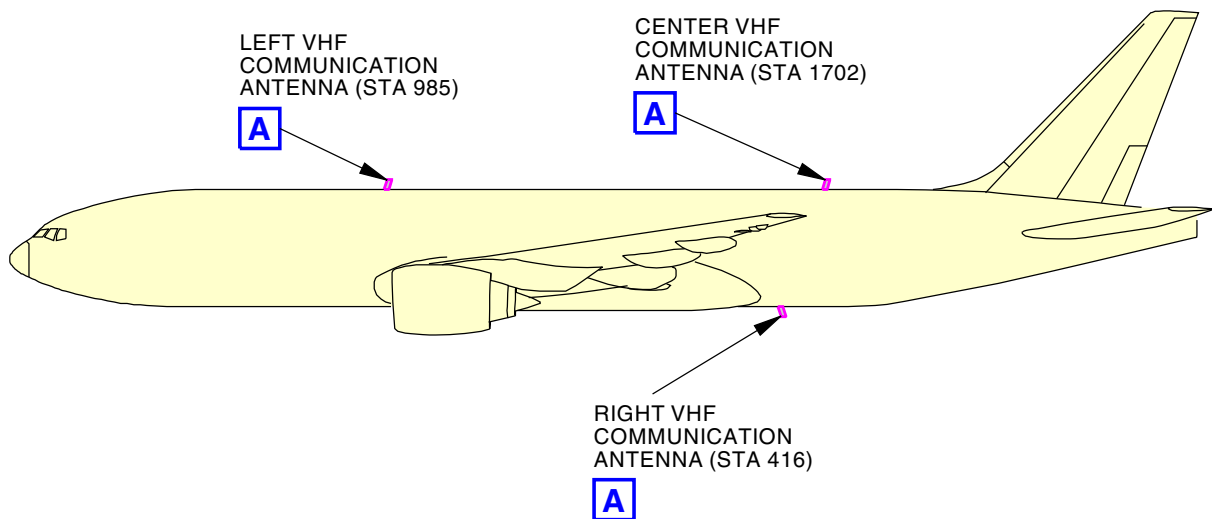
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VHF Communication Antenna Installation
Figure 401/23-12-03-990-801 (Sheet 1 of 2)

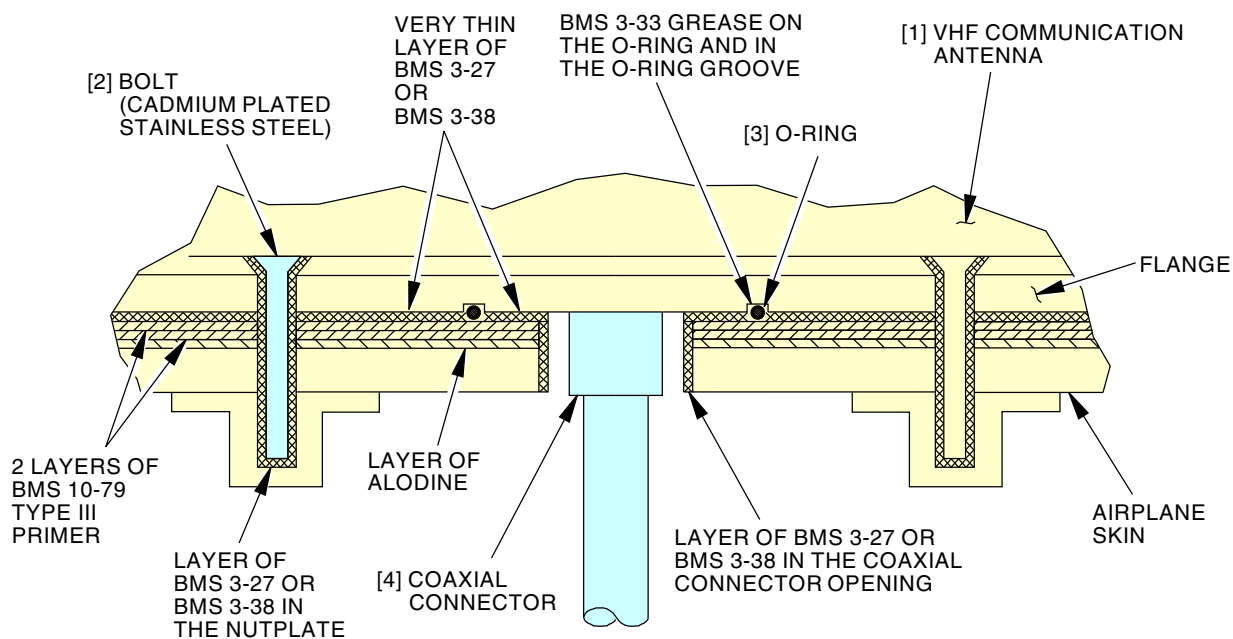
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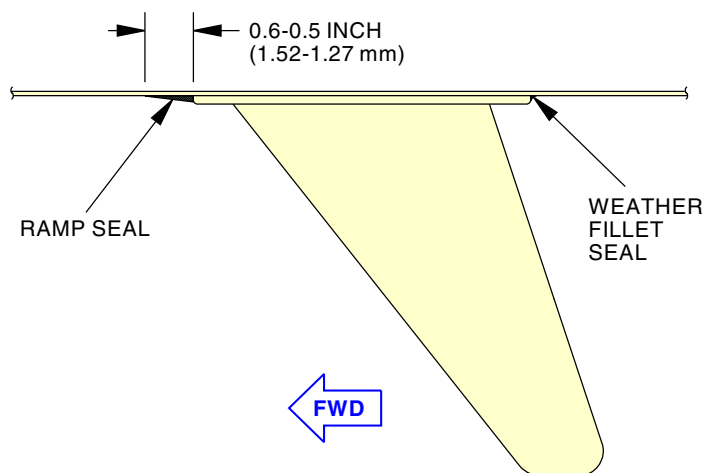
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CORROSION PROTECTION

A-A



AERODYNAMIC SEAL

B

K36563 S0006404673_V3

VHF Communication Antenna Installation
Figure 401/23-12-03-990-801 (Sheet 2 of 2)

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TASK 23-12-03-400-801

3. VHF Communication Antenna - Installation

(Figure 401)

A. General

- (1) A maintenance access terminal (MAT) is necessary for this procedure. For instructions on how to use a MAT, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
20-30-84-910-801	Final Cleaning of Metal Prior to Painting (Series 84) (P/B 201)
20-30-88-910-801	Final Cleaning of Metal Prior to Non-structural Bonding (Series 88) (P/B 201)
23-12-00-730-801	VHF Communication System - System Test (P/B 501)
23-12-03-300-801	VHF Communication Antenna Paint/Mark Procedure (P/B 701)
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)
51-21-03-100-801	Corrosion Removal and Control (P/B 701)
51-21-04-620-801	Alodine 600, 1000, 1200, and 1200S Coating Application (P/B 701)
51-31-01-390-806	Aerodynamic Smoother Application (P/B 201)
SL 20-016	DEFERRED APPLICATION OF AERO-SEALANT IN ANTENNA INSTALLATIONS
SWPM 20-20-00	Standard Wiring Practices Manual

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

D. Consumable Materials

Reference	Description	Specification
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
B01004	Solvent - Final Cleaning Of Metal Prior To Painting - Series 84	
B01008	Solvent - Final Cleaning Of Metal Prior To Non-Structural Bonding - Series 88	

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Reference	Description	Specification
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79 Type III
C00913	Compound - Corrosion Inhibiting Material, Nondrying Resin Mix	BMS3-27
D00254	Compound - Silicone	SAE AS8660 (NATO S-736) (Supersedes MIL-S-8660)
D00633	Grease - Aircraft General Purpose	BMS3-33
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	VHF communication antenna	23-12-03-01-210	ARO ALL
		23-12-03-01-290	ARO ALL
		23-12-03-01-410	ARO ALL

F. Location Zones

Zone	Area
123	Area Below Forward Cargo Compartment, Left
153	Area Below Aft Cargo Compartment, Left
211	Flight Compartment, Left
212	Flight Compartment, Right
233	Area Above Passenger Compartment Ceiling, Left - Section 43
234	Area Above Passenger Compartment Ceiling, Right - Section 43

G. Prepare for the Installation

SUBTASK 23-12-03-860-002

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R
G	8	C23604	VHF COMM C

SUBTASK 23-12-03-110-001



WARNING

DO NOT GET SOLVENT IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- (2) Clean the airplane mating surface with Series 88 solvent, B01008 (TASK 20-30-88-910-801).

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- (a) Make a clean cotton wiper, G00034 moist (not soaked) with Series 88 solvent, B01008 (TASK 20-30-88-910-801).
- (b) Rub the airplane mating surface with the cotton wiper, G00034 until the surface is clean.

SUBTASK 23-12-03-370-001

- (3) If the finish on the airplane mating surface has corrosion or other damage, do the steps that follow to clean and prepare the surface:
 - (a) If it is necessary, do this task: Corrosion Removal and Control, TASK 51-21-03-100-801.
 - (b) Do this task: Alodine 600, 1000, 1200, and 1200S Coating Application, TASK 51-21-04-620-801.

NOTE: This procedure has steps to clean and prepare the surface before you apply the alodine.

- 1) Make sure the alodine layer is approximately 1/4-inch larger than the antenna baseplate.
- (c) Apply two layers of primer, C00175 to the mating surface.
 - 1) Make sure the primer, C00175 layer is approximately 1/4-inch larger than the antenna baseplate.

SUBTASK 23-12-03-420-001

- (4) Do these steps to install the VHF antenna O-ring [3]:
 - (a) Make sure the O-ring [3] is not damaged.
 - (b) Apply a layer of grease, D00633 in the O-ring groove in the antenna baseplate.
 - (c) Apply a layer of grease, D00633 on the O-ring [3].
 - (d) Install the O-ring [3] in the O-ring groove.
 - 1) Make sure you install the O-ring [3] correctly.

SUBTASK 23-12-03-620-001



WARNING

DO NOT GET THIS MATERIAL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THIS MATERIAL. PUT ON A RESPIRATOR, EYE PROTECTION (GOGGLES, OR OTHER APPROVED PROTECTION), AND GLOVES BEFORE YOU USE THIS MATERIAL. MAKE SURE THAT THERE IS SUFFICIENT AIRFLOW. KEEP THIS MATERIAL AWAY FROM SPARKS, FLAME, AND HEAT. THIS MATERIAL CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.



WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

- (5) Do these steps to do the corrosion protection for the mating surface (Figure 401):
 - (a) Apply a layer of Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 to the surfaces that follow:
 - 1) The opening for the coaxial connector [4]
 - 2) The nutplates
 - 3) The threads and shank of each bolt [2].

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- (b) Apply a very thin layer of Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 on the mating surface of the VHF communication antenna [1]:
 - 1) Make sure you apply Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 on the pressurized and the not pressurized surfaces adjacent to the O-ring [3].
 - 2) Do not get Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 on the O-ring [3] or in the O-ring groove.
 - 3) Do not get Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 on the coaxial connector [4].

H. Installation Procedure

SUBTASK 23-12-03-420-002

- (1) Install the VHF communication antenna [1]:
 - (a) Connect the coaxial connector [4] to the VHF communication antenna [1].
 - (b) For a bottom VHF communication antenna [1], apply a layer of silicone compound, D00254 on the coaxial connector [4].
 - (c) Put the VHF communication antenna [1] in its position and install 9 of the 10 bolts [2].

NOTE: Leave one of the 10 bolts [2] out to do an electrical bond check.

SUBTASK 23-12-03-700-001

- (2) Measure the resistance between the VHF communication antenna [1] baseplate and the airplane skin with an intrinsically safe approved bonding meter, COM-1550 (SWPM 20-20-00).

NOTE: Use the empty bolt hole to get access to the antenna baseplate.

- (a) Make sure the resistance is 0.025 ohms or less.

SUBTASK 23-12-03-420-003

- (3) Install the last bolt [2].



USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

- (a) If Cor-Ban 27L Compound, G50237 has been applied to the bolts [2], tighten the bolts [2] between 73 in-lb (8.2 N·m) to 77 in-lb (8.7 N·m).



DO NOT GET THIS MATERIAL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THIS MATERIAL. PUT ON A RESPIRATOR, EYE PROTECTION (GOGGLES, OR OTHER APPROVED PROTECTION), AND GLOVES BEFORE YOU USE THIS MATERIAL. MAKE SURE THAT THERE IS SUFFICIENT AIRFLOW. KEEP THIS MATERIAL AWAY FROM SPARKS, FLAME, AND HEAT. THIS MATERIAL CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (b) If Mastinox 6856 K, C00913 has been applied to the bolts [2], tighten the bolts [2] between 78 in-lb (8.8 N·m) to 82 in-lb (9.3 N·m).

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SUBTASK 23-12-03-110-002



USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.



DO NOT GET THIS MATERIAL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THIS MATERIAL. PUT ON A RESPIRATOR, EYE PROTECTION (GOGGLES, OR OTHER APPROVED PROTECTION), AND GLOVES BEFORE YOU USE THIS MATERIAL. MAKE SURE THAT THERE IS SUFFICIENT AIRFLOW. KEEP THIS MATERIAL AWAY FROM SPARKS, FLAME, AND HEAT. THIS MATERIAL CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (4) If Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 is around the edge of the flange, or is on the bolt heads, clean the surfaces with Series 84 solvent, B01004 (TASK 20-30-84-910-801) until all the Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 is removed.

NOTE: Sealant will not bond to the compound.

SUBTASK 23-12-03-390-001

- (5) Apply sealant, A02315 around the flange of the VHF communication antenna [1] to make an aerodynamic seal (TASK 51-31-01-390-806).

NOTE: Operators can defer the application of the aero-sealant in the antenna installation to avoid a flight delay (SL 20-016).

- (a) Use a hardwood or plastic fillet smoothing spatula, STD-810 to make an aerodynamic ramp seal at the leading edge of the flange.

NOTE: Make sure you make the aerodynamic ramp seal before you make the weather fillet seal.

- 1) Start the ramp seal 0.50 to 0.60 inches forward of the flange.
 - 2) Keep the width of the ramp seal constant.
- (b) Apply a weather fillet seal around the remaining edge of the flange.

SUBTASK 23-12-03-370-002



DO NOT USE METAL BASED PAINT. A HIGH VSWR WILL OCCUR AND CAUSE DAMAGE TO THE VHF COMMUNICATION TRANSCEIVER.

- (6) To apply optional paint stripes to the VHF communication antenna [1], do this task: VHF Communication Antenna Paint/Mark Procedure, TASK 23-12-03-300-801.

SUBTASK 23-12-03-860-003

- (7) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R

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(Continued)

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	C23604	VHF COMM C

I. Installation Test

NOTE: This is not a full test of the system. If a full test is necessary, do the system test (TASK 23-12-00-730-801).

SUBTASK 23-12-03-860-004

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-12-03-740-001

(2) Use a maintenance access terminal (MAT), do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808

to do a test of the applicable VHF communication antenna [1]:

(a) Make these selections on the MAT:

- 1) ONBOARD MAINTENANCE
- 2) LINE MAINTENANCE
- 3) GROUND TESTS
- 4) 23 VHF Communication System
- 5) SYSTEM TEST
- 6) VHF Communication System (Left, Right, Center)
- 7) CONTINUE

(b) Do the instructions that show on the MAT and then make these selections:

- 1) CONTINUE
- 2) START TEST

(c) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITION on the MAT.

(d) If FAILED shows, select the maintenance message and select MAINTENANCE MESSAGE DATA or refer to the applicable Maintenance Message Index in the FIM.

————— **END OF TASK** —————

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VHF COMMUNICATION ANTENNA - CLEANING/PAINTING

1. General

- A. This procedure has this task:
- (1) A paint/mark procedure for the VHF communication antenna.
- B. The VHF communication antenna is referred to as the VHF antenna.
- C. Antenna paint erosion due to wind and rain is considered normal. If any signs of cracks or delamination are discovered, the VHF antenna should be considered for replacement.

TASK 23-12-03-300-801

2. VHF Communication Antenna Paint/Mark Procedure

(Figure 701)

A. References

Reference	Title
20-30-85-910-801	Final Cleaning of Solvent Sensitive Organic Coatings Prior to Painting (Series 85) (P/B 201)

B. Consumable Materials

Reference	Description	Specification
B01005	Solvent - Final Cleaning Of All Organic Coatings Prior To Painting - Series 85	
C00033	Coating - Protective Enamel, Flexibility Use	BMS10-60 Type II
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

C. Location Zones

Zone	Area
123	Area Below Forward Cargo Compartment, Left
153	Area Below Aft Cargo Compartment, Left
211	Flight Compartment, Left
212	Flight Compartment, Right
233	Area Above Passenger Compartment Ceiling, Left - Section 43
234	Area Above Passenger Compartment Ceiling, Right - Section 43

D. VHF Antenna Painting/Marking

SUBTASK 23-12-03-860-006

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R
G	8	C23604	VHF COMM C

SUBTASK 23-12-03-370-007

- (2) Do these steps to apply optional paint stripes to the bottom VHF antenna:

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WARNING

DO NOT GET SOLVENTS IN YOUR MOUTH, YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE DANGEROUS MATERIALS. SOLVENTS CAN BE FLAMMABLE. OBEY THE MATERIAL SAFETY DATA SHEETS (MSDS) FOR SOLVENTS. OBEY LOCAL REGULATIONS FOR THE CORRECT PROCEDURES TO USE OR DISCARD SOLVENTS. SOLVENTS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (a) Clean the surface of the VHF antenna with Series 85 solvent, B01005 (TASK 20-30-85-910-801).
 - 1) Make a clean cotton wiper, G00034 moist (not soaked) with Series 85 solvent, B01005 (TASK 20-30-85-910-801).
 - 2) Rub the VHF antenna with the cotton wiper, G00034 until the surface is clean.



CAUTION

DO NOT USE METAL-BASED PAINT. A HIGH VSWR WILL OCCUR. THIS CAN CAUSE DAMAGE TO THE VHF COMMUNICATION TRANSCEIVER.

- (b) Use the coating, C00033, Enamel or equivalent to apply paint stripes as shown in Figure 701.

SUBTASK 23-12-03-860-007

- (3) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	8	C23601	VHF COMM L
C	21	C23600	VHF COMM R
G	8	C23604	VHF COMM C

————— **END OF TASK** —————

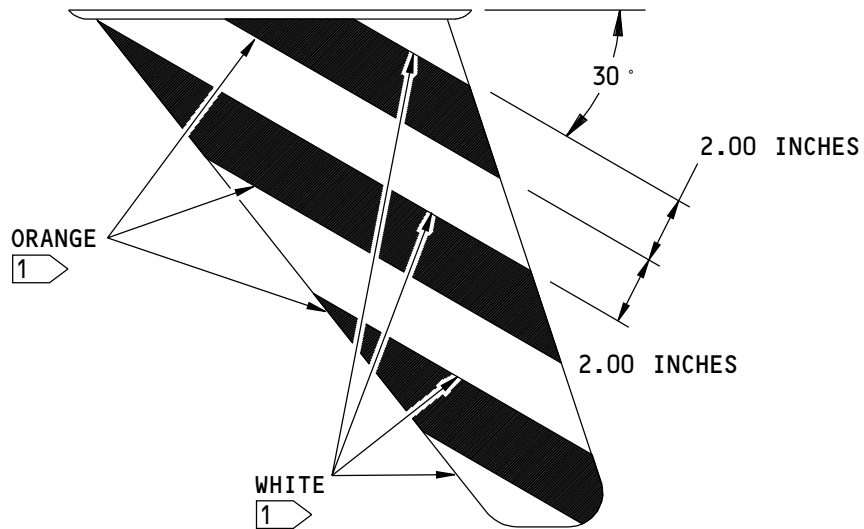
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BOTTOM CENTERLINE VHF ANTENNA
MARKING PAINT STRIPES
(EXAMPLE)

1 DO NOT USE METAL BASED PAINT

H05662 S0006404678_V1

Bottom Centerline VHF Antenna Marking
Figure 701/23-12-03-990-802

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SATELLITE COMMUNICATIONS (SATCOM) SYSTEM - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

- (1) Satellite Communications (SATCOM) System Deactivation.
- (2) Satellite Communications (SATCOM) System Activation.

TASK 23-15-00-040-801-001

2. Satellite Communications (SATCOM) System - Deactivation

A. **General**

- (1) This task removes electrical power from the Satellite Communications (SATCOM) System.

B. **Location Zones**

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
211	Flight Compartment, Left
212	Flight Compartment, Right
243	Area Above Passenger Compartment Ceiling, Left - Section 44
244	Area Above Passenger Compartment Ceiling, Right - Section 44
253	Area Above Passenger Compartment Ceiling, Left - Section 46

C. **Access Panels**

Number	Name/Location
117AL	Main Equipment Center Access Door

D. **Procedure**

SUBTASK 23-15-00-010-002-001

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-15-00-860-068-001

- (2) 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>
E	20	C23431	SAT HIGH L

- (3) 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>
E	17	C23427	SATL SDU L
F	6	C23425	VOX RCDR

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	12	C23485	SATL SDU R
D	13	C23486	SATL HIGH R

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E. Satellite Communications (SATCOM) System - Tryout

NOTE: This tryout is to make sure the Satellite Communications (SATCOM) System is in a zero energy state.

SUBTASK 23-15-00-860-069-001

- (1) Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	20	C23431	SAT HIGH L

- (2) Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	17	C23427	SATL SDU L
F	6	C23425	VOX RCDR

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	12	C23485	SATL SDU R
D	13	C23486	SATL HIGH R

SUBTASK 23-15-00-700-001-001

- (3) On the Master Caution and Display Units make sure the SAT> prompt does not display.

————— END OF TASK —————

TASK 23-15-00-440-801-001

3. Satellite Communications (SATCOM) System - Activation

A. General

- (1) This task adds electrical power to the Satellite Communications (SATCOM) System.

B. Location Zones

<u>Zone</u>	<u>Area</u>
117	Main Equipment Center, Left
118	Main Equipment Center, Right
211	Flight Compartment, Left
212	Flight Compartment, Right
243	Area Above Passenger Compartment Ceiling, Left - Section 44
244	Area Above Passenger Compartment Ceiling, Right - Section 44
253	Area Above Passenger Compartment Ceiling, Left - Section 46

C. Procedure

SUBTASK 23-15-00-860-070-001

- (1) 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>
E	20	C23431	SAT HIGH L

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- (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>
E	17	C23427	SATL SDU L
F	6	C23425	VOX RCDR

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	12	C23485	SATL SDU R
D	13	C23486	SATL HIGH R

SUBTASK 23-15-00-700-002-001

- (3) On the Master Caution and Display Units make sure the SAT> prompt is displayed.

———— **END OF TASK** ————

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SATELLITE COMMUNICATIONS (SATCOM) SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure has these tasks for the left SATCOM system:
- (1) SATCOM System - Ground Test
 - (2) SATCOM System - Operational Test
 - (3) SATCOM System - System Test
- B. This procedure also has this task for the right SATCOM system:
- (1) SATCOM System (Right SATCOM) - BITE Test

TASK 23-15-00-740-804

2. Satellite Communications (SATCOM) System - Ground Test

A. **General**

- (1) This task is applicable to the left SATCOM system only.
- (2) The SATCOM system is not available for communications during this test.
- (3) A maintenance access terminal is necessary for the ground test. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.
- (4) The ground test does a check of these components and functions:
 - (a) satellite data unit (SDU)
 - (b) high power amplifier (HPA) for the high gain antenna (HGA)
 - (c) low noise amplifier/diplexer for the top-mounted high gain antenna (TMHGA)
 - (d) top-mounted high gain antenna (TMHGA) and its beam steering function
 - (e) operation of the ARINC 429 input buses for the SDU
- (5) The ground test includes a power-on self test that does processor and memory tests for the satellite data unit.
- (6) The ground test does not include a check of the components and functions that follow:
 - (a) wiring between the SDU and the audio management unit
 - (b) coaxial cables.

B. **References**

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. **Location Zones**

Zone	Area
212	Flight Compartment, Right

D. **Procedure**

SUBTASK 23-15-00-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

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SUBTASK 23-15-00-860-023

- (2) Do these steps to prepare for the ground test:

NOTE: All SATCOM communications stop during this test. If SATCOM communications are in progress, they are disconnected when you do this test.

- (a) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801.

- (b) Do these steps at a control display unit (CDU) (P8 or P9):

- 1) Push the MENU key.
- 2) Push the line select key (LSK) adjacent to <SAT.
- 3) Push the LSK adjacent to <SUBMENU (SATCOM MAIN MENU page).
- 4) Push the LSK adjacent to <LOG-ON.

NOTE: It can take up to 10 minutes for the SATCOM system to log-on automatically to the ground earth station (GES).

- a) Make sure that "LOGGED-ON AUTO" shows adjacent to LSK 1L on the CDU.
- 5) If the LOG-ON STATE shows that the SATCOM system is logged-on or logging on, push the LSK adjacent to LOG-OFF*.
- 6) When the LOG-ON STATE shows that the system is logged-off, continue the procedure.

SUBTASK 23-15-00-740-009

- (3) Use a maintenance access terminal (MAT) to do the SATCOM system test:

- (a) Make these selections on the MAT:

- 1) ONBOARD MAINTENANCE
- 2) LINE MAINTENANCE
- 3) GROUND TESTS
- 4) 23 Satellite Communications (SATCOM) System
- 5) SYSTEM TEST
- 6) Left SATCOM System
- 7) CONTINUE

- (b) Do the instructions that show on the MAT and then make these selections:

- 1) CONTINUE
- 2) START TEST

- (c) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITION on the MAT.

- (d) If FAILED shows, refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

E. Put the Airplane Back in Its Usual Condition

SUBTASK 23-15-00-860-037

- (1) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch on the overhead panel, P5, to the OFF position.

————— **END OF TASK** —————

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TASK 23-15-00-710-803

3. Satellite Communications (SATCOM) System - Operational Test

A. General

- (1) This task is applicable to the left SATCOM system only.
- (2) The operational test includes these tests:
 - (a) The ground test
 - (b) A radio frequency (RF) link test.
- (3) The operational test is a short test to make sure the SATCOM system is serviceable.
- (4) When you do the operational test, make sure the airplane is not in or near a large metal structure. The SATCOM antennas must have a clear view to the applicable satellite. Buildings and other large objects can prevent a clear view.

B. References

Reference	Title
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Ground Test

SUBTASK 23-15-00-740-008

- (1) Do this task: Satellite Communications (SATCOM) System - Ground Test, TASK 23-15-00-740-804.

E. RF Link Test

SUBTASK 23-15-00-860-031

- (1) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801.

SUBTASK 23-15-00-710-010

- (2) Do these steps at a control display unit (CDU) (P8 or P9):
 - (a) Push the MENU key.
 - 1) Make sure that <SAT shows.
 - (b) Push the line select key (LSK) adjacent to <SAT.
 - (c) Push the LSK adjacent to <SUBMENU (SATCOM MAIN MENU page).
 - (d) Push the LSK adjacent to <LOG-ON (SATCOM SUBMENU page).
 - (e) When the LOG-ON STATE shows LOGGED ON AUTO, continue the procedure.

NOTE: When the SATCOM system is warm, LOGGED ON AUTO usually shows in less than 2 minutes. If the SATCOM system is very cold, approximately 10 minutes can be necessary for the SATCOM system to become warm.

ARO 001, 002

- (f) Do these steps to make sure that the HSDU is ready for high speed data operation:
 - 1) Push the LSK adjacent to RETURN>.
 - 2) Push the LSK adjacent to CHANNEL STATUS>.
 - 3) Push the LSK adjacent to <HSD CHANNELS.

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ARO 001, 002 (Continued)

- 4) Make sure that "ready to connect" or "in use mpds" shows (HSD CHANNEL STATUS page).

NOTE: This step is to make sure that the High Speed Data Unit is logged-on and it is ready for Swift64 or SwiftBroadband service.

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- (g) Push the MENU key.

F. Put the Airplane Back in Its Usual Condition

SUBTASK 23-15-00-860-032

- (1) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch on the overhead panel, P5, to the OFF position.

————— END OF TASK —————

TASK 23-15-00-710-802

4. Satellite Communications (SATCOM) System - System Test

A. General

- (1) This task is applicable to the left SATCOM system only.
- (2) The system test includes these tests:
 - (a) An owner requirements table (ORT) software configuration check.
 - (b) The ground test.
 - (c) The RF link test for the high gain antenna.
 - (d) The voice communication test.
- (3) The software configuration check makes sure that the satellite data unit has correct software.
- (4) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.
- (5) When you do the system test, make sure that the airplane is not in or near a large metal structure. The SATCOM antenna (that the system uses to make the RF link) must have a clear view to the applicable satellite. Buildings and other large objects can prevent a clear view.
- (6) The voice communication test uses the captain's audio control panel, headset and push-to-talk switch. But you also can do this test with equipment at one of the other flight crew positions.

B. References

Reference	Title
23-15-10-400-802	Satellite Data Unit Software Installation (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment, Left

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(Continued)

Zone	Area

212	Flight Compartment, Right

D. Procedure

SUBTASK 23-15-00-860-035

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-15-00-860-036

(2) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801.

E. Software Configuration Check

SUBTASK 23-15-00-750-002

(1) Use a maintenance access terminal (MAT) to do a software configuration check of the satellite data unit:

NOTE: Make sure you know the correct software part numbers for the satellite data unit when you look at the software part numbers on the display. For the satellite data unit to be an approved installation, the correct software part numbers must be installed.

(a) Make these selections on the MAT:

- 1) ONBOARD MAINTENANCE
- 2) LINE MAINTENANCE
- 3) SYSTEM CONFIGURATION
- 4) 23 Satellite Communications (SATCOM) System
- 5) CONTINUE

(b) Find Satellite Data Unit (Left) on the display and make sure that the software part number is correct.

(c) Select GO BACK to remove the configuration display.

SUBTASK 23-15-00-400-002

(2) If the part number is incorrect, do this task: Satellite Data Unit Software Installation, TASK 23-15-10-400-802.

F. Ground Test

SUBTASK 23-15-00-740-007

(1) Do this task: Satellite Communications (SATCOM) System - Ground Test, TASK 23-15-00-740-804.

ARO 001-016

G. RF Link Test for the High Gain Antenna

SUBTASK 23-15-00-710-011

(1) Do these steps at a control display unit (CDU) (P8 or P9):

- (a) Push the MENU key.
- (b) Push the line select key (LSK) adjacent to <SAT.
- (c) Push the LSK adjacent to <SUBMENU (SATCOM MAIN MENU page).
- (d) Push the LSK adjacent to <LOG-ON.

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ARO 001-016 (Continued)

- (e) When the LOG-ON STATE shows LOGGED-ON AUTO, continue the procedure.

NOTE: When the SATCOM system is warm, LOGGED-ON AUTO usually shows in less than 2 minutes. If the SATCOM system is very cold, approximately 10 minutes can be necessary for the SATCOM system to become warm.

ARO 001, 002

- (f) Push the LSK adjacent to RETURN>.
- (g) Push the LSK adjacent to CHANNEL STATUS>.
- (h) Push the LSK adjacent to <HSD CHANNELS.
- (i) Make sure that "ready to connect" or "in use mpds" shows on the HSD CHANNEL STATUS page.

NOTE: This step is to verify the High Speed Data unit is logged on or is ready for Swift64 service.

ARO 001-016

- (j) Push the LSK adjacent to RETURN> until the SATCOM MAIN MENU shows.

H. Voice Communication Test

SUBTASK 23-15-00-710-012



MAKE SURE PERSONS STAY A MINIMUM OF 10 FEET AWAY FROM THE HIGH GAIN ANTENNA DURING THE VOICE COMMUNICATION TEST. RF ENERGY CAN CAUSE INJURIES TO PERSONS.

- (1) Do these steps to do the voice communication test:
- (a) At the captain's audio control panel (ACP), push the applicable receiver volume controls to make all the receiver lights go off.
- (b) Do these steps at the CDU:
- 1) On the SATCOM MAIN MENU page, push the LSK adjacent to DIRECTORY>.
 - 2) Use the directory and category pages to make a phone number selection for an approved call.
 - 3) If *MAKE CALL shows for the applicable call, push the LSK adjacent to it.
- (c) When the call is connected, make sure the CALL light for SAT 1 or SAT 2 comes on at each ACP.
- (d) At the captain's ACP, push the applicable transmitter select switch (SAT 1 or SAT 2).
- 1) Turn the applicable receiver volume control (SAT 1 or SAT 2) fully clockwise.
- (e) Use the captain's headset to speak with the person at the other end of the connection:
- 1) On the captain's ACP, push and hold the mic/interphone switch in the MIC position.
 - 2) Make sure the quality of the transmitted and received voice is good.
 - 3) While you hear the received voice, slowly turn the applicable receiver volume control on the captain's ACP.
 - a) Make sure the sound level changes smoothly without a change in voice quality.
 - 4) Release the mic/interphone switch.

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ARO 001-016 (Continued)

- (f) At the CDU, push the LSK adjacent to END CALL* for the applicable name (SATCOM MAIN MENU page).

ARO ALL

I. Put the Airplane Back in Its Usual Condition

SUBTASK 23-15-00-860-024

- (1) Push the MENU key on the CDU.

SUBTASK 23-15-00-860-022

- (2) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch on the overhead panel, P5, to the OFF position.

SUBTASK 23-15-00-862-002

- (3) If the electrical power is not necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-806.

————— END OF TASK —————

TASK 23-15-00-740-807

5. Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test

A. General

- (1) This task is applicable to the right SATCOM system only.
- (2) The BITE test includes this test:
- (a) BITE test for the right SATCOM system.
- (3) The purpose of this task is to verify the integrity of the Right SATCOM System installation.
- (4) The Interactive Control Management Terminal (iCMT) of the IFE system is necessary for this procedure, because the right SATCOM system supports the cabin IFE functions only. It does not interface with the CMCF, the left and right DCMF, the dataload gateway function and the three FMC MCDUs in the flight compartment.
- (5) When you do the BITE test, make sure that the airplane is not in or near a large metal structure. The SATCOM antenna (that the system uses to make the RF link) must have a clear view to the applicable satellite. Buildings and other large objects can prevent a clear view.
- (6) The BITE function of the second SATCOM is displayed in the front panel of the SDU-R. The SDU-R is located at the electronic equipment rack, E13-1.

NOTE: Access to the E13 rack is through a ceiling panel on the right passenger compartment ceiling, at approximately station 1077.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

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Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

D. Location Zones

Zone	Area
222	Passenger Compartment, Right - Section 41
244	Area Above Passenger Compartment Ceiling, Right - Section 44

E. Prepare for the BITE Test

SUBTASK 23-15-00-860-057

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-15-00-860-058

- (2) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801.

SUBTASK 23-15-00-010-001

- (3) Remove the inboard main cabin ceiling panel to get access to the electronic equipment rack, E13-1.

NOTE: Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the E13-1 electronics equipment rack.

SUBTASK 23-15-00-860-059

- (4) Supply electrical power to the In-flight Entertainment System (IFES):
- (a) At the flight compartment's overhead panel, P5, set the IFE/PASS Seats or Broadband Com switch to the ON position.
 - (b) At the Video Control Center (VCC), set the IFE MASTER POWER switch to the ON position.
 - (c) At the Video Control Center (VCC), set the CONNECTIVITY POWER switch to the ON position.

SUBTASK 23-15-00-860-060

- (5) Make sure that the Interactive Control Management Terminal (iCMT) at the VCC is ON and main MENU screen is displayed.

SUBTASK 23-15-00-860-061

- (6) To log into the MAINTENANCE screens using the iCMT, do the steps that follow:
- (a) From the main MENU screen, select the Maintenance button.
 - 1) Make sure that the MAINTENANCE PASSWORD screen shows.
 - (b) Use the keypad to enter the maintenance password "6232", then push the Okay button.
 - 1) Make sure that the MAINTENANCE screen shows.

F. Right SATCOM System - BITE Test

SUBTASK 23-15-00-740-020

- (1) To test the right SATCOM functionality using the OMTS Maintenance GUI, do the steps that follow:
- (a) From the MAINTENANCE screen, select the Connectivity button.
 - 1) Make sure that the Connectivity Control screen shows.
 - (b) Select OMTS Service in the Connectivity Control screen.

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- (c) Select SDU from the navigation area on top to the screen.
- (d) Examine the BITE status reported by the SDU as specified in the table:

SDU MIB	EXPECTED VALUE
asuAntInfoOverallStatus	Pass
asuAntInfoTemperatureStatus	OK
asuDlnaInfoOverallStatus	Pass
asuScmInfoOverallStatus	Pass
asuSduInfoAntennaBus	Pass
asuSduInfoCC1Status	Pass
asuSduInfoCC2Status	Pass
asuSduInfoIRS1BusStatus	Pass
asuSduInfoMultiControlBus	Pass
asuSduInfoOverallStatus	Pass
asuSduInfoQuadrax1Status	Unconnected
asuSduInfoRetLossToAntenna	Normal
asuSduInfoStrapsState	TRUE
asuSduInfoThermState	Normal
DlnaToSduRxPath	OK
SduToScmBus	OK
ScmToSduBus	OK

- (e) To return back to the Connectivity Control screen, select the Done button from the OMTS MAINTENANCE GUI navigation area.
- (f) To return back to the MAINTENANCE screen, select the Done button from the Connectivity Control screen.

SUBTASK 23-15-00-740-021

- (2) To test the right SATCOM functionality using the WI-FI Maintenance GUI, do the steps that follow:
 - (a) From the MAINTENANCE screen, select the Connectivity button.
 - 1) Make sure that the Connectivity Control screen shows.
 - (b) Select Wi-Fi Service button in the Connectivity Control screen.
 - 1) Make sure that the WI-FI MAINTENANCE GUI screen shows.
 - (c) From the WI-FI MAINTENANCE GUI navigation area, make sure that “OK” is shown for SATCOM '1_Thales' in the Hardware section.
 - (d) From the WI-FI MAINTENANCE GUI navigation area, make sure that “Connected” is shown for Link 1_Thales/SBB-1 and Link 1_Thales/SBB 2 in the Context section.
 - (e) To return back to the Connectivity Control screen, select the Done button from the WI-FI MAINTENANCE GUI navigation area.
 - (f) To return back to the MAINTENANCE screen, select the Done button from the Connectivity Control screen.

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SUBTASK 23-15-00-740-022

- (3) Examine the BITE status in the front panel of the right SDU:
 - (a) Get access to the electronics equipment rack, E13-1.
 - (b) Examine the LED indicators in front of the right SDU.
 - (c) Make sure that the SDU BITE LED status indications as specified in the table:

SDU BITE STATUS:

LRU	LED STATUS
SDU	GREEN
SCM	GREEN
ANTENNA	GREEN
DLNA	GREEN
EXT. HPA	(Note: this LED is off)
EXT. BSU	GREEN
EXT. DATA BUS	GREEN
ORT/CONFIG	GREEN
SAT LINK #1	GREEN LED indicator comes on when channel 1 is available. If the LED flashes green, the SDU is in self-test. If the indicator is OFF, the SDU is not powered ON or not attempting log-on.
SAT LINK #2	GREEN LED indicator comes on when channel 2 is available. If the LED flashes green, the SDU is in self-test. If the indicator is OFF, the SDU is not powered ON or not attempting log-on.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 23-15-00-860-064

- (1) At the iCMT, select the Customer Login button in the MAINTENANCE screen to return back to the main MENU screen.

SUBTASK 23-15-00-860-063

- (2) Remove electrical power from the In-flight Entertainment System (IFES) if not necessary for other task:
 - (a) At the flight compartment's overhead panel, P5, set the IFE/PASS Seats or Broadband Com switch to the OFF position.
 - (b) At the Video Control Center (VCC), set the IFE MASTER POWER switch to the OFF position.
 - (c) At the Video Control Center (VCC), set the CONNECTIVITY POWER switch to the OFF position.

SUBTASK 23-15-00-410-001

- (3) Install the inboard main cabin ceiling panel that access to the electronics equipment rack, E13-1 (Main Ceiling Panel - Installation, TASK 25-21-06-400-801).

SUBTASK 23-15-00-860-062

- (4) Remove electrical power if it is not necessary for other task Remove Electrical Power, TASK 24-22-00-860-806.

————— END OF TASK —————

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**LOW NOISE AMPLIFIER/DIPLEXER FOR TOP-MOUNTED HIGH GAIN ANTENNA (TMHGA) - REMOVAL/
INSTALLATION**

1. General

- A. This procedure has these tasks:
- (1) A removal of the low noise amplifier/diplexer (LNA/Diplexer) for the top-mounted high gain antenna (TMHGA).
 - (2) An installation of the low noise amplifier/diplexer for the TMHGA.
- B. There are two LNA/Diplexers installed for the SATCOM systems:
- (1) The LNA/Diplexer (M23110) is for the left SATCOM system.
 - (2) The LNA/Diplexer (M23210) is for the right SATCOM system.
- C. The low noise amplifier/diplexer, M23110, is above the passenger compartment ceiling at station 1632, near the top-mounted high gain antenna.
- D. The low noise amplifier/diplexer, M23110, is above the passenger compartment ceiling at station 1632, near the top-mounted high gain antenna.
- E. The low noise amplifier/diplexer, M23210, is above the passenger compartment ceiling at station 1108, near the top-mounted high gain antenna.
- F. The left power management panel, P110 is on the left side of the main equipment center.
- G. The right power management panel, P210 is on the right side of the main equipment center.

TASK 23-15-08-000-801

2. Low Noise Amplifier/Diplexer for Top-Mounted High Gain Antenna Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) This task includes the steps to remove the LNA/Diplexer (M23110) for the left SATCOM system.

B. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)

C. Location Zones

Zone	Area
117	Main Equipment Center, Left
253	Area Above Passenger Compartment Ceiling, Left - Section 46

D. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

E. Removal Procedure

SUBTASK 23-15-08-010-001

- (1) Open this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

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(TASK 06-41-00-800-801).

SUBTASK 23-15-08-860-011

- (2) 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>
E	20	C23431	SAT HIGH L

SUBTASK 23-15-08-010-002

- (3) Remove the inboard main ceiling panel [1]. To remove it, do this task: Main Ceiling Panel - Removal, TASK 25-21-06-000-801.

SUBTASK 23-15-08-020-001

- (4) Remove the LNA/diplexer [2]:
- (a) Disconnect the electrical connectors [3].
 - (b) Remove the bolts [4] and washers [5].
 - (c) Put protective covers on the electrical connectors [3].

————— **END OF TASK** —————

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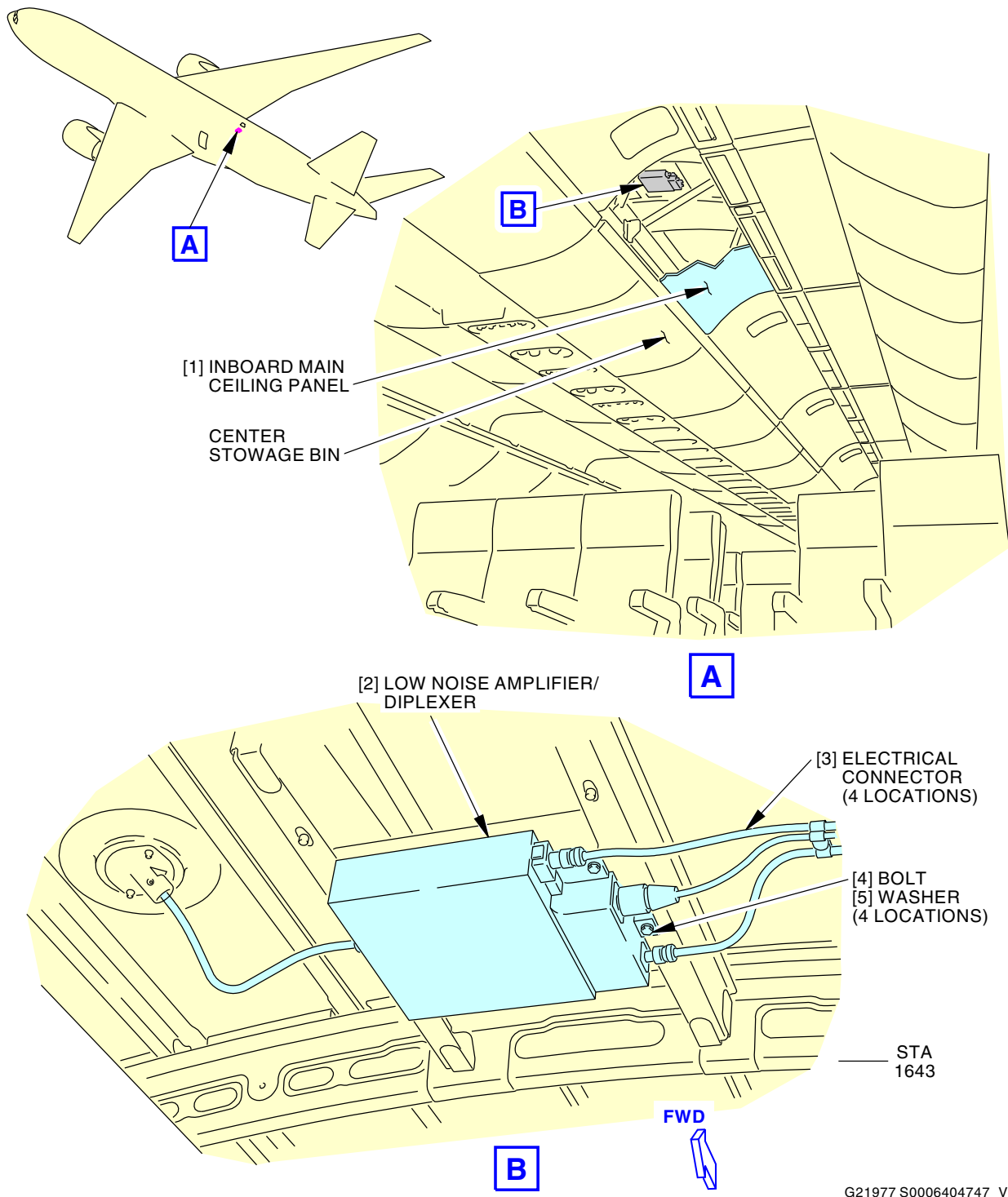
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Low Noise Amplifier/Diplexer for Top-Mounted High Gain Antenna Installation
Figure 401/23-15-08-990-801

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TASK 23-15-08-400-801

3. Low Noise Amplifier/Diplexer for Top-Mounted High Gain Antenna Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) This task includes the steps to install the LNA/Diplexer (M23110) for the left SATCOM system.
- (2) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
23-15-00-740-804	Satellite Communications (SATCOM) System - Ground Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)
SWPM 20-20-00	Standard Wiring Practices Manual

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
COM-2584	Pliers - Electrical Connector
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	LNA/diplexer	23-15-08-02-110	ARO ALL
		23-15-08-02A-025	ARO ALL

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E. Location Zones

Zone	Area
117	Main Equipment Center, Left
212	Flight Compartment, Right
253	Area Above Passenger Compartment Ceiling, Left - Section 46

F. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

G. Installation Procedure

SUBTASK 23-15-08-860-003

- (1) Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
E	20	C23431	SAT HIGH L

SUBTASK 23-15-08-860-004

- (2) Make sure the inboard main ceiling panel [1] is open.

SUBTASK 23-15-08-860-005

- (3) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the LNA/diplexer [2].

NOTE: The low noise amplifier/diplexer is referred to as the LNA/diplexer.

SUBTASK 23-15-08-420-001



DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (4) Install the LNA/diplexer [2]:
 - (a) Remove the protective covers from the electrical connectors [3].
 - (b) Examine the electrical connectors [3] for bent or broken pins, dirt, and damage.
 - (c) Make sure the airplane mounting surface for the LNA/diplexer [2] is clean and has no corrosion.
 - (d) Make sure the LNA/diplexer [2] mounting surface is clean and has no corrosion.
 - (e) Put the LNA/diplexer [2] in position.
 - (f) Install the washers [5] and bolts [4].

SUBTASK 23-15-08-760-001

- (5) Use a intrinsically safe approved bonding meter, COM-1550 to do an electrical bond check (SWPM 20-20-00):
 - (a) Measure the resistance from structure to one of the electrical connectors [3] (outer conductor) on the LNA/diplexer [2].
 - 1) Make sure the resistance is 0.0025 ohms or less.

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SUBTASK 23-15-08-420-002

- (6) Connect the electrical connectors [3].

NOTE: Use the electrical connector pliers, COM-2584 to tighten the electrical connectors. The plastic sleeves on the jaws to prevent damage to the electrical connectors.

SUBTASK 23-15-08-410-001

- (7) Install the inboard main ceiling panel [1]. To install it, do this task: Main Ceiling Panel - Installation, TASK 25-21-06-400-801.

SUBTASK 23-15-08-860-012

- (8) 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>
E	20	C23431	SAT HIGH L

SUBTASK 23-15-08-410-002

- (9) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

(TASK 06-41-00-800-801).

H. Installation Test

SUBTASK 23-15-08-860-007

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-15-08-860-008

- (2) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801.

SUBTASK 23-15-08-740-004

- (3) Do this task: Satellite Communications (SATCOM) System - Ground Test, TASK 23-15-00-740-804.
- (a) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
- (b) If FAILED shows, make sure there is no maintenance message for the LNA/diplexer [2].
- 1) If there is a maintenance message for the LNA/diplexer [2], refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

I. Put the Airplane Back in Its Usual Condition

SUBTASK 23-15-08-860-010

- (1) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch on the overhead panel, P5, to the OFF position.

————— END OF TASK —————

TASK 23-15-08-000-803

4. Low Noise Amplifier/Diplexer for Top-Mounted High Gain Antenna (Broadband) Removal

(Figure 402)

A. General

- (1) This task includes the steps to remove the LNA/Diplexer (M23210) for the right SATCOM system.

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B. References

Reference	Title
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-9906	Stepladder - 8foot

D. Location Zones

Zone	Area
118	Main Equipment Center, Right
243	Area Above Passenger Compartment Ceiling, Left - Section 44

E. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

F. Prepare for the Removal

SUBTASK 23-15-08-010-011

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-15-08-040-001

- (2) 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>
D	12	C23485	SATL SDU R

SUBTASK 23-15-08-010-012

- (3) Remove the inboard main ceiling panel for access to the LNA/Diplexer (Main Ceiling Panel - Removal, TASK 25-21-06-000-801).

SUBTASK 23-15-08-010-013

- (4) Use the cabin crown access platform, SPL-1541 or a 8 foot stepladder, STD-9906 to get access to the LNA/Diplexer.

G. Removal Procedure

SUBTASK 23-15-08-020-003

- (1) Remove the LNA/diplexer [2]:
- Disconnect the electrical connectors [3].
 - Remove bolts [4] and washers [5] that attach the LNA/Diplexer on its mounting structure.
 - Put protective covers on the electrical connectors [3].

————— **END OF TASK** —————

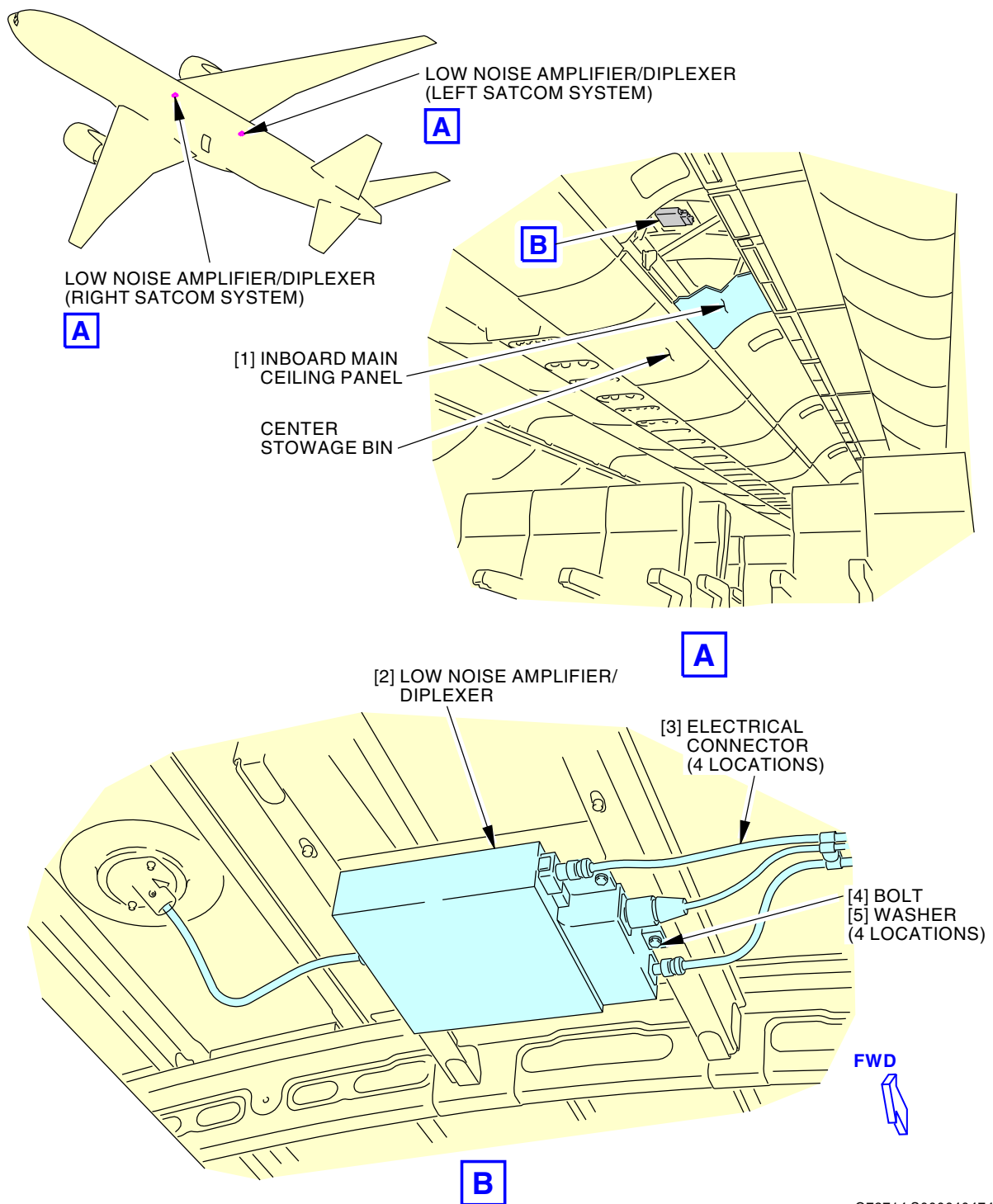
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LNA/Diplexer for Top-Mounted High Gain Antenna (Broadband) Installation
Figure 402/23-15-08-990-804

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TASK 23-15-08-400-803

5. Low Noise Amplifier/Diplexer for Top-Mounted High Gain Antenna (Broadband) Installation (Figure 402)

A. General

- (1) This task includes the steps to install the LNA/Diplexer (M23210) for the right SATCOM system.

B. References

Reference	Title
23-15-00-740-807	Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test (P/B 501)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
SWPM 20-20-00	Standard Wiring Practices Manual

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
COM-2584	Pliers - Electrical Connector
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-9906	Stepladder - 8foot

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	LNA/diplexer	23-15-08-02-110	ARO ALL
		23-15-08-02A-025	ARO ALL

E. Location Zones

Zone	Area
118	Main Equipment Center, Right
243	Area Above Passenger Compartment Ceiling, Left - Section 44

F. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

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G. Prepare for the Installation

SUBTASK 23-15-08-040-002

- (1) Make sure that this circuit breaker is open and has safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	12	C23485	SATL SDU R

SUBTASK 23-15-08-010-014

- (2) Make sure that the inboard main ceiling panel is removed for access to the LNA/Diplexer.

SUBTASK 23-15-08-010-015

- (3) Use the cabin crown access platform, SPL-1541 or a 8 foot stepladder, STD-9906 to get access to the LNA/Diplexer.

H. Installation Procedure

SUBTASK 23-15-08-420-005



DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (1) Install the LNA/diplexer [2]:
 - (a) Remove the protective covers from the electrical connectors [3].
 - (b) Examine the electrical connectors [3] for bent or broken pins, dirt, and damage.
 - (c) Make sure that the mounting surfaces on the LNA/diplexer [2] and its mounting structure are clean.
 - (d) Put the LNA/diplexer [2] in its mounting position.
 - (e) Install bolts [4] and washers [5] to attach the LNA/Diplexer on the mounting structure.

SUBTASK 23-15-08-760-003

- (2) Use a intrinsically safe approved bonding meter, COM-1550 to do an electrical bond check (SWPM 20-20-00):
 - (a) Measure the bond resistance from structure to one of the electrical connectors [3] (outer conductor) on the LNA/diplexer [2].
 - 1) Make sure the resistance is 0.0025 ohm or less.

SUBTASK 23-15-08-420-006

- (3) Connect the electrical connectors [3].

NOTE: Use the electrical connector pliers, COM-2584 to tighten the electrical connectors. The plastic sleeves on the jaws to prevent damage to the electrical connectors.

SUBTASK 23-15-08-440-001

- (4) 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>
D	12	C23485	SATL SDU R

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I. Installation Test

SUBTASK 23-15-08-740-006

- (1) Do this task: Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test, TASK 23-15-00-740-807.

J. Put the Airplane Back to Its Usual Condition

SUBTASK 23-15-08-410-010

- (1) Install the inboard main ceiling panel (Main Ceiling Panel - Installation, TASK 25-21-06-400-801).

SUBTASK 23-15-08-410-011

- (2) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

————— END OF TASK —————

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SATELLITE DATA UNIT - MAINTENANCE PRACTICES

1. General

- A. This procedure provides maintenance information for the left satellite data unit only:

NOTE: This procedure does not apply to the right SATCOM system because the right SATCOM system is not an onboard data loadable. The right SATCOM system has a SATCOM configuration module (SCM) that keeps the software and configuration data for the right SDU. The software parts will be preloaded into the SCM at the vendor or approved maintenance facility. If the SCM has the correct software, the software will be automatically installs into the right SDU from the SCM.

- (1) Software installation through the maintenance access terminal (MAT)

TASK 23-15-10-400-802

2. Satellite Data Unit Software Installation

A. General

- (1) This procedure tells you how to install the software in the satellite data unit (SDU). The names of the software parts that are loaded into an SDU follow:
- (a) SDU OPS
 - (b) SDU ORT
 - (c) SDU Secure ORT
- (2) The Secured ORT and the User ORT can come with two different sets of diskettes. If it is necessary to install the Secured ORT to the SDU, you must install the Secured ORT before the User ORT. Install the Secured ORT first because the Secured ORT will erase the existing User ORT in the SDU.
- (3) SATCOM communications are not available during this procedure.
- (4) To read about the conditions and times necessary for software installation, do this task: On-Airplane Software Installation, TASK 20-15-11-400-801.
- (5) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.
- (6) If you do not know if the SDU needs new software, you can first do the software configuration check. It will save time if you only install software when the software is missing or the part number is incorrect. You can find the software configuration check in this task:
Satellite Communications (SATCOM) System - System Test, TASK 23-15-00-710-802
- (7) You can use the GSE-Laptop, maintenance device, SPL-5704, as an alternative to the PMAT in this task.

NOTE: The GSE-Laptop and the PMAT are equivalent for all of the PMAT functions that you will use in this task.

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- (8) You can install the software from disks, the MAT hard drive or the PMAT hard drive (if available). It is recommended that you install software from the MAT or PMAT hard drive. To install new software on the MAT or PMAT hard drive, do this task: How to Add Software to the Hard Drive, TASK 45-10-00-860-812.

NOTE: When new software is installed in the SDU, the load process first erases the old software and then installs the new software. If you install software directly to the SDU from a faulty disk, the load process may erase the old software and then fail, so that no software is installed. If you install a faulty disk to the MAT or PMAT hard drive, the load may fail, but you will not erase the software from the SDU.

- (a) It is recommended that you remove old software part numbers from the MAT or PMAT hard drive after new software is installed. To remove software from the hard drive, do this task: How to Remove Software from the Hard Drive, TASK 45-10-00-860-813.
- (9) The airplane must be on the ground with the engines off before you can install software.

B. References

Reference	Title
20-15-11-400-801	On-Airplane Software Installation (P/B 201)
23-15-00-710-802	Satellite Communications (SATCOM) System - System Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)
45-10-00-860-812	How to Add Software to the Hard Drive (P/B 201)
45-10-00-860-813	How to Remove Software from the Hard Drive (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-5704	Device - Maintenance Part #: G45004-1 Supplier: 81205 Part #: G45004-3 Supplier: 81205 Opt Part #: G45002-20 Supplier: 81205 Opt Part #: G45002-25 Supplier: 81205 Opt Part #: G45002-29 Supplier: 81205 Opt Part #: J45001-1 Supplier: 81205 Opt Part #: J45003-1 Supplier: 81205

D. Location Zones

Zone	Area
212	Flight Compartment, Right

E. Procedure

SUBTASK 23-15-10-860-011

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-15-10-860-034

- (2) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801.

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SUBTASK 23-15-10-860-046

- (3) Do these steps to prepare for the software installation:

NOTE: If SATCOM communications are in progress, they are disconnected when you do the steps that follow.

- (a) Do these steps at a control display unit (CDU) (P8 or P9):
- 1) Push the MENU key.
 - 2) Push the line select key (LSK) adjacent to <SAT.
 - 3) Push the LSK adjacent to <SUBMENU (SATCOM MAIN MENU page).
 - 4) Push the LSK adjacent to <LOG-ON.
 - 5) If the LOG-ON STATE shows that the SATCOM system is logged-on or logging on, push the LSK adjacent to LOG-OFF*.
 - 6) When the LOG-ON STATE shows that the system is logged-off, continue the procedure.

SUBTASK 23-15-10-420-002

- (4) Use a maintenance access terminal (MAT) to install the owner's requirements table (ORT) software in the satellite data unit:

NOTE: Make sure you know the correct software part number for the satellite data unit before you select the software part number on the display. For the satellite data unit to be an approved installation, the correct software must be installed.

- (a) Make these selections on the MAT to make sure the left CMCF is in control:
- 1) ONBOARD MAINTENANCE
 - 2) OTHER FUNCTIONS
 - 3) CENTRAL MAINTENANCE COMPUTER SWITCH CONTROL
 - 4) If the MAT shows LEFT CENTRAL MAINTENANCE COMPUTER IS IN CONTROL, select GO BACK.
 - 5) IF the MAT shows RIGHT CENTRAL MAINTENANCE COMPUTER IS IN CONTROL, select SWITCH TO LEFT.
- (b) If the software is on a disk, put the correct disk in the disk drive.
- (c) Make these selections on the MAT:
- 1) EXTENDED MAINTENANCE
 - 2) DATA LOAD
- (d) Make these selections to select the component that will receive the software:
- 1) SELECT DESTINATION
 - 2) 23 Satellite Communications (SATCOM) System
 - 3) Satellite Data Unit (left)
 - 4) ADD
 - 5) CONTINUE
- (e) Make these selections to select the source of the software:
- 1) SELECT SOURCE
 - 2) Select the source of the software (if Disk Drive is the only selection, it is automatically selected).
 - 3) Select the correct software part number from the display.

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- 4) ADD
- 5) CONTINUE
- (f) Select START to start the software installation.
- (g) Select CONTINUE.
- (h) When the software installation is completed, make sure the correct software part number shows on the display.
- (i) Select CONTINUE to remove the configuration display.

F. Installation Test

SUBTASK 23-15-10-860-036

- (1) Do these steps to prepare for the ground test:
 - (a) Make sure the air data inertial reference unit is aligned (TASK 34-21-00-820-801).
 - (b) Do these steps at a CDU:
 - 1) Push the MENU key.
 - 2) Push the line select key (LSK) adjacent to <SAT.
 - 3) Push the LSK adjacent to <SUBMENU (SATCOM MAIN MENU page).
 - 4) Push the LSK adjacent to <LOG-ON.
 - 5) If the LOG-ON STATE shows that the SATCOM system is logged-on or logging on, push the LSK adjacent to LOG-OFF*.
 - 6) When the LOG-ON STATE shows that the system is logged-off, continue the procedure.

SUBTASK 23-15-10-730-002

- (2) Use a maintenance access terminal (MAT) to do the system test for the SATCOM system:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 Satellite Communications (SATCOM) System
 - 5) SYSTEM TEST
 - 6) Left SATCOM System
 - 7) CONTINUE
 - (b) Do the instructions that show on the MAT and then make these selections:
 - 1) CONTINUE
 - 2) START TEST
 - (c) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
 - (d) If FAILED shows, refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

SUBTASK 23-15-10-860-040

- (3) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch on the overhead panel, P5, to the OFF position.

————— **END OF TASK** —————

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SATELLITE DATA UNIT - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the satellite data unit (SDU).
 - (2) An installation of the satellite data unit.
- B. The names of the two software parts loaded into a new SDU are as follows:
- SDU Secure ORT
 - SDU User ORT
- C. There are two satellite data units. One for the left SATCOM system, and the other one for the right SATCOM system.
- D. The left SATCOM system is for the flight communications, and the right SATCOM System is for Passenger Cabin IFE services if applicable (i.e. Wireless internet or cell phone).
- E. The satellite data unit (left), M23106, is on the E11 electronics equipment rack. The E11 rack is above the left passenger compartment ceiling, at approximately station 1525.
- F. The satellite data unit (right), M23206, is on the E13 electronic equipment rack. The E13 rack is above the right passenger compartment ceiling, at approximately station 1028.
- G. The left power management panel, P110, is on the left side of the main equipment center.
- H. The right power management panel, P210, is on the right side of the main equipment center.

TASK 23-15-10-000-801

2. Satellite Data Unit Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
20-10-01-000-801	E/E Box Removal (P/B 401)
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

C. **Location Zones**

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
244	Area Above Passenger Compartment Ceiling, Right - Section 44

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(Continued)

Zone	Area
253	Area Above Passenger Compartment Ceiling, Left - Section 46

D. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

E. Removal Procedure

SUBTASK 23-15-10-010-001

- (1) Open this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

(TASK 06-41-00-800-801).

SUBTASK 23-15-10-860-044

- (2) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
E	17	C23427	SATL SDU L

Right Power Management Panel, P210

Row	Col	Number	Name
D	12	C23485	SATL SDU R

SUBTASK 23-15-10-010-002

- (3) Remove the inboard main ceiling panel for access to the applicable electronic equipment rack (E11 or E13). To remove it, do this task: Main Ceiling Panel - Removal, TASK 25-21-06-000-801.

SUBTASK 23-15-10-860-001



DO NOT GET ON TOP OF CEILING PANELS TO GET ACCESS TO THE ELECTRONIC EQUIPMENT. GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS CAN BE INSTALLED BELOW THE EQUIPMENT. TOO MUCH WEIGHT ON CEILING PANELS CAN CAUSE DAMAGE TO EQUIPMENT AND INJURIES TO PERSONS.

- (4) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the applicable electronics equipment rack.

SUBTASK 23-15-10-020-001



DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (5) Remove the SATELLITE DATA UNIT [1] from the SATCOM equipment rack (E/E Box Removal, TASK 20-10-01-000-801).
- (6) Put the ESDS protective cover on the SATELLITE DATA UNIT [1] connectors.

————— END OF TASK —————

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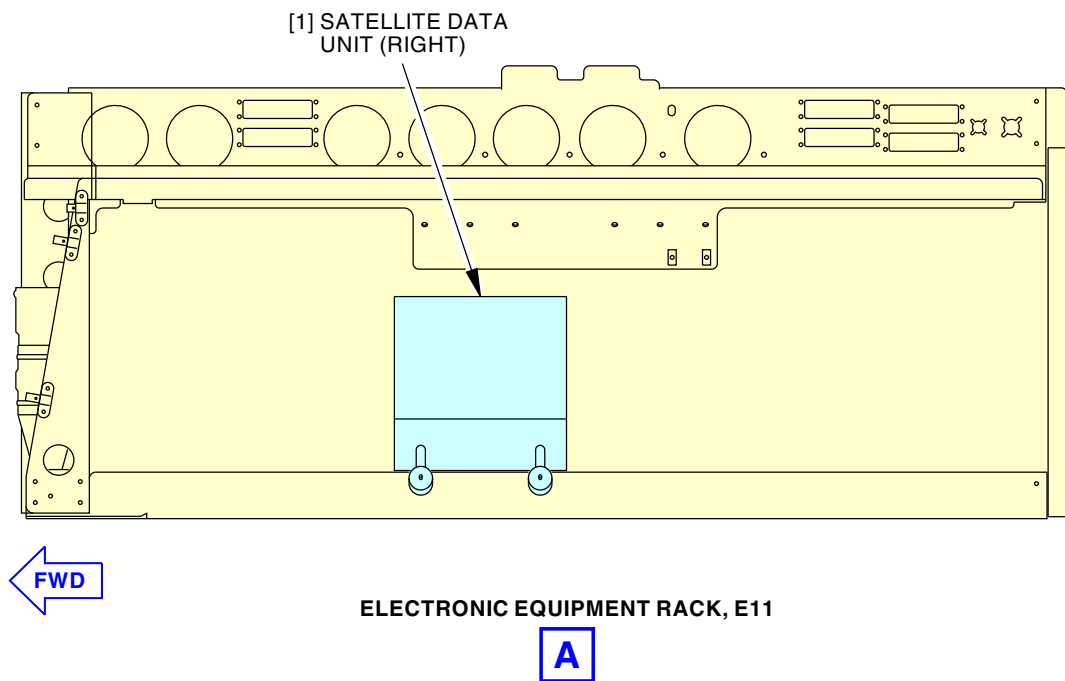
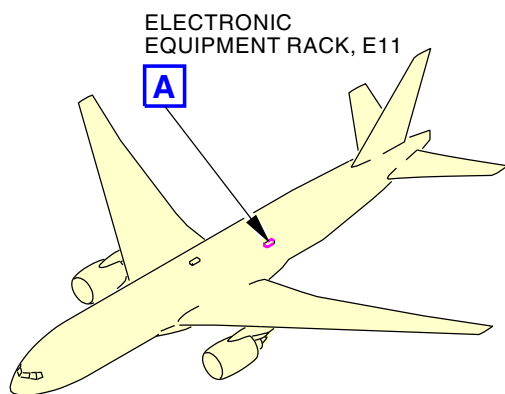
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Satellite Data Unit Installation
Figure 401/23-15-10-990-801 (Sheet 1 of 2)

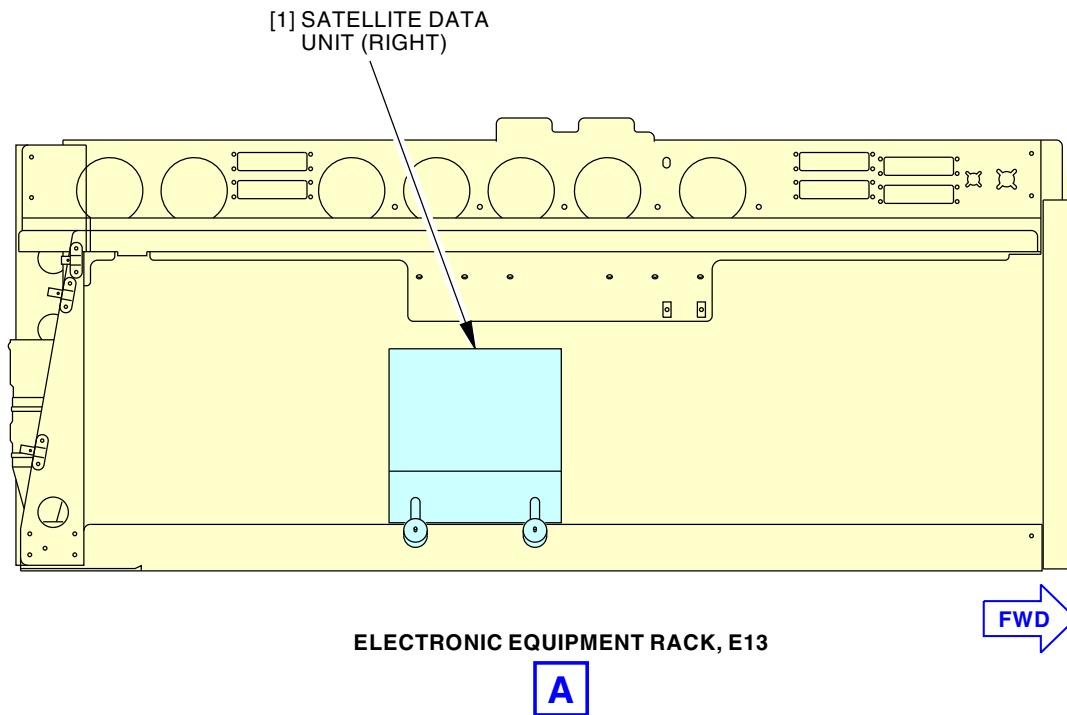
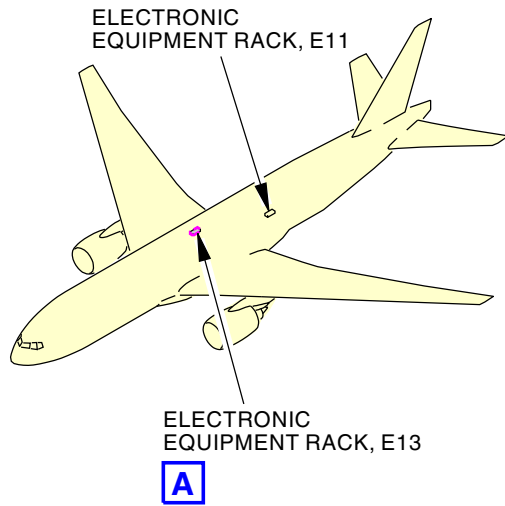
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Satellite Data Unit Installation
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TASK 23-15-10-400-801

3. Satellite Data Unit Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) The installation test makes sure the satellite data unit is correctly installed and has the correct owner requirements table (ORT) software.
- (2) For the right SATCOM system, the ORT software parts will be automatically install into the SDU from the SCM. Use the IFE system to verify the software configuration (if applicable).

B. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
20-10-01-400-801	E/E Box Installation (P/B 401)
23-15-00-710-802	Satellite Communications (SATCOM) System - System Test (P/B 501)
23-15-00-740-807	Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test (P/B 501)
23-15-10-400-802	Satellite Data Unit Software Installation (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	SATELLITE DATA UNIT	23-15-10-35A-025	ARO ALL
		23-15-10-35B-010	ARO ALL

E. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
212	Flight Compartment, Right
244	Area Above Passenger Compartment Ceiling, Right - Section 44
253	Area Above Passenger Compartment Ceiling, Left - Section 46

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F. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

G. Installation Procedure

SUBTASK 23-15-10-860-002

- (1) Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
E	17	C23427	SATL SDU L

Right Power Management Panel, P210

Row	Col	Number	Name
D	12	C23485	SATL SDU R

SUBTASK 23-15-10-860-007

- (2) Make sure that the inboard main ceiling panel is removed.

SUBTASK 23-15-10-860-003



DO NOT GET ON TOP OF CEILING PANELS TO GET ACCESS TO THE ELECTRONIC EQUIPMENT. GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS CAN BE INSTALLED BELOW THE EQUIPMENT. TOO MUCH WEIGHT ON CEILING PANELS CAN CAUSE DAMAGE TO EQUIPMENT AND INJURIES TO PERSONS.

- (3) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the electronic equipment rack (E11 or E13).

SUBTASK 23-15-10-420-001



DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (4) Remove the ESDS protective covers from the connectors of the new SDU.
(5) Examine the electrical connectors for broken or bent pins, dirt and damage.
(6) Install the SATELLITE DATA UNIT [1] to the SATCOM equipment rack (E/E Box Installation, TASK 20-10-01-400-801).

SUBTASK 23-15-10-410-001

- (7) Install the inboard main ceiling panel. To install it, do this task: Main Ceiling Panel - Installation, TASK 25-21-06-400-801.

SUBTASK 23-15-10-860-045

- (8) Remove the safety tags and close these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
E	17	C23427	SATL SDU L

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Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	12	C23485	SATL SDU R

SUBTASK 23-15-10-410-002

- (9) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

(TASK 06-41-00-800-801).

H. Installation Test

SUBTASK 23-15-10-860-004

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-15-10-860-051

- (2) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801.

SUBTASK 23-15-10-470-001

- (3) Do this task: Satellite Data Unit Software Installation, TASK 23-15-10-400-802 for the software installation to the left SDU.

NOTE: This step does not apply to the right SATCOM system because the right SATCOM system is not an onboard data loadable. The right SATCOM system has a SATCOM configuration module (SCM) that keeps the software and configuration data for the right SDU. The software parts will be preloaded into the SCM at the vendor or approved maintenance facility. If the SCM has the correct software, the software will be automatically installs into the right SDU from the SCM.

SUBTASK 23-15-10-730-005

- (4) Do this task: Satellite Communications (SATCOM) System - System Test, TASK 23-15-00-710-802 for the left SATCOM system.

SUBTASK 23-15-10-740-001

- (5) Do this task: Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test, TASK 23-15-00-740-807 for the right SATCOM system.

I. Put the Airplane Back in Its Usual Condition

SUBTASK 23-15-10-860-039

- (1) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch on the overhead panel, P5, to the OFF position.

————— **END OF TASK** —————

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HIGH POWER AMPLIFIER (HPA) FOR HIGH GAIN ANTENNA (HGA) - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
 - (1) A removal of the high power amplifier (HPA) for the high gain antenna (HGA).
 - (2) An installation of the high power amplifier for the HGA.
- B. The high power amplifier (left), M23108, is on the forward end of the E11 electronic equipment rack. The E11 rack is above the left passenger compartment ceiling, at approximately station 1525.
- C. Optional equipment (crown zone hoist adapter equipment, SPL-1621 and fishpole hoist, COM-1582) is available for the removal/installation of the high power amplifier.
- D. The high power amplifier weighs approximately 30 pounds.
- E. The left power management panel, P110, is on the left side of the main equipment center.

TASK 23-15-12-000-801

2. High Power Amplifier for High Gain Antenna Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
20-10-01-000-801	E/E Box Removal (P/B 401)
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1582	Hoist - Fishpole, Manually Powered Part #: PF51-009-1 Supplier: 1YRX6 Part #: PF51-103-5 Supplier: 1YRX6
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
SPL-1621	Adapter Equipment - Hoist, Crown Zone Part #: J23002-16 Supplier: 81205 Opt Part #: J23002-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

C. Location Zones

Zone	Area
117	Main Equipment Center, Left
253	Area Above Passenger Compartment Ceiling, Left - Section 46

D. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

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E. Removal Procedure

SUBTASK 23-15-12-010-002

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

(TASK 06-41-00-800-801).

SUBTASK 23-15-12-860-014

- (2) 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>
E	20	C23431	SAT HIGH L

SUBTASK 23-15-12-010-001

- (3) Remove the inboard main ceiling panel for access to electronic equipment rack, E11. To remove it, do this task: Main Ceiling Panel - Removal, TASK 25-21-06-000-801.

SUBTASK 23-15-12-860-001



DO NOT GET ON TOP OF CEILING PANELS TO GET ACCESS TO THE ELECTRONIC EQUIPMENT RACK. GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS CAN BE INSTALLED BELOW THE RACK. TOO MUCH WEIGHT ON CEILING PANELS CAN CAUSE DAMAGE TO EQUIPMENT AND POSSIBLE INJURY TO PERSONS.

- (4) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the electronic equipment rack.

SUBTASK 23-15-12-480-001

- (5) If you will use the crown zone hoist adapter equipment, SPL-1621 (optional) for the removal, do the steps that follow:

NOTE: The crown zone hoist adapter equipment, SPL-1621 includes the intercostal assembly [3], the amplifier fitting assembly [7], and a storage box assembly.

- (a) Loosen the insulation to get access to the frame brackets [2] at station 1497 and station 1513.
- (b) Install the intercostal assembly [3] in the frame brackets [2].
- (c) Install the amplifier fitting assembly [7] on the handle [6] of the High Power Amplifier [1].
- (d) Install the fishpole hoist, COM-1582 [8]:
 - 1) Install the fishpole installation assembly [9] in the slot [4] of the intercostal assembly [3].
 - 2) Attach the fishpole cable assembly [5] to the amplifier fitting assembly [7].

SUBTASK 23-15-12-020-001



BE CAREFUL WHEN YOU REMOVE THE HIGH POWER AMPLIFIER. IF THE HIGH POWER AMPLIFIER FALLS ON THE CEILING PANEL BELOW THE ELECTRONIC EQUIPMENT RACK, DAMAGE TO EQUIPMENT CAN OCCUR.

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(CAUTION PRECEDES)



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE HIGH POWER AMPLIFIER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE HIGH POWER AMPLIFIER.

- (6) To remove the High Power Amplifier [1], do this task: E/E Box Removal, TASK 20-10-01-000-801.
- (a) If you use the crown zone hoist adapter equipment, SPL-1621, do the steps that follow:
- 1) Manually move the High Power Amplifier [1] to the edge of the electronic equipment rack.
 - 2) Pull down on the fishpole hoist, COM-1582 [8] to keep the fishpole installation assembly [9] in the slot [4] while you do the next step.
 - 3) Move the High Power Amplifier [1] off the electronic equipment rack.
 - a) Manually hold the High Power Amplifier [1] until the fishpole cable holds it.
 - 4) Use the fishpole hoist, COM-1582 [8] to lower the High Power Amplifier [1].

SUBTASK 23-15-12-080-001

- (7) If you used the crown zone hoist adapter equipment, SPL-1621, do the steps that follow to remove the installation equipment:
- (a) Disconnect the fishpole cable assembly [5] from the amplifier fitting assembly [7].
 - (b) Remove the amplifier fitting assembly [7] from the handle [6].



CAUTION

REMOVE THE INTERCOSTAL ASSEMBLY [3] IF YOU WILL NOT IMMEDIATELY INSTALL THE HIGH POWER AMPLIFIER. WHEN THE AIRPLANE MOVES, THE INTERCOSTAL ASSEMBLY [3] CAN COME LOOSE AND CAUSE DAMAGE TO EQUIPMENT.

- (c) If you will not immediately do the installation for the High Power Amplifier [1], remove the fishpole hoist, COM-1582 [8] and the intercostal assembly [3].

———— **END OF TASK** ————

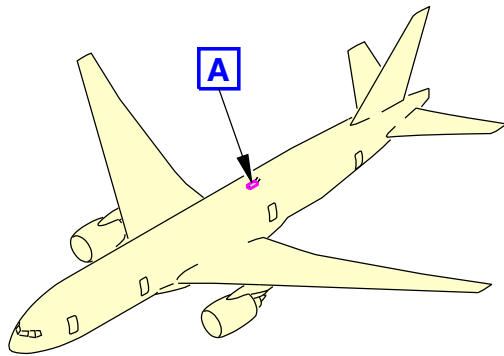
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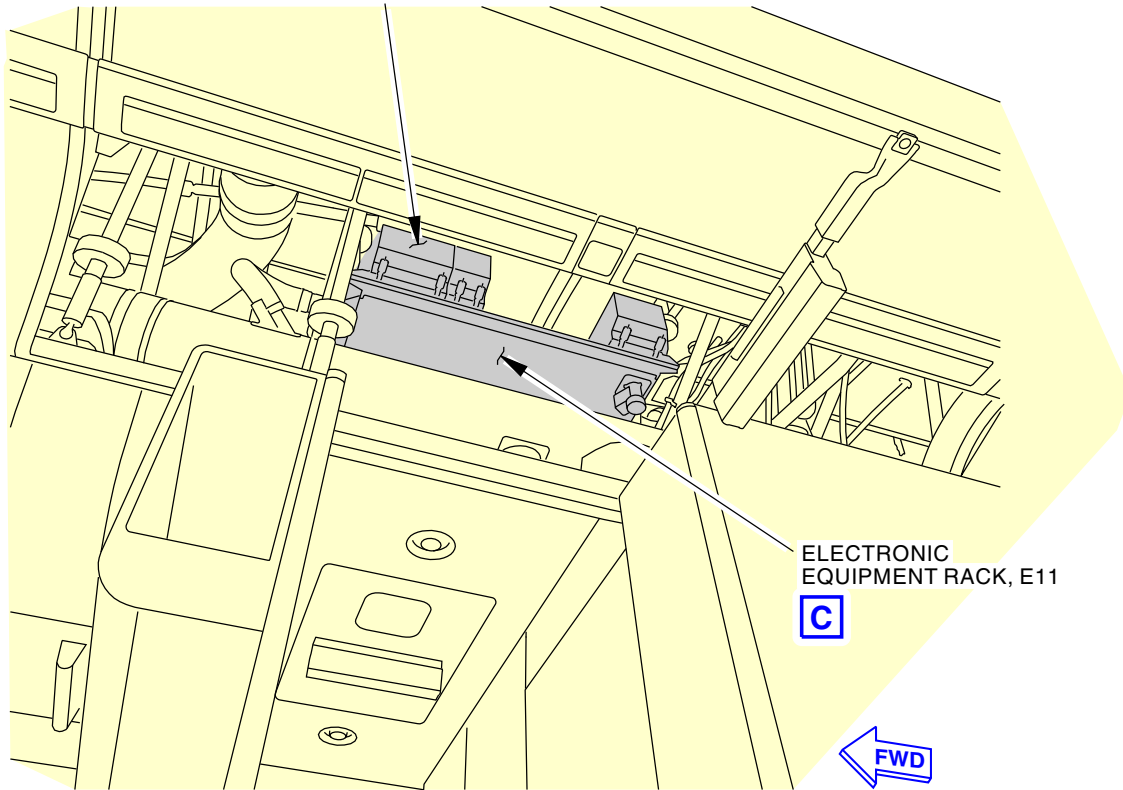
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[1] HIGH POWER
AMPLIFIER
(LEFT)



NOTE:

THE INBOARD MAIN CEILING
PANEL IS NOT SHOWN.

THE AREA SHOWN BELOW THE
ELECTRONIC EQUIPMENT RACK,
E11, CAN BE DIFFERENT.

A

C

FWD

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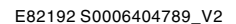
High Power Amplifier for High Gain Antenna Installation
Figure 401/23-15-12-990-801 (Sheet 1 of 2)

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High Power Amplifier for High Gain Antenna Installation
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TASK 23-15-12-400-801

3. High Power Amplifier for High Gain Antenna Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
20-10-01-400-801	E/E Box Installation (P/B 401)
23-15-00-740-804	Satellite Communications (SATCOM) System - Ground Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt.", which stands for Optional.

Reference	Description
COM-1582	Hoist - Fishpole, Manually Powered Part #: PF51-009-1 Supplier: 1YRX6 Part #: PF51-103-5 Supplier: 1YRX6
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
SPL-1621	Adapter Equipment - Hoist, Crown Zone Part #: J23002-16 Supplier: 81205 Opt Part #: J23002-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	High Power Amplifier	23-15-12-35B-025	ARO ALL

E. Location Zones

Zone	Area
117	Main Equipment Center, Left
212	Flight Compartment, Right
253	Area Above Passenger Compartment Ceiling, Left - Section 46

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F. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

G. Installation Procedure

SUBTASK 23-15-12-860-002

- (1) Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
E	20	C23431	SAT HIGH L

SUBTASK 23-15-12-860-007

- (2) Make sure that the inboard main ceiling panel is removed.

SUBTASK 23-15-12-860-003



DO NOT GET ON TOP OF CEILING PANELS TO GET ACCESS TO THE E11 ELECTRONIC EQUIPMENT RACK. GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS CAN BE INSTALLED BELOW THE E11 RACK. TOO MUCH WEIGHT ON CEILING PANELS CAN CAUSE DAMAGE TO EQUIPMENT AND POSSIBLE INJURY TO PERSONS.

- (3) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the E11 electronic equipment rack.

SUBTASK 23-15-12-480-002



BE CAREFUL WHEN YOU INSTALL THE HIGH POWER AMPLIFIER. IF THE HIGH POWER AMPLIFIER FALLS ON THE CEILING PANEL BELOW THE ELECTRONIC EQUIPMENT RACK, DAMAGE TO EQUIPMENT CAN OCCUR.



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE HIGH POWER AMPLIFIER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE HIGH POWER AMPLIFIER.

- (4) If you will use the crown zone hoist adapter equipment, SPL-1621 (optional) for the installation, do the steps that follow:
 - (a) Make sure the intercostal assembly [3] and the fishpole hoist, COM-1582 [8] are installed.
 - (b) Install the amplifier fitting assembly [7] on the handle [6] of the High Power Amplifier [1].
 - (c) Connect the fishpole cable assembly [5] to the amplifier fitting assembly [7].
 - (d) Use the fishpole hoist, COM-1582 [8] to carefully lift the High Power Amplifier [1] near the electronic equipment rack.
 - (e) Pull down on the fishpole hoist, COM-1582 [8] to keep the fishpole installation assembly [9] in the slot [4] while you do the next step.
 - (f) Carefully lift the High Power Amplifier [1] on the electronic equipment rack.

SUBTASK 23-15-12-420-001

- (5) To install the High Power Amplifier [1], do this task: E/E Box Installation, TASK 20-10-01-400-801.

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SUBTASK 23-15-12-080-002



CAUTION

MAKE SURE THAT YOU REMOVE THE INTERCOSTAL ASSEMBLY [3]. WHEN THE AIRPLANE MOVES, THE INTERCOSTAL ASSEMBLY [3] CAN COME LOOSE AND CAUSE DAMAGE TO EQUIPMENT.

- (6) If you used the crown zone hoist adapter equipment, SPL-1621, do the steps that follow:
- (a) Disconnect the fishpole cable assembly [5] from the amplifier fitting assembly [7].
 - (b) Remove the amplifier fitting assembly [7] from the handle [6].
 - (c) Remove the fishpole hoist, COM-1582 [8].
 - (d) Remove the intercostal assembly [3].
 - (e) Install the insulation over the frame brackets [2].

SUBTASK 23-15-12-410-001

- (7) Install the inboard main ceiling panel. To install it, do this task: Main Ceiling Panel - Installation, TASK 25-21-06-400-801.

SUBTASK 23-15-12-860-015

- (8) 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>
E	20	C23431	SAT HIGH L

SUBTASK 23-15-12-410-002

- (9) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

(TASK 06-41-00-800-801).

H. Installation Test

SUBTASK 23-15-12-860-004

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-15-12-860-012

- (2) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801.

SUBTASK 23-15-12-740-001

- (3) Do this task: Satellite Communications (SATCOM) System - Ground Test, TASK 23-15-00-740-804.
- (a) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
 - (b) If FAILED shows, make sure there is no maintenance message for the high power amplifier for the high gain antenna (HGA).
 - 1) If there is a maintenance message for the high power amplifier for the HGA refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

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I. Put the Airplane in Its Usual Condition

SUBTASK 23-15-12-860-013

- (1) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch on the overhead panel, P5, to the OFF position.

SUBTASK 23-15-12-090-001

- (2) Remove the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048.

SUBTASK 23-15-12-862-001

- (3) If the electrical power is not necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-806.

————— **END OF TASK** —————

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HIGH SPEED DATA UNIT - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) High Speed Data Unit removal.
 - (2) High Speed Data Unit installation.
- B. The High Speed Data Unit, M23995, is located on the E11 rack.
- The E11 rack is above the left passenger compartment ceiling, at approximately station 1525.
- C. The High Speed Data Module (HDM) is a small device that move into and out of the High Speed Data Unit (HSDU) through the front panel.
- D. The left power management panel, P110, is on the left side of the main equipment center.

TASK 23-15-13-000-801

2. High Speed Data Unit Removal

(Figure 401)

A. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
20-10-01-000-801	E/E Box Removal (P/B 401)
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

C. Location Zones

Zone	Area
117	Main Equipment Center, Left
253	Area Above Passenger Compartment Ceiling, Left - Section 46

D. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

E. Removal Procedure

SUBTASK 23-15-13-010-003

- (1) Open this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

(Finding an Access Door or Panel on the Fuselage, TASK 06-41-00-800-801)

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SUBTASK 23-15-13-865-001

- (2) 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>
E	17	C23427	SATL SDU L

SUBTASK 23-15-13-000-004

- (3) Remove the inboard main ceiling panel for access to the electronic equipment rack, E11 (Main Ceiling Panel - Removal, TASK 25-21-06-000-801).

SUBTASK 23-15-13-000-002



DO NOT GET ON TOP OF CEILING PANELS TO GET ACCESS TO THE ELECTRONIC EQUIPMENT. GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS CAN BE INSTALLED BELOW THE EQUIPMENT. TOO MUCH WEIGHT ON CEILING PANELS CAN CAUSE DAMAGE TO EQUIPMENT AND INJURIES TO PERSONS.

- (4) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the E11 electronics equipment rack.

SUBTASK 23-15-13-000-003

- (5) Remove the High Speed Data Unit [1] (E/E Box Removal, TASK 20-10-01-000-801).

SUBTASK 23-15-13-020-001

- (6) Do these steps to remove and keep the High Speed Data Module [2] (HDM) for installation of the new HSDU:

NOTE: A functional HDM contains the channel identification information required for SwiftBroadband operation, this identification information is assigned to a specific airplane; it must be stay with the airplane when you replace the HSDU.

- (a) Loosen the two fasteners [3] that attach the High Speed Data Module [2] to the High Speed Data Unit [1].
- (b) Carefully pull out the High Speed Data Module [2] from the High Speed Data Unit [1].
- (c) Keep the High Speed Data Module [2] for the new HSDU installation task.

————— **END OF TASK** —————

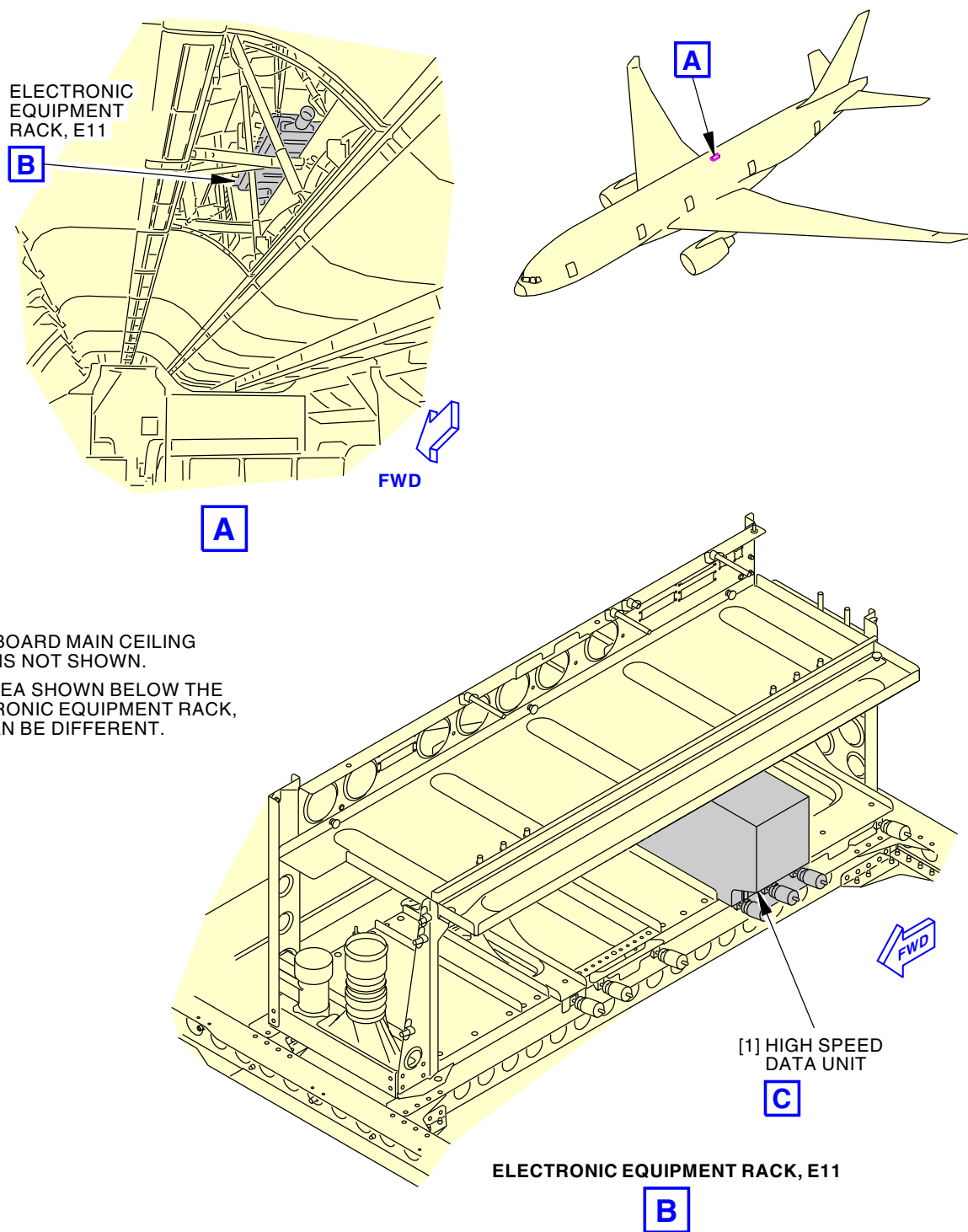
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NOTE:

THE INBOARD MAIN CEILING PANEL IS NOT SHOWN.

THE AREA SHOWN BELOW THE ELECTRONIC EQUIPMENT RACK, E11, CAN BE DIFFERENT.

High Speed Data Unit - Installation
Figure 401/23-15-13-990-801 (Sheet 1 of 2)

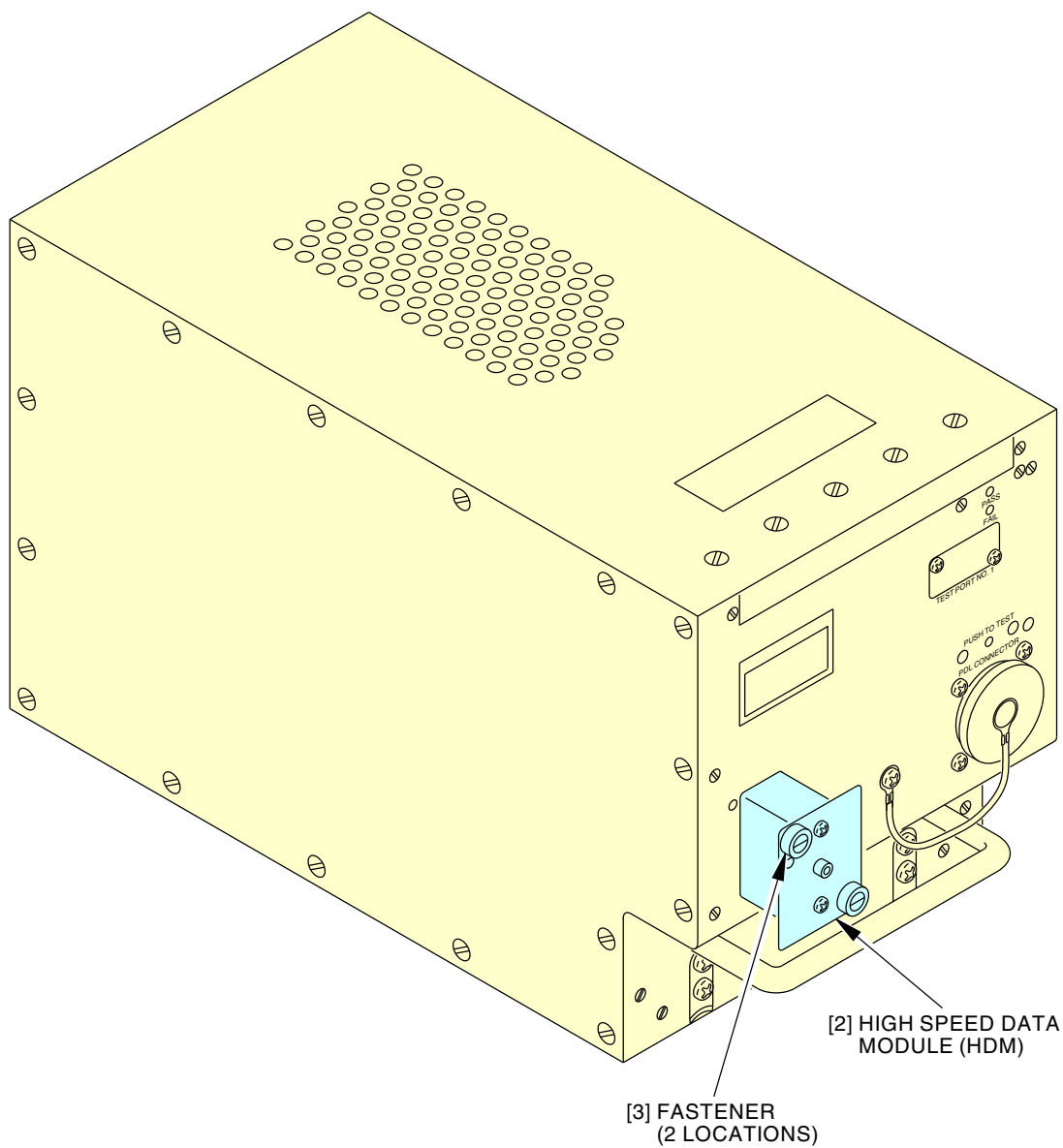
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HIGH SPEED DATA UNIT

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High Speed Data Unit - Installation
Figure 401/23-15-13-990-801 (Sheet 2 of 2)

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TASK 23-15-13-400-801

3. High Speed Data Unit Installation

(Figure 401)

A. References

Reference	Title
20-10-01-400-801	E/E Box Installation (P/B 401)
23-15-00-710-802	Satellite Communications (SATCOM) System - System Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	High Speed Data Unit	23-15-13-35B-010	ARO ALL

D. Location Zones

Zone	Area
117	Main Equipment Center, Left
253	Area Above Passenger Compartment Ceiling, Left - Section 46

E. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

F. Installation Procedure

SUBTASK 23-15-13-865-002

(1) Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
E	17	C23427	SATL SDU L

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SUBTASK 23-15-13-400-001



DO NOT GET ON TOP OF CEILING PANELS TO GET ACCESS TO THE ELECTRONIC EQUIPMENT. GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS CAN BE INSTALLED BELOW THE EQUIPMENT. TOO MUCH WEIGHT ON CEILING PANELS CAN CAUSE DAMAGE TO EQUIPMENT AND INJURIES TO PERSONS.

- (2) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the E11 electronics equipment rack.

SUBTASK 23-15-13-420-001

- (3) Do these steps to install the High Speed Data Module [2] (HDM) to the new High Speed Data Unit [1] (HSDU):
 - (a) If the new HSDU comes with a HDM, then remove the HDM from the new HSDU (High Speed Data Unit Removal, TASK 23-15-13-000-801).
 - (b) Install the High Speed Data Module [2] that you kept from the HSDU removal task into the new High Speed Data Unit [1].
 - (c) Tighten the two fasteners [3] to attach the HDM to the HSDU.

SUBTASK 23-15-13-400-002



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (4) Install the High Speed Data Unit [1] (E/E Box Installation, TASK 20-10-01-400-801).

SUBTASK 23-15-13-440-001

- (5) 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>
E	17	C23427	SATL SDU L

SUBTASK 23-15-13-410-001

- (6) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-15-13-410-002

- (7) Install the inboard main ceiling panel for access to the electronic equipment rack, E11 (Main Ceiling Panel - Installation, TASK 25-21-06-400-801).

ARO 001, 002

G. Installation Test

SUBTASK 23-15-13-860-001



MAKE SURE THAT PERSONNEL STAY A MINIMUM OF 10 FEET AWAY FROM THE TOP-MOUNTED HIGH-GAIN ANTENNA DURING THE TEST. RF ENERGY CAN CAUSE INJURIES TO PERSONNEL.

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805

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ARO 001, 002 (Continued)

- (2) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801

SUBTASK 23-15-13-730-001

- (3) Do this task: Satellite Communications (SATCOM) System - System Test,
TASK 23-15-00-710-802

SUBTASK 23-15-13-860-002

- (4) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch on the overhead panel, P5 to the OFF position.

———— **END OF TASK** ————

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SATELLITE DATA UNIT CONFIGURATION MODULE - REMOVAL / INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the Satellite Data Unit Configuration Module (SCM).
 - (2) An installation of the Satellite Data Unit Configuration Module.
- B. The SCM, M26226, is on the electronics equipment rack, E13. The E13 rack is above the right passenger compartment ceiling, at approximately station 1028.
- C. The SCM contains an External Configuration Module (ECM) and four Universal Mobile Telecommunications Service (UMTS) Subscriber Identity Modules (USIMs). The ECM stores the ORTs in the SCM. It is necessary to obtain a SCM with preloaded valid software parts from the vendor or an approved maintenance facility before you install it on the airplane.

TASK 23-15-14-000-801

2. SDU Configuration Module Removal

(Figure 401)

A. **References**

Reference	Title
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)

B. **Tools/Equipment**

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

C. **Location Zones**

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
244	Area Above Passenger Compartment Ceiling, Right - Section 44

D. **Access Panels**

Number	Name/Location
117AL	Main Equipment Center Access Door

E. **Removal Procedure**

SUBTASK 23-15-14-010-003

- (1) Open this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

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SUBTASK 23-15-14-865-001

- (2) 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>
D	12	C23485	SATL SDU R

SUBTASK 23-15-14-010-005



DO NOT GET ON TOP OF CEILING PANELS TO GET ACCESS TO THE ELECTRONIC EQUIPMENT. GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS CAN BE INSTALLED BELOW THE EQUIPMENT. TOO MUCH WEIGHT ON CEILING PANELS CAN CAUSE DAMAGE TO EQUIPMENT AND INJURIES TO PERSONS.

- (3) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the E13 electronics equipment rack.

SUBTASK 23-15-14-010-004

- (4) Do these steps to get access to the SDU Configuration Module (SCM) [1]:
- (a) Remove the inboard main ceiling panel for access to electronic equipment rack, E13. To remove it, do this task: Main Ceiling Panel - Removal, TASK 25-21-06-000-801.

SUBTASK 23-15-14-020-001



DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (5) Do these steps to remove the SDU Configuration Module (SCM) [1]:
- (a) Disconnect the Electrical Connector [3] as follow:
- 1) Loosen the two Screws [2] on the Electrical Connector [3]
 - 2) Disconnect the Electrical Connector [3] from the SDU Configuration Module (SCM) [1]
- (b) Remove the four mounting Bolts [5] and Washers [4].
- (c) Remove the SDU Configuration Module (SCM) [1] from the electronics equipment rack, E13.
- (d) Put the ESDS protective covers on the connectors.

SUBTASK 23-15-14-040-001

- (6) If applicable, contact your designated SATCOM Service Provider to deactivate the SwiftBroadband (SBB) service for the removed SCM.

————— **END OF TASK** —————

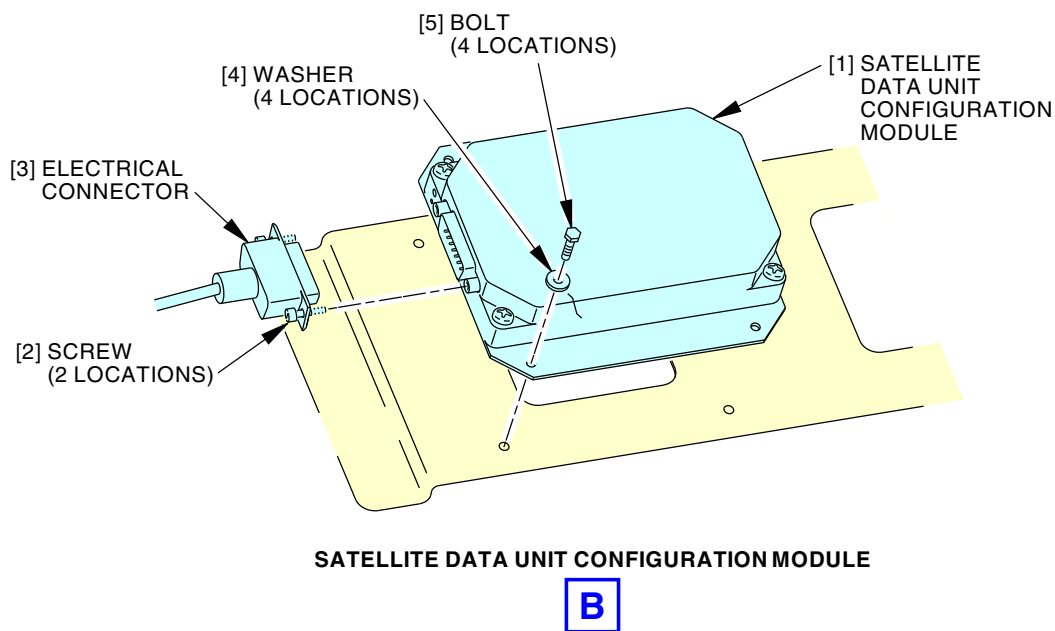
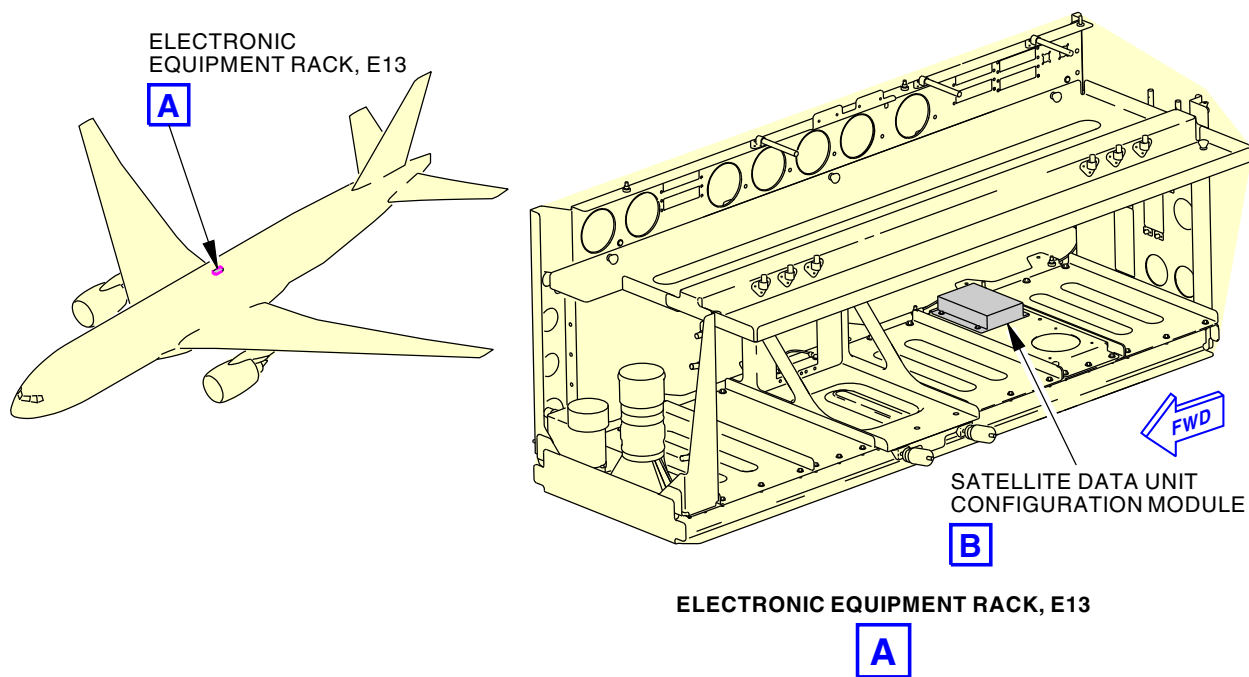
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Satellite Data Unit Configuration Module Installation
Figure 401/23-15-14-990-801

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TASK 23-15-14-400-801

3. SDU Configuration Module Installation

(Figure 401)

A. General

- (1) The SDU Configuration Module (SCM) keeps these pieces of Owner Requirements Table (ORT) software:
 - (a) Secure ORT.
 - (b) User ORT.
- (2) The right SATCOM system is not an onboard data loadable. Make sure that you get a new SCM with preloaded valid ORTs before install on the airplane.
- (3) It is the responsibility of the airline to contact their Satellite Communication (SATCOM) Service Provider to activate the SwiftBroadband (SBB) service for the new SCM before installation on the airplane.

B. References

Reference	Title
23-15-00-740-807	Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

D. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
244	Area Above Passenger Compartment Ceiling, Right - Section 44

E. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

F. Installation Procedure

SUBTASK 23-15-14-440-001

- (1) In order to use SwiftBroadband (SBB) services, it is the responsibility of the airline to contact their SATCOM Service Provider to activate the SBB service for the new SCM before installation on the airplane.

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SUBTASK 23-15-14-865-002

- (2) Make sure that this circuit breaker is open and has safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	12	C23485	SATL SDU R

SUBTASK 23-15-14-910-001



DO NOT GET ON TOP OF CEILING PANELS TO GET ACCESS TO THE ELECTRONIC EQUIPMENT. GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS CAN BE INSTALLED BELOW THE EQUIPMENT. TOO MUCH WEIGHT ON CEILING PANELS CAN CAUSE DAMAGE TO EQUIPMENT AND INJURIES TO PERSONS.

- (3) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the E13 electronics equipment rack.

SUBTASK 23-15-14-420-001



DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (4) Install the SDU Configuration Module (SCM) [1] as follows:
- Put the SDU Configuration Module (SCM) [1] in its position to the mounting bracket on the electronics equipment rack, E13.
 - Align the four SCM mounting holes to the mounting bracket.
 - Install the four mounting Bolts [5] and Washers [4] to attach the SDU Configuration Module (SCM) [1].
 - Remove the Electrostatic Discharge Sensitive (ESDS) protective covers from the electrical connectors.
 - Examine the electrical connectors for broken or bent pins, dirt and damage.
 - Connect the Electrical Connector [3] to the SDU Configuration Module (SCM) [1].
 - Tighten the two connector Screws [2].

SUBTASK 23-15-14-865-003

- (5) 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>
D	12	C23485	SATL SDU R

G. Installation Test

SUBTASK 23-15-14-861-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805

SUBTASK 23-15-14-740-001

- (2) Do this task: Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test, TASK 23-15-00-740-807.

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H. Put the Airplane Back to Its Usual Condition

SUBTASK 23-15-14-410-001

- (1) Install the applicable inboard main ceiling panel. To install, do this task: Main Ceiling Panel - Installation, TASK 25-21-06-400-801.

SUBTASK 23-15-14-410-002

- (2) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-15-14-862-001

- (3) Do this task: Remove Electrical Power, TASK 24-22-00-860-806. If not necessary.

———— **END OF TASK** ————

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TOP-MOUNTED HIGH GAIN ANTENNA - MAINTENANCE PRACTICES

1. General

- A. This procedure provides maintenance information for the high gain antenna:
- (1) Replacing the lightning diverter strips.
- B. There are no user maintainable or adjustments required internal to the antenna. There is no reason for the user to open the antenna. The warranty will be void if the warranty seal has been damaged or broken.
- C. This procedure is applicable only for the Chelton top-mounted high gain antenna.
- NOTE:** This procedure is not applicable to the CMC Electronics top-mounted high gain antenna (TMHGA). If you find damaged or missing lightning diverter strips on the CMC Electronics TMHGA, it is necessary to send the antenna to CMC Electronics Inc. for repair.

TASK 23-15-23-960-801

2. Lightning Diverter Strips Replacement

(Figure 201)

A. General

- (1) This procedure tells you how to remove and install the lightning diverter strips on the high gain antenna.

B. Removal Procedure

SUBTASK 23-15-23-860-012

- (1) Mark the location of the diverter by applying pieces of masking tapes.

SUBTASK 23-15-23-020-013

- (2) Remove the old diverter by inserting the scalpel under the corner of the diverter.
 - (a) Hold the edge down and cut at the interface.

NOTE: The diverters are quite brittle. Any effort to peel it will cause it to break off.

SUBTASK 23-15-23-860-013

- (3) Remove all adhesive and edge filler paint with the scalpel and clean with Iso-propyl alcohol.

C. Installation Procedure

SUBTASK 23-15-23-860-014

- (1) Sand the surface inside the masked area using 220 grit sand paper.

SUBTASK 23-15-23-860-015

- (2) Remove all dust using Iso-propyl alcohol and clean paper towel.

SUBTASK 23-15-23-860-016

- (3) Make sure that the edges of diverter are aligned properly with the bottom edge of the high gain antenna or the tail cap and the previously marked positions.

NOTE: The edge of the diverter should be as close as possible to the bottom edge of the high gain antenna or the tail cap so as to provide a minimum gap for the lightning path.

SUBTASK 23-15-23-860-017

- (4) Smooth it down with good finger pressure.

SUBTASK 23-15-23-020-014

- (5) Remove masking tape.

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SUBTASK 23-15-23-860-018

- (6) Repeat the procedures for all seven diverter locations.

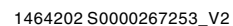
———— **END OF TASK** ————

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Replacing Lightning Diverter Strip

Figure 201/23-15-23-990-803

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TOP-MOUNTED HIGH GAIN ANTENNA (TMHGA) - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
 - (1) A removal of the top-mounted high gain antenna (TMHGA)
 - (2) An installation of the TMHGA.
 - (3) A removal of the TMHGA (Broadband)
 - (4) An installation of the TMHGA (Broadband).
- B. The TMHGA for the left SATCOM system (M23111) is installed on top of the fuselage at approximate station 1631.
- C. The TMHGA for the right SATCOM system (M23211) is installed on top of the fuselage at approximate station 1108.
- D. The left power management panel, P110, is on the left side of the main equipment center.
- E. The right power management panel, P210 is on the right side of the main equipment center.

TASK 23-15-23-000-801

2. Top-Mounted High Gain Antenna Removal

(Figure 401)

A. General

- (1) This task gives the steps to remove the left high gain antenna on top of the fuselage.

B. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-2584	Pliers - Electrical Connector

D. Location Zones

Zone	Area
117	Main Equipment Center, Left
253	Area Above Passenger Compartment Ceiling, Left - Section 46
254	Area Above Passenger Compartment Ceiling, Right - Section 46

E. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

F. Removal Procedure

SUBTASK 23-15-23-010-001

- (1) Open this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

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(TASK 06-41-00-800-801).

SUBTASK 23-15-23-860-001



MAKE SURE YOU REMOVE THE POWER FROM THE HIGH GAIN ANTENNA. RADIO FREQUENCY (RF) ENERGY CAN CAUSE INJURIES TO PERSONS.

- (2) 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>
E	20	C23431	SAT HIGH L

SUBTASK 23-15-23-020-006

- (3) Do these steps to disconnect the two electrical connectors [6] from the High Gain Antenna [1]:
- (a) Remove the four Fasteners [2] that hold the Tail Cap [18].
 - (b) Cut the sealant with a hard plastic stripper.
 - (c) Move the Tail Cap [18] to the aft direction to disengage the retainers.
 - (d) Remove the Tail Cap [18].
 - (e) Disconnect the electrical connectors [6].

NOTE: Use the electrical connector pliers, COM-2584 to loosen the electrical connectors. The plastic sleeves on the jaws to prevent damage to the electrical connectors.

- (f) Put the ESDS protective covers on the electrical connectors.

SUBTASK 23-15-23-020-007

- (4) Remove the eight Sealing Caps [14] and the O-Rings [15] from the mounting bolt locations.

SUBTASK 23-15-23-020-008

- (5) Remove the eight Foam Plugs [16] from the mounting bolt locations.

SUBTASK 23-15-23-020-009

- (6) Remove the eight Mounting Bolts [17] for the High Gain Antenna [1].

SUBTASK 23-15-23-020-010



DO NOT PUT OBJECTS INTO THE MOUNTING HOLES TO LIFT OR MOVE THE ANTENNA. DAMAGE TO THE RADOME MOUNTING TUBES CAN OCCUR.

- (7) Remove the High Gain Antenna [1] from the Adapter Plate [7].

NOTE: There are slots supplied between the High Gain Antenna [1] and the Adapter Plate [7]. You can use these slots to lift the antenna.

————— **END OF TASK** —————

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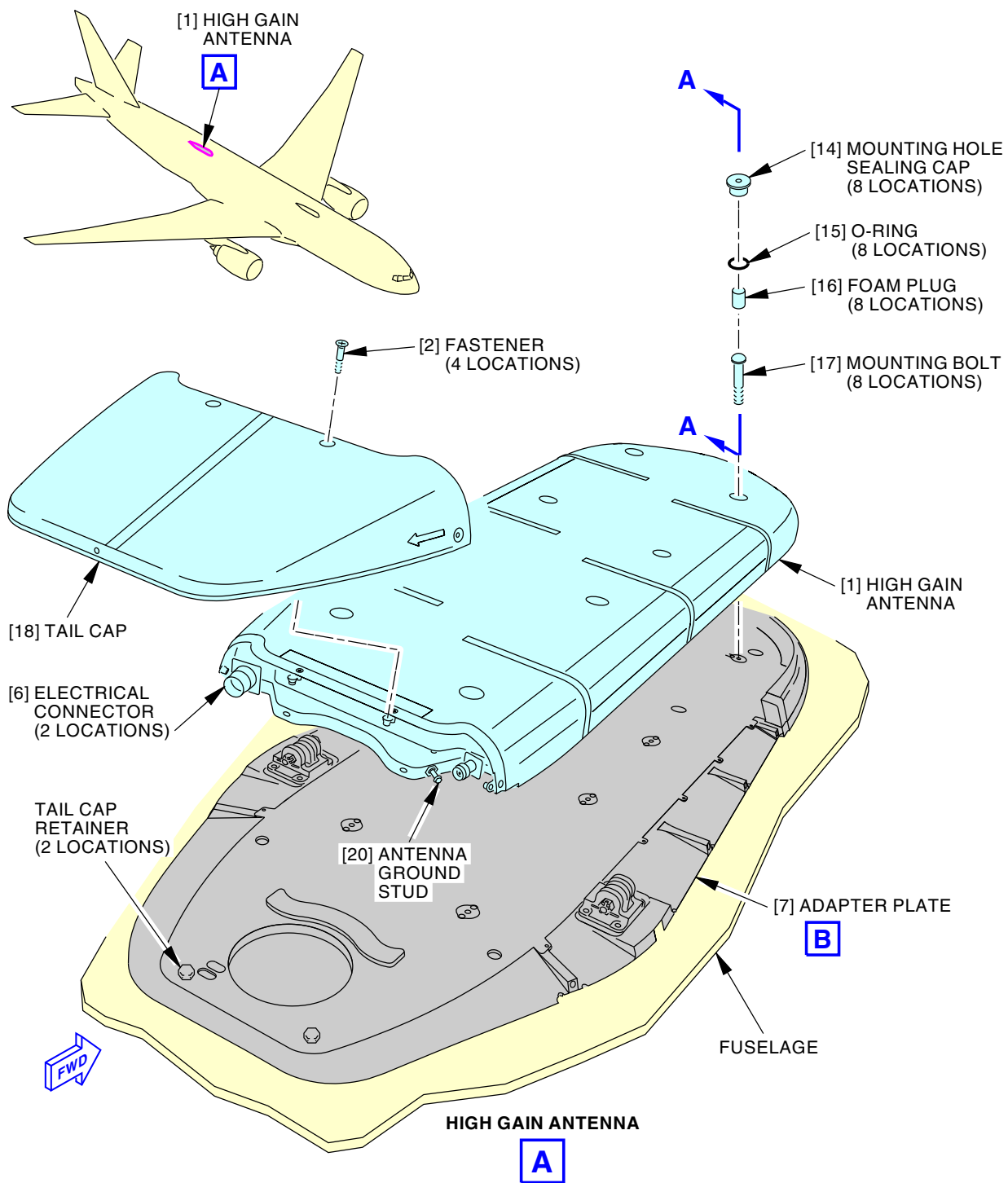
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Top-Mounted High Gain Antenna Installation
Figure 401/23-15-23-990-802 (Sheet 1 of 2)

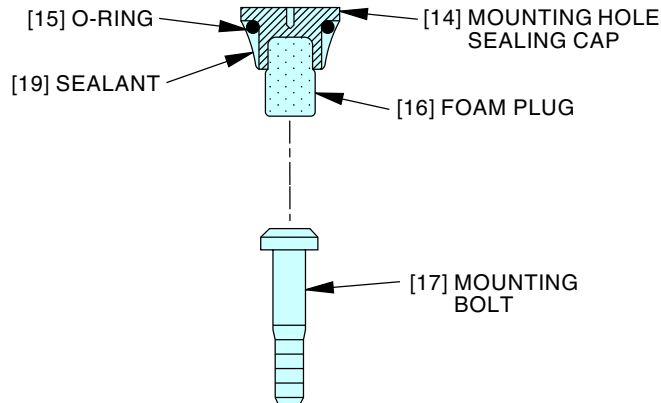
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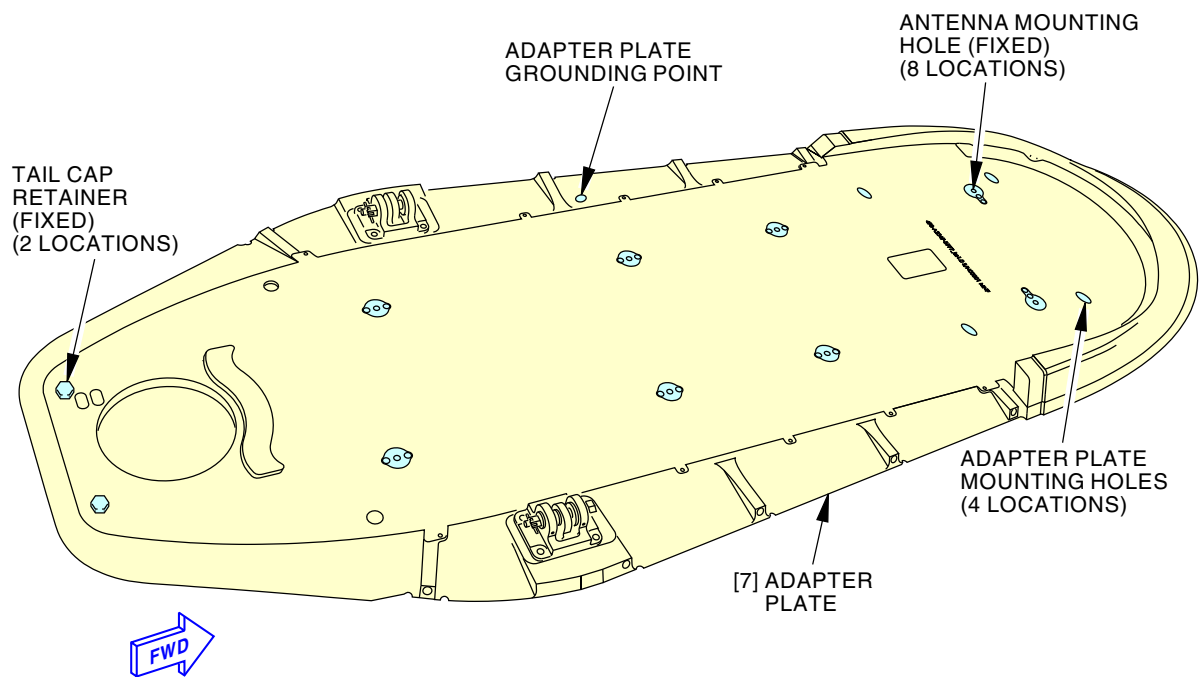
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A-A



ADAPTER PLATE

B

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**Top-Mounted High Gain Antenna Installation
Figure 401/23-15-23-990-802 (Sheet 2 of 2)**

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TASK 23-15-23-400-801

3. Top-Mounted High Gain Antenna Installation

(Figure 401)

A. General

- (1) This task gives the steps to install the left high gain antenna on top of the fuselage.
- (2) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.
- (3) Do not do the installation test in a hangar. The high gain antenna must have a clear view to the applicable satellite.

B. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
23-15-00-710-803	Satellite Communications (SATCOM) System - Operational Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)
SWPM 20-20-00	Standard Wiring Practices Manual

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
STD-999	Wrench - Strap, Small Size Connector
STD-13563	Torque wrench (0-50 in-lbs)

D. Consumable Materials

Reference	Description	Specification
A00363	Adhesive - Silicone - RTV 162	MIL-A-46146B

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	High Gain Antenna	23-15-23-01A-025	ARO ALL

F. Location Zones

Zone	Area
117	Main Equipment Center, Left

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(Continued)

Zone	Area
212	Flight Compartment, Right
253	Area Above Passenger Compartment Ceiling, Left - Section 46
254	Area Above Passenger Compartment Ceiling, Right - Section 46

G. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

H. Installation Procedure

SUBTASK 23-15-23-860-002



WARNING

MAKE SURE YOU REMOVE THE POWER FROM THE HIGH GAIN ANTENNA. RADIO FREQUENCY (RF) ENERGY CAN CAUSE INJURIES TO PERSONS.

- (1) Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
E	20	C23431	SAT HIGH L

SUBTASK 23-15-23-100-002

- (2) Make sure that the mounting surfaces on both the Adapter Plate [7] and the High Gain Antenna [1] are clean.
- (3) Make sure that the eight mounting surfaces around the fasteners on both the Adapter Plate [7] and the High Gain Antenna [1] are clean.

SUBTASK 23-15-23-020-011

- (4) Remove the Tail Cap [18] from the High Gain Antenna [1].

SUBTASK 23-15-23-420-007



CAUTION

DO NOT MOVE THE ANTENNA ALONG THE MOUNTING PLATE. DAMAGE TO THE BOTTOM O-RINGS AND PAINT SURFACES CAN OCCUR.

- (5) Do these steps to Install the High Gain Antenna [1] on the Adapter Plate [7]:
 - (a) Make sure that the eight base plate O-Rings attached to the bottom surface of High Gain Antenna [1].
 - (b) Examine the eight base plate O-Rings for damage. Replace them if necessary.
 - (c) Carefully put the High Gain Antenna [1] on the Adapter Plate [7].
 - (d) Align the High Gain Antenna [1] with the mounting holes.



CAUTION

DO NOT USE THE BOLT THAT IS LONGER THAN THE CORRECT LENGTH. IF THE MOUNTING BOLT IS TOO LONG, DAMAGE TO THE PRESSURE SEAL CAN OCCUR.

- (6) Do these steps to install the eight Mounting Bolts [17]:
 - (a) Loosely Install the Mounting Bolts [17] into the antenna mounting holes.

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- (b) Tighten the Mounting Bolts [17] to 2.6 - 3.7 ft-lbs torque.

NOTE: The tightening sequence should be from the center outwards.

SUBTASK 23-15-23-765-001

- (7) Use a intrinsically safe approved bonding meter, COM-1550 to measure the resistance between the High Gain Antenna [1] and the airplane structure (SWPM 20-20-00).

NOTE: Measurement can be taken between antenna and airplane structure prior to installation of tail cap.

- (a) Make sure that the resistance is 0.0025 ohms or less.

NOTE: If the resistance is not in tolerance, repair the bonding surfaces (SWPM 20-20-00).

SUBTASK 23-15-23-420-009

- (8) Do these steps to install the two electrical connectors [6] to the High Gain Antenna [1]:

- (a) Remove the ESDS protective covers from the electrical connectors [6].
- (b) Examine the electrical connectors [6] for bent or broken pins, dirt, and damage.
- (c) Install the electrical connectors [6].

NOTE: Torque connectors using a small size connector strap wrench, STD-999 with a Boeing-approved 1/4 or 3/8 inch drive torque wrench (torque wrench, STD-13563) to the value specified. If required, use a 3/8 inch to 1/4 or a 1/4 to 3/8 inch adapter and appropriate extensions.

- 1) For the RF interface (TNC) connector, torque the connector to 8 ± 2 in-lb (1 ± 0 N·m).
- 2) For the control and data interface connector, torque the connector to $30 + 5 / - 0$ in-lb ($3 + 1 / - 0$ N·m).

SUBTASK 23-15-23-480-006

- (9) Do these steps to install the Tail Cap [18]:

- (a) Make sure that both mating surfaces of the antenna radome and Tail Cap [18] are clean.
- (b) Install the Tail Cap [18] by sliding it forward until it engages the tail cap retainers.
- (c) Install the four Fasteners [2].
 - 1) Torque the Fasteners [2] to 19.2 in-lb (2.2 N·m).
- (d) Apply a smooth layer of RTV 162 adhesive, A00363 to the gap between the antenna and the tail cap.

NOTE: Smoothing down the sealant bead will contaminate the surrounding painted surfaces which may be cosmetically unpleasing. Masking both surfaces prior to sealant application to prevent this, is optional.

SUBTASK 23-15-23-480-007

- (10) Do these steps to install the Sealing Cap [14]:

- (a) Remove any traces of sealant before installing.
- (b) Examine the eight O-Rings [15] and the eight Sealing Caps [14] for damages.
 - 1) Replace them if necessary.
- (c) Put the O-Rings [15] on the Sealing Caps [14].
- (d) Put the eight Foam Plugs [16] into the Sealing Caps [14].

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- (e) Apply a smooth layer of RTV 162 adhesive, A00363 Sealant [19] to the threads of the Sealing Cap [14].

NOTE: Avoid applying sealant to the O Rings and the Foam Plugs.

- (f) Install the Sealing Caps [14] on the mounting holes.
- 1) Tighten the sealing caps to flush by hand torque.

SUBTASK 23-15-23-860-003

- (11) 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>
E	20	C23431	SAT HIGH L

SUBTASK 23-15-23-410-001

- (12) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

(TASK 06-41-00-800-801).

I. Installation Test

SUBTASK 23-15-23-860-004

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-15-23-860-005

- (2) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801.

SUBTASK 23-15-23-710-004

- (3) Do this task: Satellite Communications (SATCOM) System - Operational Test, TASK 23-15-00-710-803.

J. Put the Airplane Back in Its Usual Condition

SUBTASK 23-15-23-860-007

- (1) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch on the overhead panel, P5, to the OFF position.

————— END OF TASK —————

TASK 23-15-23-000-802

4. Top-Mounted High Gain Antenna (Broadband) Removal

(Figure 402)

A. General

- (1) This task gives the steps to remove the right high gain antenna on top of the fuselage.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

<u>Reference</u>	<u>Description</u>
SPL-1620	Adapter - Hoist, SATCOM Top-Mounted High Gain Antenna Part #: J23001-26 Supplier: 81205

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C. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
243	Area Above Passenger Compartment Ceiling, Left - Section 44

D. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

E. Prepare for the Removal

SUBTASK 23-15-23-010-002

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-15-23-040-001

- (2) 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>
D	13	C23486	SATL HIGH R

F. Removal Procedure

SUBTASK 23-15-23-020-015

- (1) Do these steps to remove the High Gain Antenna [1] from the adapter plate:
- (a) Remove the fasteners [2] that attach the rear fairing [3].
 - (b) Remove the rear fairing [3].
 - (c) Remove the screws [4] that attach the rear cover [5].
 - (d) Remove the rear cover [5].
 - (e) Disconnect the electrical connectors [6] from the High Gain Antenna [1].
 - (f) Install the rear cover [5].
 - (g) Install the rear fairing [3].
 - (h) Remove the forward setscrews [10] and the aft setscrews [12].
 - (i) Attach the SATCOM top mounted high gain antenna hoist adapters, SPL-1620 to the High Gain Antenna [1].



WARNING

GET SUFFICIENT AID FROM OTHER PERSONNEL AND EQUIPMENT TO HOLD THE COMPONENT DURING THE REMOVAL, AND INSTALLATION. THE COMPONENT IS HEAVY. THIS WILL PREVENT INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (j) Use a crane and hook to hold the High Gain Antenna [1] during the removal.
NOTE: The antenna weighs 70 lb (32 kg).
- (k) Carefully lift the High Gain Antenna [1] from the adapter plate.
- (l) Remove and discard the black screws [9] and the red screws [11].
- (m) Remove and keep the gasket [13].

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- (n) Remove the SATCOM top mounted high gain antenna hoist adapters, SPL-1620 from the High Gain Antenna [1].

————— **END OF TASK** —————

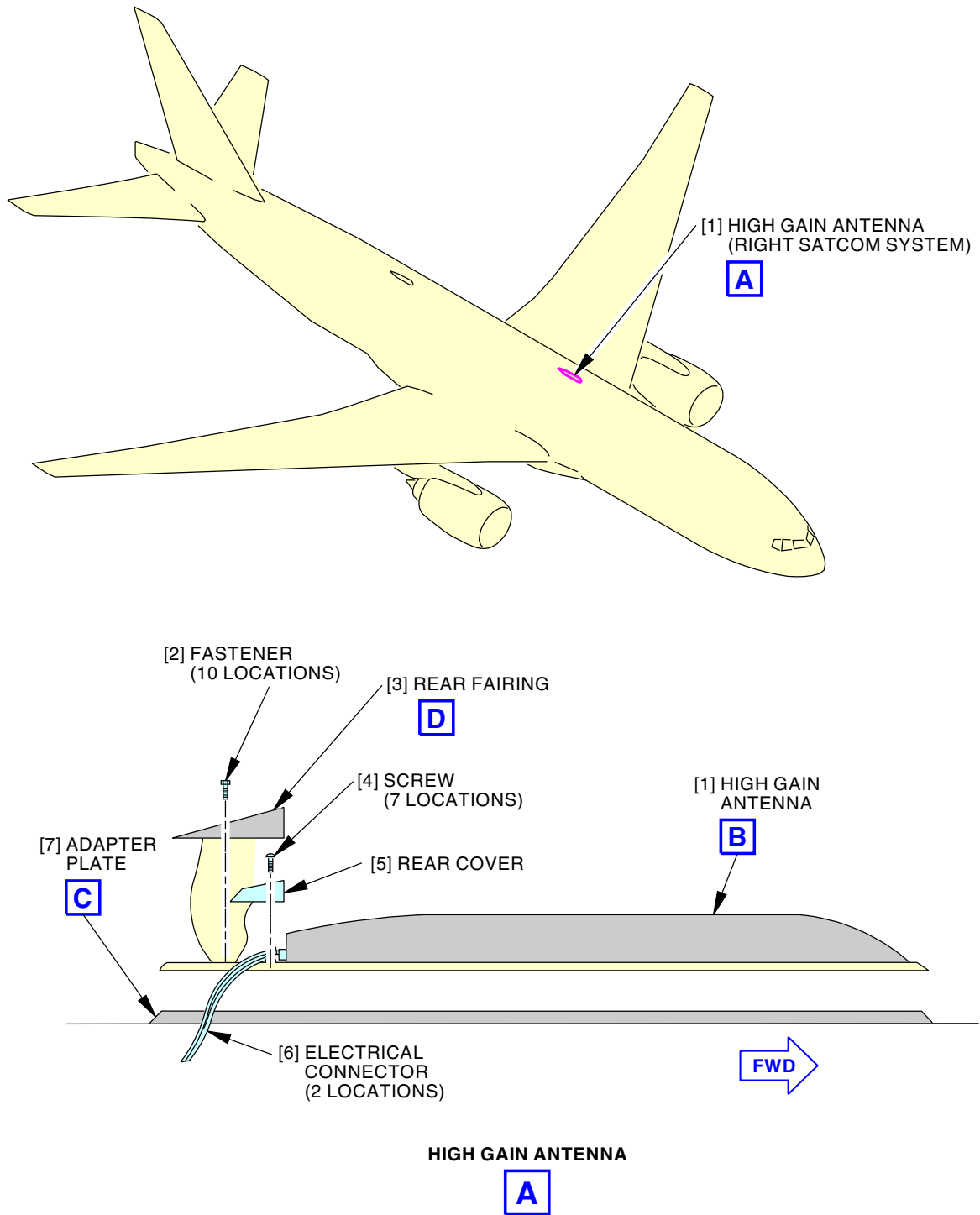
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BOEING
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2172639 S0000478541_V2

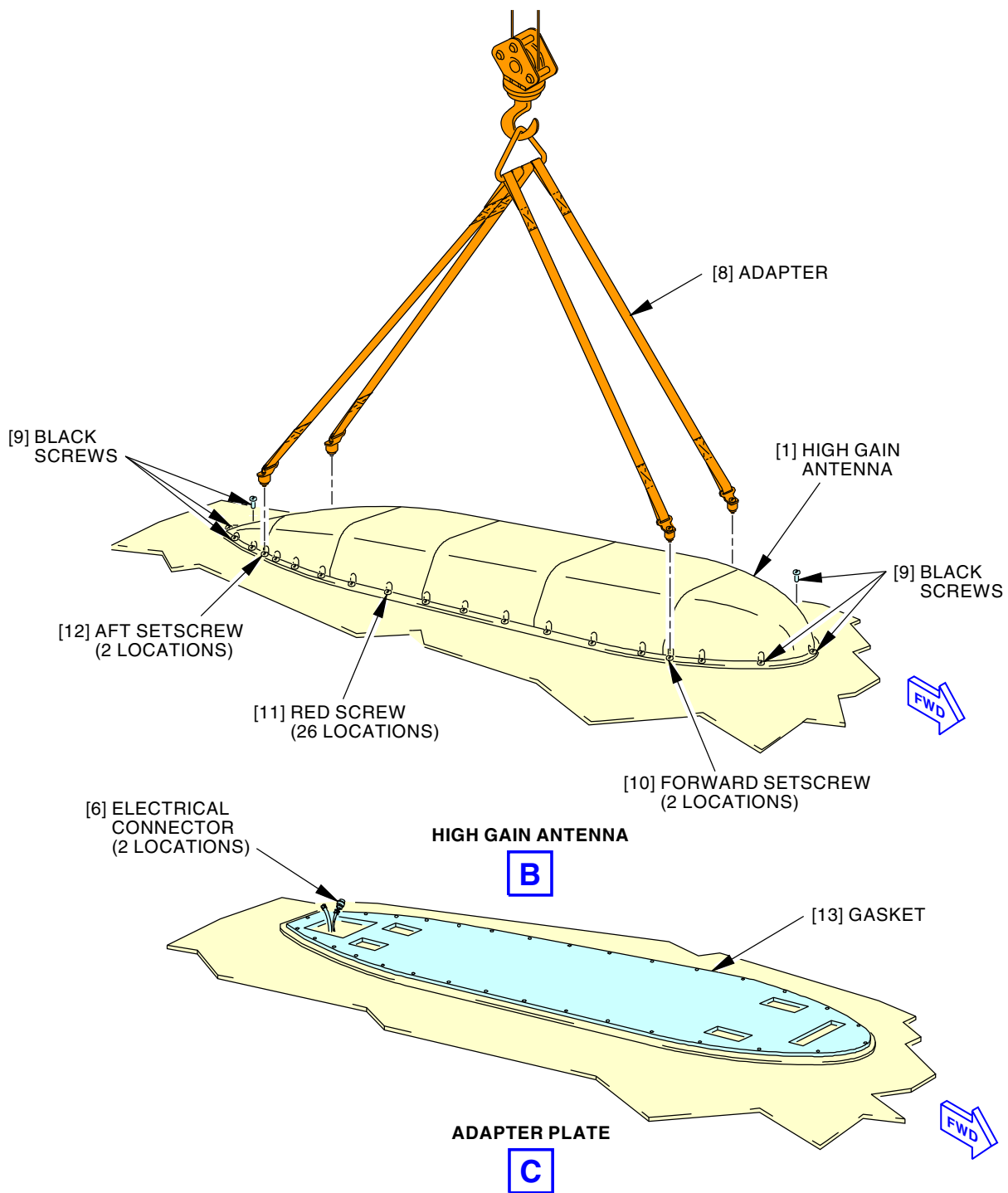
Top-Mounted High Gain Antenna Installation
Figure 402/23-15-23-990-804 (Sheet 1 of 4)

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G25374 S0006404833_V3

Top-Mounted High Gain Antenna Installation
Figure 402/23-15-23-990-804 (Sheet 2 of 4)

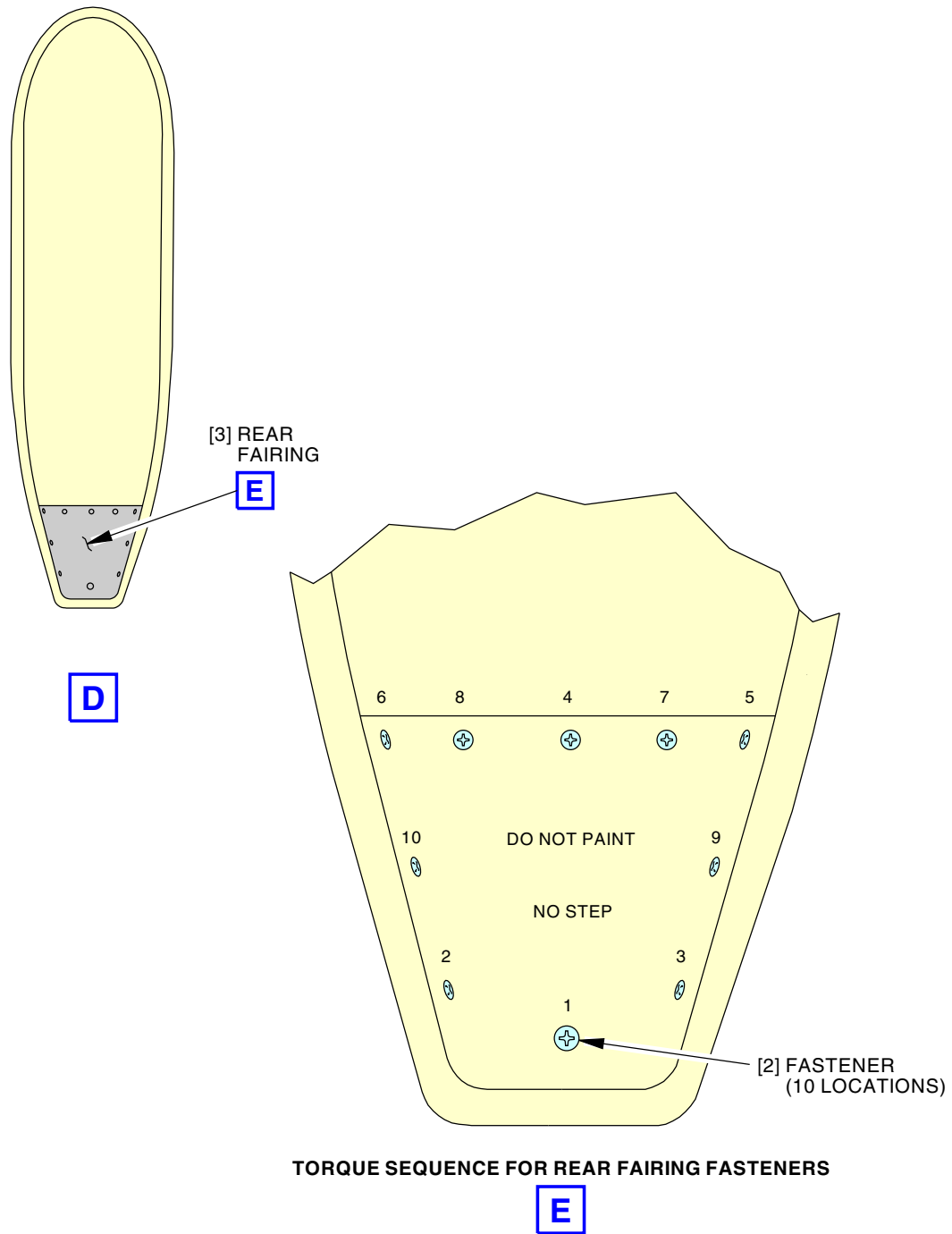
EFFECTIVITY
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G25421 S0006404834_V2

Top-Mounted High Gain Antenna Installation
Figure 402/23-15-23-990-804 (Sheet 3 of 4)

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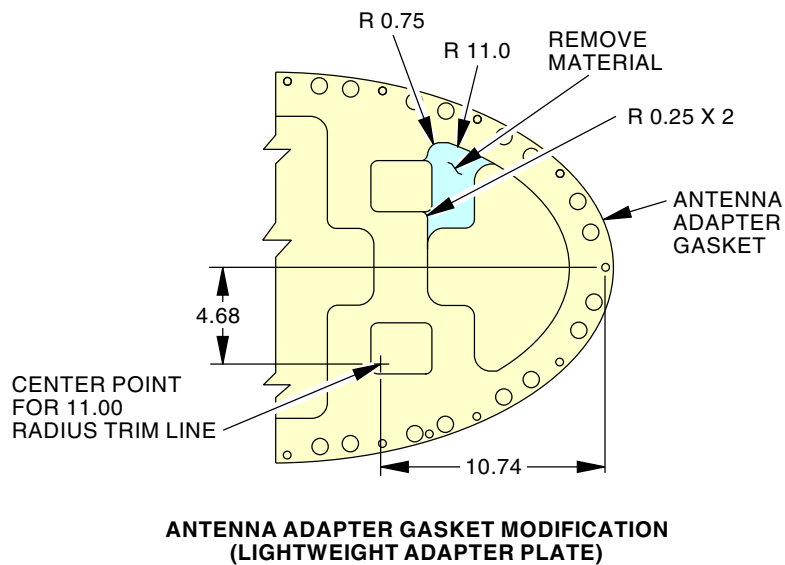
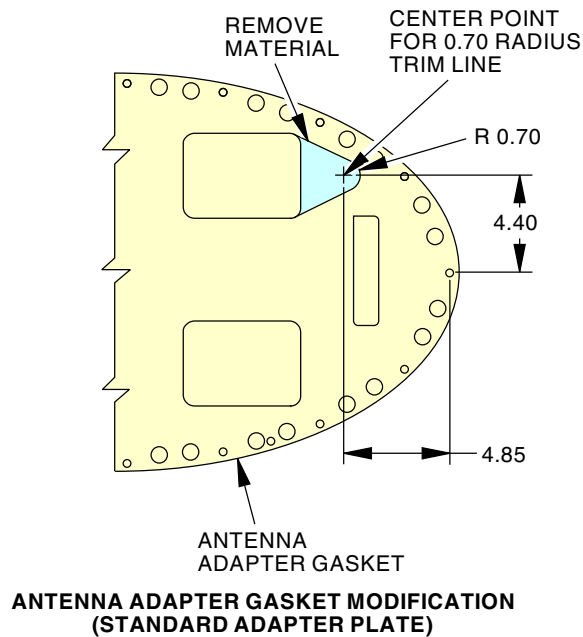
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REMOVE MATERIAL

NOTE:

MEASUREMENTS ARE
SPECIFIED IN INCHES.

2276454 S0000513405_V2

Top-Mounted High Gain Antenna Installation
Figure 402/23-15-23-990-804 (Sheet 4 of 4)

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ARO 002-999; ARO 001 POST SB 777-53A0070

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TASK 23-15-23-400-802

5. Top-Mounted High Gain Antenna (Broadband) Installation

(Figure 402)

A. General

- (1) This task gives the steps to install the right high gain antenna on the top of the fuselage.
- (2) Do not do the installation test in a hangar. The high gain antenna must have a clear view to the applicable satellite.

B. References

Reference	Title
23-15-00-740-807	Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test (P/B 501)
SWPM 20-20-00	Standard Wiring Practices Manual

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
SPL-1620	Adapter - Hoist, SATCOM Top-Mounted High Gain Antenna Part #: J23001-26 Supplier: 81205

D. Consumable Materials

Reference	Description	Specification
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
C00913	Compound - Corrosion Inhibiting Material, Nondrying Resin Mix	BMS3-27
G00237	Cotton - Balls	
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	High Gain Antenna	23-15-23-01A-025	ARO ALL
13	Gasket	23-15-23-01-125	ARO ALL

F. Location Zones

Zone	Area
118	Main Equipment Center, Right
212	Flight Compartment, Right
243	Area Above Passenger Compartment Ceiling, Left - Section 44

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G. Access Panels

Number	Name/Location

117AL	Main Equipment Center Access Door

H. Prepare for the Installation

SUBTASK 23-15-23-860-019

- (1) Make sure that this circuit breaker is open and has safety tag:

Right Power Management Panel, P210

Row	Col	Number	Name
D	13	C23486	SATL HIGH R

I. Installation Procedure

SUBTASK 23-15-23-420-010

- (1) Do these steps to install the High Gain Antenna [1] on the adapter plate:

- (a) Make sure the adapter plate [7] is clean.
- (b) Install the antenna adapter gasket [13]:

ARO 002-999; ARO 001 POST SB 777-53A0070

- 1) Do these steps to make a change to the antenna adapter gasket:

NOTE: If the gasket [13] already has a hole in it, then this step is not necessary.

- a) Use Figure 401 - Antenna Adapter Gasket Modification to find the dimension of the material to be removed.
- b) Cut a hole in the gasket [13] to the dimension shown in Figure 401 - Antenna Adapter Gasket Modification.

ARO ALL

- 2) Examine the gasket [13] for dirt and damage.
- 3) Install the gasket [13].
- (c) Remove the forward setscrews [10] and the aft setscrews [12].
- (d) Attach the SATCOM top mounted high gain antenna hoist adapters, SPL-1620 to the High Gain Antenna [1].



WARNING

GET SUFFICIENT AID FROM OTHER PERSONNEL AND EQUIPMENT TO HOLD THE COMPONENT DURING THE REMOVAL, AND INSTALLATION. THE COMPONENT IS HEAVY. THIS WILL PREVENT INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (e) Use a crane and hook to carefully move the High Gain Antenna [1] near the adapter plate [7].

NOTE: The antenna weighs 70 lb (32 kg).

- (f) Put the High Gain Antenna [1] on the adapter plate [7].
 - 1) Make sure the High Gain Antenna [1] does not cause damage to the electrical connectors [6] when you lower the High Gain Antenna [1].

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USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.



DO NOT GET THIS MATERIAL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THIS MATERIAL. PUT ON A RESPIRATOR, EYE PROTECTION (GOGGLES, OR OTHER APPROVED PROTECTION), AND GLOVES BEFORE YOU USE THIS MATERIAL. MAKE SURE THAT THERE IS SUFFICIENT AIRFLOW. KEEP THIS MATERIAL AWAY FROM SPARKS, FLAME, AND HEAT. THIS MATERIAL CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.



MAKE SURE THAT YOU INSTALL THE BLACK SCREWS AND THE RED SCREWS IN THE CORRECT LOCATIONS. A SCREW IN AN INCORRECT LOCATION CAN CAUSE DAMAGE TO THE AIRPLANE SKIN.

- (g) Do these steps to install the screws:

NOTE: The screwholes have black or red marks. The screws [9] and screws [11] have black or red marks, unless they are from an alternate supplier.

- 1) Apply a thin layer of Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 on the threads and shanks of the black screws [9] and the red screws [11].
- 2) Apply a thin layer of Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 in the nutplates.
- 3) Loosely install 25 of the 26 red screws [11] in the screwholes that have a red mark.
- 4) Loosely install the black screws [9] in the screwholes that have a black mark.
- 5) Tighten the black screws [9] and the red screws [11] to 25 ±2 in-lb (3 ±0 N·m) above nutplate self-locking torque.

- (h) Do these steps to install the electrical connectors [6]:

- 1) Remove the fasteners [2] that attach the rear fairing [3].
- 2) Remove the rear fairing [3].
- 3) Remove the screws [4] that attach the rear cover [5].
- 4) Remove the rear cover [5].
- 5) Examine the electrical connectors [6] for bent or broken pins, dirt, and damage.
- 6) Install the electrical connectors [6].
- 7) Install the rear cover [5].
- 8) Install the screws [4].
- 9) Install the rear fairing [3].
- 10) Loosely install the fasteners [2].

NOTE: The first fastener in the torque sequence (Figure 401) is longer than the other nine fasteners.



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- 11) Tighten each of the fasteners [2] in sequence (Figure 401) to 12 ± 1 in-lb (1 ± 0 N·m) above self-locking torque.
- (i) Use a intrinsically safe approved bonding meter, COM-1550 to measure the resistance between the High Gain Antenna [1] and the airplane structure (SWPM 20-20-00).
NOTE: One red screw [11] is not installed. You can use that screw location for easy access to the antenna baseplate.
 - 1) Make sure that the resistance is 0.050 ohms or less.
- (j) Install the last red screw [11].
 - 1) Tighten the red screw [11] to 25 ± 2 in-lb (3 ± 0 N·m) above nutplate self-locking torque.
- (k) Remove the SATCOM top mounted high gain antenna hoist adapters, SPL-1620 from the High Gain Antenna [1].
- (l) Install the forward setscrews [10] and the aft setscrews [12].
- (m) Do these steps to apply the sealant:
 - 1) Fill the screwholes with cotton balls, G00237.
 - 2) Apply a smooth layer of sealant, A02315 over the screwholes.

SUBTASK 23-15-23-440-001

- (2) 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>
D	13	C23486	SATL HIGH R

J. Installation Test

SUBTASK 23-15-23-710-005

- (1) Do this task: Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test, TASK 23-15-00-740-807.

K. Put the Airplane Back in Its Usual Condition

SUBTASK 23-15-23-410-002

- (1) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

————— **END OF TASK** —————

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BEAM STEERING UNIT (BSU) FOR TOP-MOUNTED HIGH GAIN ANTENNA (TMHGA) - REMOVAL/ INSTALLATION

1. General

- A. This procedure has these tasks:
 - (1) A removal of the beam steering unit (BSU) for the top-mounted high gain antenna (TMHGA).
 - (2) An installation of the beam steering unit for the TMHGA.
- B. There are two beam steering units. One is for the left satellite communication (SATCOM) system, and the other is for the right SATCOM system.
- C. The beam steering unit (left), M23109, is on electronic equipment rack E11. The E11 rack is above the left passenger compartment ceiling, at approximately station 1525.
- D. The beam steering unit (right), M23209, is on electronic equipment rack E13. The E13 rack is above the right passenger compartment ceiling, at approximately station 1077.
- E. The left power management panel, P110, is on the left side of the main equipment center.
- F. The right power management panel, P210, is on the right side of the main equipment center.

TASK 23-15-24-000-801

2. Beam Steering Unit for Top-Mounted High Gain Antenna Removal

(Figure 401)

A. General

- (1) This task includes the steps to remove the beam steering unit (M23109) for the left SATCOM system.

B. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
20-10-01-000-801	E/E Box Removal (P/B 401)
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

D. Location Zones

Zone	Area
117	Main Equipment Center, Left
253	Area Above Passenger Compartment Ceiling, Left - Section 46

E. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

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F. Removal Procedure

SUBTASK 23-15-24-010-001

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

(TASK 06-41-00-800-801).

SUBTASK 23-15-24-860-001

- (2) 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>
E	20	C23431	SAT HIGH L

SUBTASK 23-15-24-010-002

- (3) Remove the inboard main ceiling panel for access to electronic equipment rack, E11. To remove it, do this task: Main Ceiling Panel - Removal, TASK 25-21-06-000-801.

SUBTASK 23-15-24-860-002



DO NOT GET ON TOP OF CEILING PANELS TO GET ACCESS TO THE E11 ELECTRONICS EQUIPMENT RACK. GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS CAN BE INSTALLED BELOW THE E11 RACK. TOO MUCH WEIGHT ON CEILING PANELS CAN CAUSE DAMAGE TO EQUIPMENT AND POSSIBLE INJURY TO PERSONS.

- (4) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the E11 electronics equipment rack.

SUBTASK 23-15-24-020-001



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE BEAM STEERING UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE BEAM STEERING UNIT.

- (5) To remove the BEAM STEERING UNIT [1], do this task: E/E Box Removal, TASK 20-10-01-000-801.

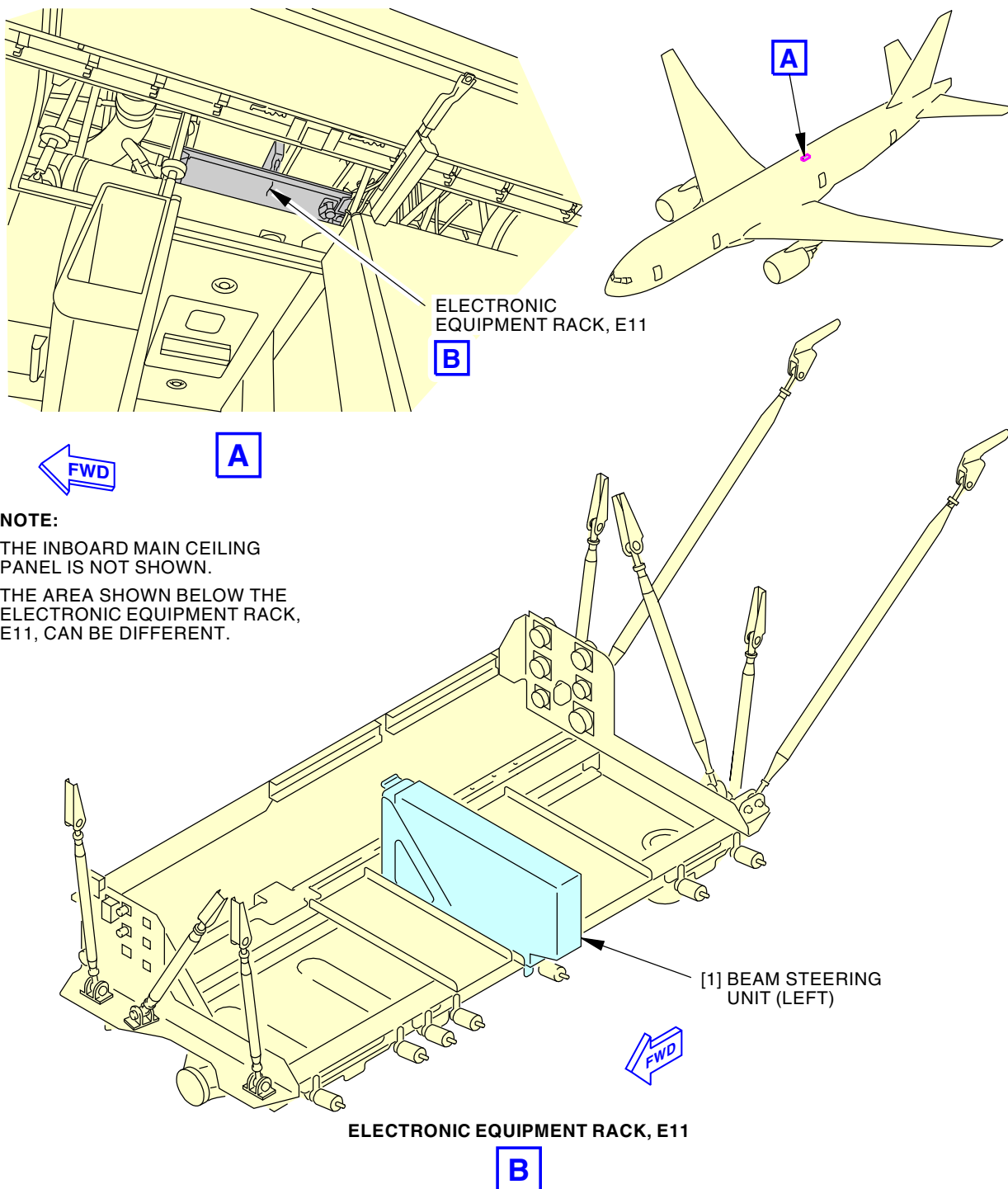
————— END OF TASK —————

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**Beam Steering Unit for Top-Mounted High Gain Antenna Installation
Figure 401/23-15-24-990-801**

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TASK 23-15-24-400-801

3. Beam Steering Unit for Top-Mounted High Gain Antenna Installation

(Figure 401)

A. General

- (1) This task includes the steps to install the beam steering unit (M23109) for the left SATCOM system.
- (2) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
20-10-01-400-801	E/E Box Installation (P/B 401)
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
34-21-00-820-801	Air Data Inertial Reference Unit - Alignment (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	BEAM STEERING UNIT	23-15-26-35A-025	ARO ALL

E. Location Zones

Zone	Area
117	Main Equipment Center, Left
212	Flight Compartment, Right
253	Area Above Passenger Compartment Ceiling, Left - Section 46

F. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

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G. Installation Procedure

SUBTASK 23-15-24-860-003

- (1) Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	20	C23431	SAT HIGH L

SUBTASK 23-15-24-860-004

- (2) Make sure the inboard main ceiling panel is removed.

SUBTASK 23-15-24-860-005



DO NOT GET ON TOP OF CEILING PANELS TO GET ACCESS TO THE E11 ELECTRONICS EQUIPMENT RACK. GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS CAN BE INSTALLED BELOW THE E11 RACK. TOO MUCH WEIGHT ON CEILING PANELS CAN CAUSE DAMAGE TO EQUIPMENT AND POSSIBLE INJURY TO PERSONS.

- (3) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the E11 electronics equipment rack.

SUBTASK 23-15-24-420-001



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE BEAM STEERING UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE BEAM STEERING UNIT.

- (4) To install the BEAM STEERING UNIT [1], do this task: E/E Box Installation, TASK 20-10-01-400-801.

SUBTASK 23-15-24-410-001

- (5) Install the inboard main ceiling panel. To install it, do this task: Main Ceiling Panel - Installation, TASK 25-21-06-400-801.

SUBTASK 23-15-24-860-006

- (6) 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>
E	20	C23431	SAT HIGH L

SUBTASK 23-15-24-410-002

- (7) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

(TASK 06-41-00-800-801).

H. Installation Test

SUBTASK 23-15-24-860-007

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-15-24-860-008

- (2) Do this task: Air Data Inertial Reference Unit - Alignment, TASK 34-21-00-820-801.

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SUBTASK 23-15-24-860-010

- (3) Do these steps to prepare for the ground test:

NOTE: All SATCOM communications stop during this test. If SATCOM communications are in progress, they are disconnected when you do this test.

- (a) Do these steps at a control display unit (CDU) (P8 or P9):
- 1) Push the MENU key.
 - 2) Push the line select key (LSK) adjacent to <SAT.
 - 3) Push the LSK adjacent to <SUBMENU (SATCOM MAIN MENU page).
 - 4) Push the LSK adjacent to <LOG-ON.
 - 5) If the LOG-ON STATE shows that the SATCOM system is logged-on or logging on, push the LSK adjacent to LOG-OFF*.
 - 6) When the LOG-ON STATE shows that the system is logged-off, continue the procedure.

SUBTASK 23-15-24-730-001

- (4) Use a maintenance access terminal (MAT) to do the system test for the BEAM STEERING UNIT [1]:

- (a) Make these selections on the MAT:
- 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 Satellite Communications (SATCOM) System
 - 5) SYSTEM TEST
 - 6) Left SATCOM System
 - 7) CONTINUE
- (b) Do the instructions that show on the MAT and then make these selections:
- 1) CONTINUE
 - 2) START TEST
- (c) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
- (d) If FAILED shows, make sure there is no maintenance message for the BEAM STEERING UNIT [1].
- 1) If there is a maintenance message for the BEAM STEERING UNIT [1], refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

SUBTASK 23-15-24-860-011

- (5) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch on the overhead panel, P5, to the OFF position.

————— **END OF TASK** —————

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TASK 23-15-24-000-802

4. **Beam Steering Unit for Top-Mounted High Gain Antenna (Broadband) Removal**

(Figure 402)

A. General

- (1) This task includes the steps to remove the beam steering unit (M23209) for the right SATCOM system.

B. References

Reference	Title
20-10-01-000-801	E/E Box Removal (P/B 401)
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

D. Location Zones

Zone	Area
118	Main Equipment Center, Right
254	Area Above Passenger Compartment Ceiling, Right - Section 46

E. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

F. Prepare for the Removal

SUBTASK 23-15-24-010-003

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-15-24-040-001

- (2) 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>
D	13	C23486	SATL HIGH R

SUBTASK 23-15-24-010-004

- (3) Remove the ceiling panel for access to the electronic equipment rack, E13 (Main Ceiling Panel - Removal, TASK 25-21-06-000-801).

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SUBTASK 23-15-24-010-005



DO NOT GO ON TOP OF THE CEILING PANELS TO GET ACCESS TO THE ELECTRONIC EQUIPMENT RACK. THERE ARE GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS BELOW THE RACK. TOO MUCH WEIGHT ON THE CEILING PANELS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (4) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the electronic equipment rack.

G. Removal Procedure

SUBTASK 23-15-24-020-002



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (1) To remove the BEAM STEERING UNIT [1], do this task: E/E Box Removal, TASK 20-10-01-000-801.

————— END OF TASK —————

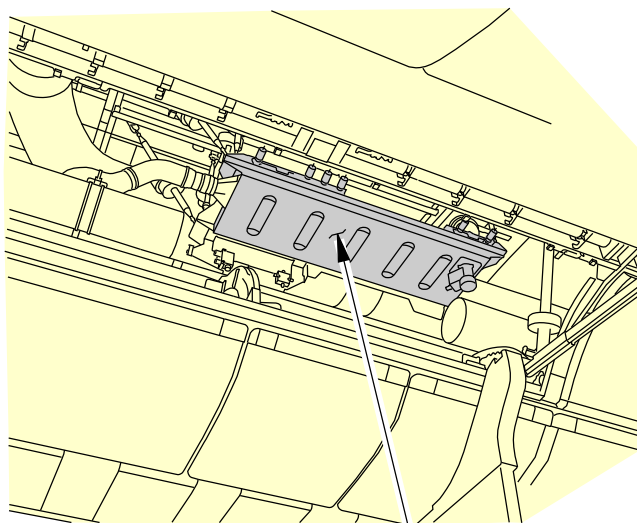
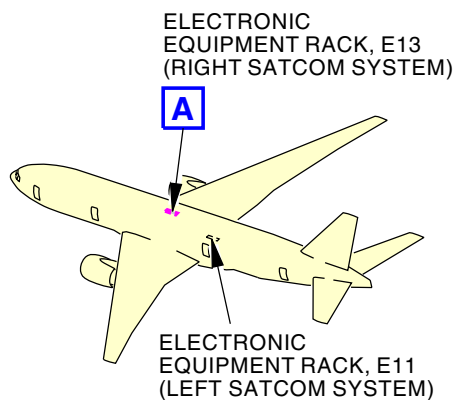
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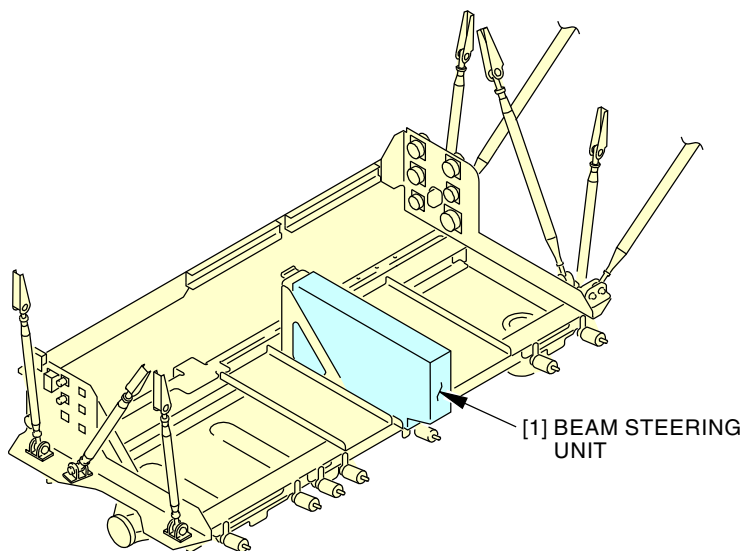
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ELECTRONIC EQUIPMENT RACK, E13

B

A



ELECTRONIC EQUIPMENT RACK, E13
(EXAMPLE)

B

NOTE:

THE CEILING PANEL IS NOT SHOWN.

THE AREA SHOWN BELOW THE ELECTRONIC EQUIPMENT RACK, CAN BE DIFFERENT.

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Beam Steering Unit for Top-Mounted High Gain Antenna (Broadband) Installation Figure 402/23-15-24-990-802

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TASK 23-15-24-400-802

5. Beam Steering Unit for Top-Mounted High Gain Antenna (Broadband) Installation

(Figure 402)

A. General

- (1) This task includes the steps to install the beam steering unit (M23209) for the right SATCOM system.

B. References

Reference	Title
20-10-01-400-801	E/E Box Installation (P/B 401)
23-15-00-740-807	Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test (P/B 501)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-1541	Platform - Access, Cabin Crown Part #: 1107WSCHSK Supplier: 6Y876 Opt Part #: J12005-1 Supplier: 81205
STD-1048	Stepladder - 6 foot (1.83m)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	BEAM STEERING UNIT	23-15-26-35A-025	ARO ALL

E. Location Zones

Zone	Area
118	Main Equipment Center, Right
254	Area Above Passenger Compartment Ceiling, Right - Section 46

F. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

G. Prepare for the Installation

SUBTASK 23-15-24-040-002

- (1) Make sure that this circuit breaker is open and has safety tag:

Right Power Management Panel, P210

Row	Col	Number	Name
D	13	C23486	SATL HIGH R

SUBTASK 23-15-24-010-006

- (2) Make sure that the ceiling panel is removed for access to the electronics equipment rack, E13.

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SUBTASK 23-15-24-010-007



DO NOT GO ON TOP OF THE CEILING PANELS TO GET ACCESS TO THE ELECTRONIC EQUIPMENT RACK. THERE ARE GALLEY CEILING PANELS, LAVATORY CEILING PANELS, OR OTHER CEILING PANELS BELOW THE RACK. TOO MUCH WEIGHT ON THE CEILING PANELS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (3) Use the cabin crown access platform, SPL-1541 or a 6 foot (1.83m) stepladder, STD-1048 to get access to the applicable electronic equipment rack E13.

H. Installation Procedure

SUBTASK 23-15-24-420-002



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (1) To install the BEAM STEERING UNIT [1], do this task: E/E Box Installation, TASK 20-10-01-400-801.

SUBTASK 23-15-24-440-001

- (2) 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>
D	13	C23486	SATL HIGH R

I. Installation Test

SUBTASK 23-15-24-740-001

- (1) Do this task: Satellite Communications (SATCOM) System (Right SATCOM) - BITE Test, TASK 23-15-00-740-807.

J. Put the Airplane Back to Its Usual Condition

SUBTASK 23-15-24-410-003

- (1) Install the ceiling panel (Main Ceiling Panel - Installation, TASK 25-21-06-400-801).

SUBTASK 23-15-24-410-004

- (2) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

————— END OF TASK —————

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SELECTIVE CALLING (SELCAL) SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains the operational test of the selective calling (SELCAL) system.
- B. When you do the SELCAL operational test, make sure the airplane is not in or near any large metal structures. HF communication while the airplane is on the ground will be degraded by airplane position or blocked by RF signal attenuation due to ground equipment and structures. If the quality of the transmitted and received voice signals are not satisfactory, move the airplane to a better position and rerun the test.

TASK 23-21-00-700-801

2. Selective Calling (SELCAL) System - Operational Test

A. References

Reference	Title
23-11-00-710-801	HF Communication System - Operational Test (P/B 501)
23-12-00-710-801	VHF Communication System - Operational Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1613	Transmitter Tester - Selcal, Ground Equipment Part #: CTS-700 Supplier: 30242 Part #: IFR 4000 Supplier: 51190 Part #: N1304B-1 Supplier: 30242 Opt Part #: N1304A Supplier: 30242

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Procedure

SUBTASK 23-21-00-760-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-21-00-860-001

- (2) Make sure that the VHF communication system (VHF Communication System - Operational Test, TASK 23-12-00-710-801) is serviceable.

SUBTASK 23-21-00-860-002

- (3) Make sure that the HF communication system (HF Communication System - Operational Test, TASK 23-11-00-710-801) is serviceable.

SUBTASK 23-21-00-700-001

- (4) Do the SELCAL operational test for VHF-L.
 - (a) Push the audio selector/volume control on the audio control panel to make sure each VHF is not set.

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- (b) Set the VHF-L to an approved VHF frequency.
 - 1) Push momentarily the VHF-L switch on the RTP-L.
 - 2) Tune the VHF-L STANDBY frequency to an approved VHF frequency.
 - 3) Push momentarily the DISPLAY TRANSFER switch on RTP-L.
 - 4) Make sure the MIC/CALL switch on the captain's audio control panel is not set.
- (c) Have a SELCAL identified signal transmitted on the same frequency the VHF-L is tuned.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder and a VHF communication system. Make sure the signal is approved.

 - 1) Set the SELCAL Transmitter/Tester, COM-1613 to the SELCAL code for the airplane.
- (d) Make sure the VHF-L CALL light on all audio control panels comes on.
- (e) Make sure you hear a chime in the flight compartment.
- (f) Push the MIC/CALL switch momentarily two times on the audio selector panel.
- (g) Make sure the CALL light for the VHF-L goes off.

SUBTASK 23-21-00-700-002

- (5) Do the SELCAL operational test for VHF-R.
 - (a) Push the audio selector/volume control on the audio control panel to make sure each VHF is not set.
 - (b) Set the VHF-R to an approved VHF frequency.
 - 1) Push momentarily the VHF-R switch on the RTP-R.
 - 2) Tune the VHF-R STANDBY frequency to an approved VHF frequency.
 - 3) Push momentarily the DISPLAY TRANSFER switch on RTP-R.
 - 4) Make sure the MIC/CALL switch on the captain's audio control panel is not set.
 - (c) Have a SELCAL identified signal transmitted on the same frequency the VHF-R is tuned.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder and a VHF communication system. Make sure the signal is approved.

 - 1) Set the SELCAL Transmitter/Tester, COM-1613 to the SELCAL code for the airplane.
 - (d) Make sure the VHF-R CALL light on all audio control panels comes on.
 - (e) Make sure you hear a chime in the flight compartment.
 - (f) Push the MIC/CALL switch momentarily two times on the audio selector panel.
 - (g) Make sure the CALL light for the VHF-R goes off.

SUBTASK 23-21-00-700-003

- (6) Do the SELCAL operational test for VHF-C.
 - (a) Push the audio selector/volume control on the audio control panel to make sure each VHF is not set.
 - (b) Set the VHF-C to an approved VHF frequency.
 - 1) Push momentarily the VHF-C switch on the RTP-C.

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- 2) Tune the VHF-C STANDBY frequency to an approved VHF frequency.
 - 3) Push momentarily the DISPLAY TRANSFER switch on RTP-C.
 - 4) Make sure the MIC/CALL switch on the captain's audio control panel is not set.
- (c) Have a SELCAL identified signal transmitted on the same frequency the VHF-C is tuned.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder and a VHF communication system. Make sure the signal is approved.

- 1) Set the SELCAL Transmitter/Tester, COM-1613 to the SELCAL code for the airplane.
- (d) Make sure the VHF-C CALL light on all audio control panels comes on.
- (e) Make sure you hear a chime in the flight compartment.
- (f) Push the MIC/CALL switch momentarily two times on the audio selector panel.
- (g) Make sure the CALL light for the VHF-C goes off.

SUBTASK 23-21-00-700-004

(7) Do the SELCAL operational test for HF-L.

- (a) Push the audio selector/volume control on the audio control panel to make sure each HF is not set.
- (b) Set the HF-L to an approved HF frequency.
- 1) Push momentarily the HF-L switch on the RTP-L.
 - 2) Tune the HF-L STANDBY frequency to an approved HF frequency.
 - 3) Push momentarily the DISPLAY TRANSFER switch on RTP-L.
 - 4) Make sure the MIC/CALL switch on the captain's audio control panel is not set.
- (c) Have a SELCAL identified signal transmitted on the same frequency the HF-L is tuned.
- NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder and a HF communication system. Make sure the signal is approved.
- 1) Set the SELCAL Transmitter/Tester, COM-1613 to the SELCAL code for the airplane.
- (d) Make sure the HF-L CALL light on all audio control panels comes on.
- (e) Make sure you hear a chime in the flight compartment.
- (f) Push the MIC/CALL switch momentarily two times on the audio selector panel.
- (g) Make sure the CALL light for the HF-L goes off.

SUBTASK 23-21-00-700-005

(8) Do the SELCAL operational test for HF-R.

- (a) Push the audio selector/volume control on the audio control panel to make sure each HF is not set.
- (b) Set the HF-R to an approved HF frequency.
- 1) Push momentarily the HF-R switch on the RTP-R.
 - 2) Tune the HF-R STANDBY frequency to an approved HF frequency.
 - 3) Push momentarily the DISPLAY TRANSFER switch on RTP-R.
 - 4) Make sure the MIC/CALL switch on the first captain's audio control panel is not set.

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- (c) Have a SELCAL identified signal transmitted on the same frequency the HF-R is tuned.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder and a HF communication system. Make sure the signal is approved.

- 1) Set the SELCAL Transmitter/Tester, COM-1613 to the SELCAL code for the airplane.
- (d) Make sure the HF-R CALL light on all audio control panels comes on.
- (e) Make sure you hear a chime in the flight compartment.
- (f) Push the MIC/CALL switch momentarily two times on the audio selector panel.
- (g) Make sure the CALL light for the HF-R goes off.

SUBTASK 23-21-00-860-003

- (9) Set the communication systems back to their usual conditions.

SUBTASK 23-21-00-760-002

- (10) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

———— **END OF TASK** ————

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SELCAL DECODER - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the Selective Calling (SELCAL) decoder.
 - (2) An installation of the SELCAL decoder.
- B. The SELCAL decoder (M23095) is on the E1 electronics equipment rack, shelf No. 2, in the main equipment center.
- C. The SELCAL Program Switch Module (M23121) is located behind the SELCAL decoder. Switches inside of the module set the airplane's SELCAL code. The switch has 16 switches in groups of four. The positions of the switches in each group identify one of the four SELCAL code letters. Refer to the wiring diagram for switch settings (WDM 23-21-12).

TASK 23-21-01-000-801

2. SELCAL Decoder Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
20-10-01-000-801	E/E Box Removal (P/B 401)

B. **Location Zones**

Zone	Area
117	Main Equipment Center, Left

C. **Access Panels**

Number	Name/Location
117AL	Main Equipment Center Access Door

D. **Removal Procedure**

SUBTASK 23-21-01-860-001

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

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
F	1	C23607	SELCAL

SUBTASK 23-21-01-010-001

- (2) Open this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

(TASK 06-41-00-800-801).

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SUBTASK 23-21-01-010-002



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE SELCAL DECODER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE SELCAL DECODER.

- (3) To remove the SELCAL DECODER [1], do this task: E/E Box Removal, TASK 20-10-01-000-801.

———— **END OF TASK** ————

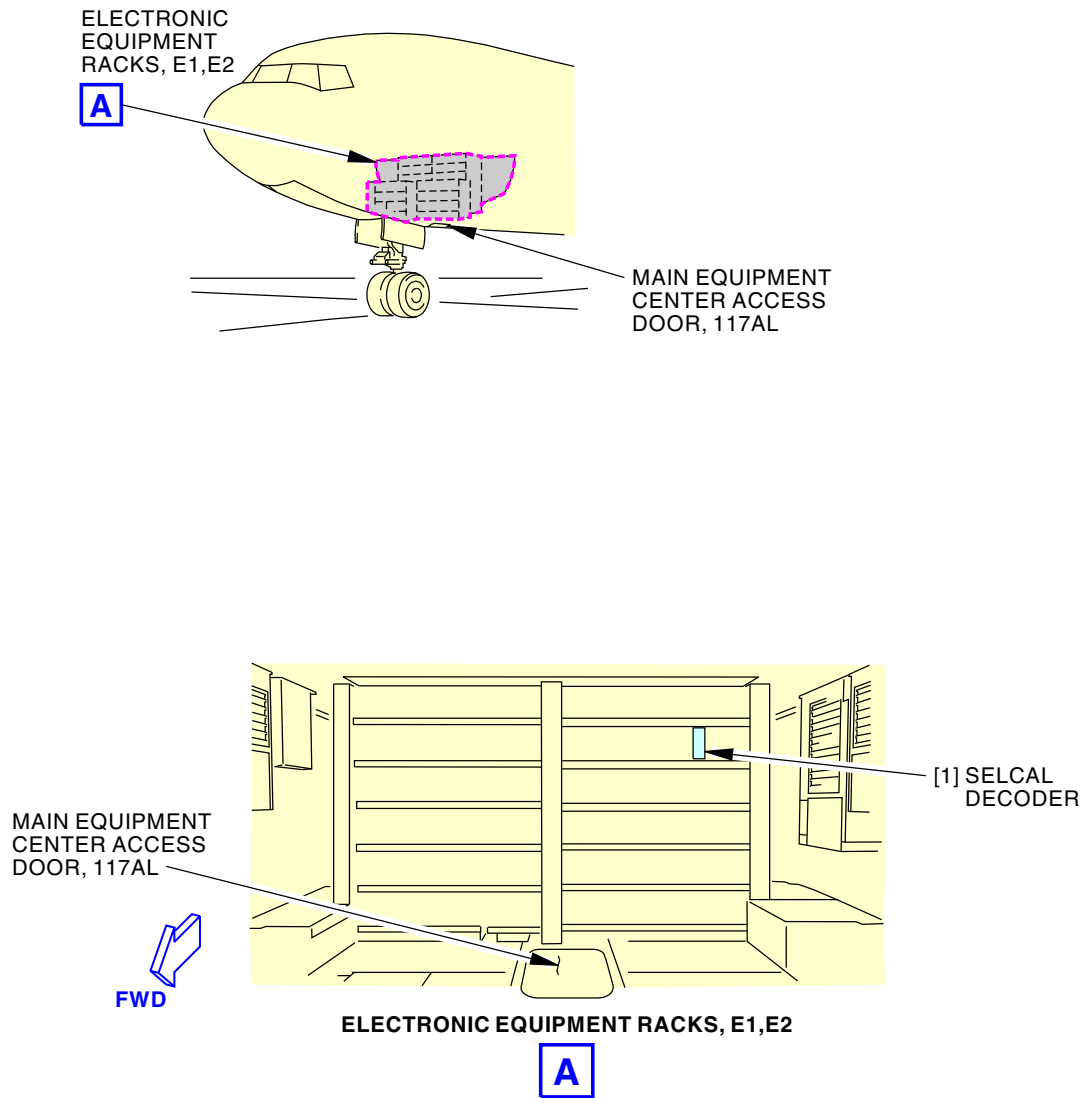
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SELCAL Decoder Installation
Figure 401/23-21-01-990-801

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TASK 23-21-01-400-801

3. SELCAL Decoder Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Fuselage (P/B 201)
20-10-01-400-801	E/E Box Installation (P/B 401)
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1613	Transmitter Tester - Selcal, Ground Equipment Part #: CTS-700 Supplier: 30242 Part #: IFR 4000 Supplier: 51190 Part #: N1304B-1 Supplier: 30242 Opt Part #: N1304A Supplier: 30242

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	SELCAL DECODER	23-21-01-01-005	ARO ALL

D. Location Zones

Zone	Area
117	Main Equipment Center, Left

E. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

F. Installation Procedure

SUBTASK 23-21-01-860-002

- (1) Make sure that this circuit breaker is open and has safety tag:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
F	1	C23607	SELCAL

SUBTASK 23-21-01-420-001

 CAUTION	DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE SELCAL DECODER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE SELCAL DECODER.

- (2) To install the SELCAL DECODER [1], do this task: E/E Box Installation, TASK 20-10-01-400-801.

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SUBTASK 23-21-01-410-001

- (3) Close this access panel:

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

117AL	Main Equipment Center Access Door

(TASK 06-41-00-800-801).

G. Installation Test

SUBTASK 23-21-01-860-003

- (1) Remove the safety tag and close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	1	C23607	SELCAL

SUBTASK 23-21-01-860-004

- (2) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-21-01-710-001

- (3) Make sure the SELCAL system receives signals from a VHF system.

- (a) Get the SELCAL code for the applicable airplane.
- (b) Set the code into the SELCAL ground station transmitter.
- (c) Set the VHF to an approved VHF frequency.
- (d) Send a SELCAL identified signal on the same frequency you tuned the VHF.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder and a VHF communication system.

- 1) Set the SELCAL Transmitter/Tester, COM-1613 to the SELCAL code for the airplane.
- 2) Make sure the applicable VHF call light on the audio control panel comes on.
- 3) Make sure you hear a chime in the flight compartment.
- (e) Push the CALL switch for the applicable VHF on the audio control panel.
 - 1) Make sure the CALL light for the applicable VHF goes off.
 - 2) Make sure the chime stops.
- (f) Put the VHF communication system back to its usual condition.

————— END OF TASK —————

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EMERGENCY LOCATOR TRANSMITTER (ELT) SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure contains these tasks:
 - (1) An operational test of the ELT system.
 - (2) A system test of the ELT system.

TASK 23-24-00-710-803-003

2. Emergency Locator Transmitter (ELT) System - Operational Test

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) This task provides a procedure to do an operational test of the ELT system from the ELT control panel in the flight deck.

B. References

Reference	Title
23-12-00-730-801	VHF Communication System - System Test (P/B 501)
24-22-00-860-806	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Prepare for the Test

SUBTASK 23-24-00-860-006-006

- (1) Set the right VHF communication system to listen on the frequency of 121.5 MHz (TASK 23-12-00-730-801).

NOTE: The VHF system with a bottom mounted antenna is recommended for this test. If the VHF antenna is on top, it is possible to hear the ELT signal even though the ELT antenna has failed.

SUBTASK 23-24-00-910-002-006

- (2) Make sure that you do the ELT test in the first five minutes of the hour (UTC).

ARO 001-016

NOTE: Free Space Transmission Tests from the aircraft on 121.5/243 MHz are generally allowed any time within five minutes after each hour. Check your local regulations. THERE IS NO ALLOWANCE FOR TRANSMITTING A VALID 406 MHZ MESSAGE AT ANY TIME.

The ELT will begin transmitting on 121.5/243 MHz immediately following activation and 406 MHz distress signals approximately 50 seconds after activation. If the ELT is inadvertently kept in the ON position for longer than approximately 50 seconds, you will hear a brief interruption of the 121.5 MHz signal while the 406 MHz message is transmitted. If this occurs, then you must reset the ELT immediately and tell the local emergency authorities. This will prevent emergency search and rescue operations that are not necessary.

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NOTE: Free Space Transmission Tests from the aircraft on 121.5 MHz is generally allowed any time within five minutes after each hour. Check your local regulations. **THERE IS NO ALLOWANCE FOR TRANSMITTING A VALID 406 MHZ MESSAGE AT ANY TIME.**

The ELT will begin transmitting on 121.5 MHz immediately following activation and 406 MHz distress signals approximately 50 seconds after activation. If the ELT is inadvertently kept in the ON position for longer than approximately 50 seconds, you will hear a brief interruption of the 121.5 MHz signal while the 406 MHz message is transmitted. If this occurs, then you must reset the ELT immediately and tell the local emergency authorities. This will prevent emergency search and rescue operations that are not necessary.

ARO 001-016

- (a) If you do the ELT test outside of the first five minutes of the hour (UTC), do this step:
- 1) Speak with the applicable local emergency authority (Air Traffic Control Tower or Flight Service Station) to let them know there will be an ELT Test Transmission on the Emergency Frequencies 121.5/243 MHz.

ARO 017-999

- (b) If you do the ELT test outside of the first five minutes of the hour (UTC), do this step:
- 1) Speak with the applicable local emergency authority (Air Traffic Control Tower or Flight Service Station) to let them know there will be an ELT Test Transmission on the Emergency Frequencies 121.5 MHz.

ARO ALL

E. ELT Operational Test at the ELT Control Panel (Flight Deck)

SUBTASK 23-24-00-710-004-003

- (1) Do these steps to do the ELT operational test at the ELT control panel:



WARNING

MAKE SURE THAT YOU FOLLOW THE LOCAL ELT OPERATION REGULATIONS. IF YOU MAKE AN ACCIDENTAL TRANSMISSION, TELL THE AUTHORITIES. THIS WILL PREVENT EMERGENCY SEARCH OPERATIONS THAT ARE NOT NECESSARY.

- (a) Follow the local ELT operation requirements.
- (b) Read all the steps that follow before you continue to do the subsequent steps.



CAUTION

DURING THE PERFORMANCE OF THIS TEST, THE ELT CONTROL PANEL SWITCH AND THE SWITCH ON THE ELT FRONT PANEL MUST NOT BE KEPT IN THE ON POSITION FOR MORE THAN 50 SECONDS AT A TIME. IF ANY TWO CONSECUTIVE STEPS (REQUIRING EITHER OF THESE SWITCHES TO BE SET TO THE ON POSITION) TAKE LONGER THAN 50 SECONDS TO COMPLETE, MOVE THE ELT CONTROL PANEL SWITCH TO THE RESET POSITION AND THEN BACK TO ON POSITION AND CONTINUE. IF THE ELT IS INADVERTENTLY OPERATED FOR LONGER THAN 50 SECONDS THEN THE AUTHORITIES MUST BE INFORMED TO PREVENT EMERGENCY SEARCH OPERATIONS THAT ARE NOT NECESSARY.

- (c) On the ELT control panel at the pilot overhead panel, P5, open the guard on the ELT switch.

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- (d) Set the ELT RESET/ARMED/ON switch to the ON position.
 - 1) Make sure that you hear the ELT signal on the right VHF communication system.
 - 2) On the EICAS display, make sure that the ELT ON advisory message shows in less than 10 seconds.
- (e) Set the ELT RESET/ARMED/ON switch to the RESET position for at least 1 second and then release.
 - 1) Make sure that you do not hear the ELT signal on the right VHF communication system.
 - 2) On the EICAS display, make sure that the ELT ON advisory message goes out of view.
- (f) Close the guard over the ELT RESET/ARMED/ON switch on the ELT control panel.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-24-00-910-009-006

- (1) Speak with the local emergency authority (Air Traffic Control Tower or Flight Service Station) to tell them that the ELT test is completed, if applicable.

SUBTASK 23-24-00-860-011-006

- (2) Remove the electrical power from the airplane, if it is not necessary for other tasks (TASK 24-22-00-860-806).

————— END OF TASK —————

TASK 23-24-00-730-804-006

3. Emergency Locator Transmitter (ELT) System - System Test

A. General

- (1) This task provides a procedure to do a system test of the ELT system. The system test includes the ELT operational test at the ELT control panel in the flight deck and the ELT self-test at the ELT front panel.

B. References

Reference	Title
23-12-00-730-801	VHF Communication System - System Test (P/B 501)
23-24-01 P/B 201 Config 3	EMERGENCY LOCATOR TRANSMITTER - MAINTENANCE PRACTICES
24-22-00-860-806	Remove Electrical Power (P/B 201)
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
25-21-07-000-801	Lowered Ceiling Panel Removal (P/B 401)
25-21-07-400-801	Lowered Ceiling Panel Installation (P/B 401)

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

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D. Prepare for the Test

SUBTASK 23-24-00-860-008-006

- (1) Set the right VHF communication system to listen on the frequency of 121.5 MHz (TASK 23-12-00-730-801).

NOTE: The VHF system with a bottom mounted antenna is recommended for this test. If the VHF antenna is on top, it is possible to hear the ELT signal even though the ELT antenna has failed.

SUBTASK 23-24-00-910-006-006

- (2) Make sure that you do the ELT test in the first five minutes of the hour (UTC).

ARO 001-016

NOTE: Free Space Transmission Tests from the aircraft on 121.5/243 MHz are generally allowed any time within five minutes after each hour. Check your local regulations. THERE IS NO ALLOWANCE FOR TRANSMITTING A VALID 406 MHZ MESSAGE AT ANY TIME.

The ELT will begin transmitting on 121.5/243 MHz immediately following activation and 406 MHz distress signals approximately 50 seconds after activation. If the ELT is inadvertently kept in the ON position for longer than approximately 50 seconds, you will hear a brief interruption of the 121.5 MHz signal while the 406 MHz message is transmitted. If this occurs, then you must reset the ELT immediately and tell the local emergency authorities. This will prevent emergency search and rescue operations that are not necessary.

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NOTE: Free Space Transmission Tests from the aircraft on 121.5 MHz is generally allowed any time within five minutes after each hour. Check your local regulations. THERE IS NO ALLOWANCE FOR TRANSMITTING A VALID 406 MHZ MESSAGE AT ANY TIME.

The ELT will begin transmitting on 121.5 MHz immediately following activation and 406 MHz distress signals approximately 50 seconds after activation. If the ELT is inadvertently kept in the ON position for longer than approximately 50 seconds, you will hear a brief interruption of the 121.5 MHz signal while the 406 MHz message is transmitted. If this occurs, then you must reset the ELT immediately and tell the local emergency authorities. This will prevent emergency search and rescue operations that are not necessary.

ARO 001-016

- (a) If you do the ELT test outside of the first five minutes of the hour (UTC), do this step:
 - 1) Speak with the applicable local emergency authority (Air Traffic Control Tower or Flight Service Station) to let them know there will be an ELT Test Transmission on the Emergency Frequencies 121.5/243 MHz.

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- (b) If you do the ELT test outside of the first five minutes of the hour (UTC), do this step:
 - 1) Speak with the applicable local emergency authority (Air Traffic Control Tower or Flight Service Station) to let them know there will be an ELT Test Transmission on the Emergency Frequencies 121.5 MHz.

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E. ELT Operational Test at the ELT Control Panel (Pilots' overhead panel, P5)

SUBTASK 23-24-00-710-009-006

- (1) Do this task: Emergency Locator Transmitter (ELT) System - Operational Test, TASK 23-24-00-710-803-003.

F. ELT Self-Test at the Front Panel of the ELT Unit

SUBTASK 23-24-00-010-002-006

- (1) Open the access panel to get access to the ELT (TASK 25-21-07-000-801 or TASK 25-21-06-000-801)

NOTE: For the location of the ELT, refer to the ELT Removal/Installation procedure (PAGEBLOCK 23-24-01/201 Config 3).

SUBTASK 23-24-00-740-004-006

- (2) Do these steps to do the self-test at the ELT front panel:

NOTE: The self-test includes a 406 MHz test transmission. This test transmission does not cause a search operation.



MAKE SURE THAT YOU FOLLOW THE LOCAL ELT OPERATION REGULATIONS. IF YOU MAKE AN ACCIDENTAL TRANSMISSION, TELL THE AUTHORITIES. THIS WILL PREVENT EMERGENCY SEARCH OPERATIONS THAT ARE NOT NECESSARY.

- (a) Follow the local ELT operation requirements.

ARO 017-999

- (b) Make sure that the battery expiration label date has not been exceeded
- (c) If the remote control panel is installed, make sure the switch is set to the ARMED position.

ARO ALL



READ ALL THE STEPS THAT FOLLOW BEFORE YOU START THE ELT TEST PROCEDURE. YOU MUST BECOME FAMILIAR WITH THE INSTRUCTIONS. MAKE SURE THAT YOU USE A TIMING DEVICE TO MONITOR THE TIME DURING THE ELT TEST. YOU MUST COMPLETE THE ELT TEST PROCEDURE IN LESS THAN 50 SECONDS. THIS WILL HELP PREVENT ACCIDENTAL ACTIVATION OF THE ELT.

- (d) Read all of the instructions below before you do the subsequent steps.



DO NOT OPERATE THE ELT FOR MORE THAN 50 SECONDS. IF YOU OPERATE THE ELT CONTINUOUSLY FOR MORE THAN 50 SECONDS, IT WILL TRANSMIT A 406-MHZ EMERGENCY SIGNAL. THE SIGNAL TELLS EMERGENCY PERSONNEL TO DO A SEARCH FOR A MISSING AIRCRAFT. IF THE EMERGENCY SIGNAL OCCURS DURING THIS TEST, IMMEDIATELY TELL THE APPLICABLE EMERGENCY PERSONNEL.

- (e) Move the ELT switch on the front panel of the ELT from the ARM position to the OFF position.
- (f) Move the ELT switch on the front panel of the ELT from the OFF position to the ARM position.

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- 1) Make sure that the light-emitting diode (LED) on the ELT front panel flashes three times.

NOTE: The first flash indicates ELT self-test pass. The second flash indicates that the AIM self-test pass. The third flash indicates a valid 24-bit address code was transferred to the ELT.

ARO 001-013

- 2) Make sure that the light-emitting diode (LED) flashes one time.

NOTE: If the Aircraft Identification Module (AIM) encoded in the NULL protocol and The 24-bit Programmable Switch Module (PSM) disabled. Then, the ELT front panel LED flashes one time shows that the ELT self-test pass.

ARO 017-999

- 3) Make sure that the light-emitting diode (LED) flashes the correct number of times. (Figure 501)

ARO ALL

G. Put the Airplane Back to Its Usual Condition

SUBTASK 23-24-00-910-010-006

- (1) Speak with the local emergency authority (Air Traffic Control Tower or Flight Service Station) to tell them that the ELT test is completed, if applicable.

SUBTASK 23-24-00-410-003-006

- (2) Close the access panel for the ELT (TASK 25-21-07-400-801 or TASK 25-21-06-400-801)

SUBTASK 23-24-00-860-012-006

- (3) Remove the electrical power from the airplane, if it is not necessary for other tasks (TASK 24-22-00-860-806).

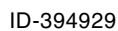
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2526257 S0000593635_V1

ELT Self-Test Validation
Figure 501/23-24-00-990-801-006

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EMERGENCY LOCATOR TRANSMITTER - MAINTENANCE PRACTICES

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) A removal of the emergency locator transmitter (ELT).
 - (2) An installation of the ELT.
 - (3) A removal of the aircraft identification module (AIM).
 - (4) An installation of the AIM.
- C. The ELT, M23575, and the AIM, M23643, are installed at approximately station 1881 in the left area above the passenger compartment ceiling.

TASK 23-24-01-000-804-003

2. Emergency Locator Transmitter Removal

(Figure 201)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)
25-21-07-000-801	Lowered Ceiling Panel Removal (P/B 401)

B. **Location Zones**

Zone	Area
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

C. **Removal Procedure**

SUBTASK 23-24-01-010-006-003

- (1) Open the access panel to get access to the ELT (Lowered Ceiling Panel Removal, TASK 25-21-07-000-801 or Main Ceiling Panel - Removal, TASK 25-21-06-000-801).

ARO 001-016

SUBTASK 23-24-01-020-006-003

- (2) Do these steps to remove the ELT [1]:
 - (a) Make sure the ELT switch is in the OFF position.
 - (b) Disconnect the electrical connectors [5] from the ELT front panel.
 - (c) Remove the four bolts [4] that attach the ELT [1] to the airplane structure.
 - (d) Move the ELT [1] forward until it disconnects from the Aircraft Identification Module (AIM) [2].
 - (e) Remove the ELT [1].

ARO 017-999

SUBTASK 23-24-01-020-013-003

- (3) Do these steps to remove the ELT [1]:
 - (a) Make sure the ELT switch is in the OFF position.
 - (b) Disconnect the electrical connector from the ELT front panel.

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- (c) Disconnect the antenna cable from the ELT front panel.
- (d) Remove the AIM [2] from the ELT front panel (Aircraft Identification Module Removal, TASK 23-24-01-000-805-003).
- (e) Disconnect the electrical connector from the ELT back panel.
- (f) Remove the four nuts that attach the ELT [1] to the ELT adapter plate.
- (g) Remove the ELT [1].

ARO ALL

———— **END OF TASK** ————

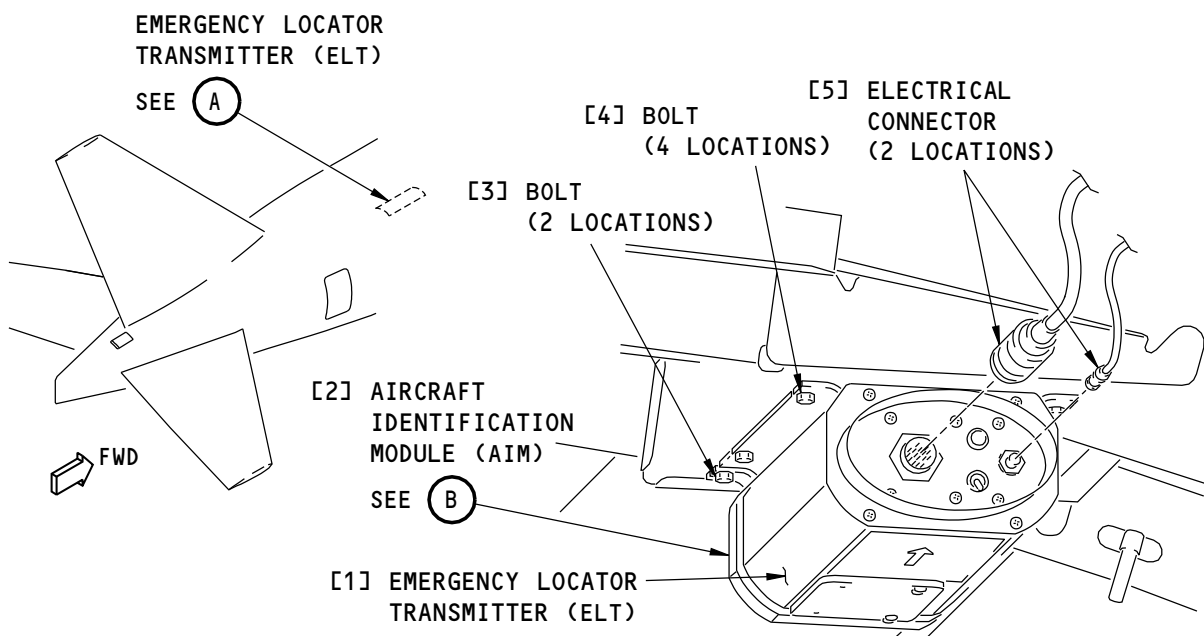
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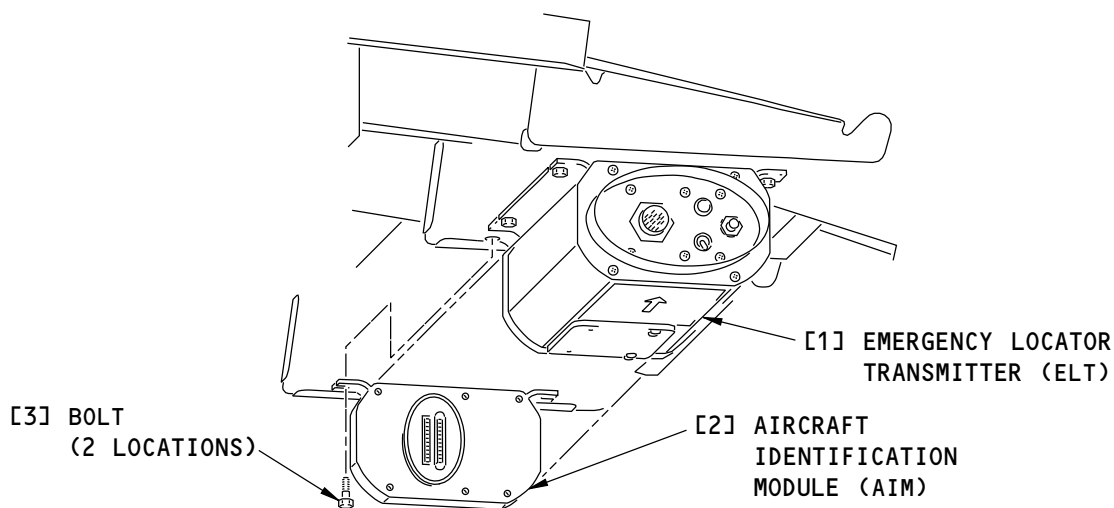
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**EMERGENCY LOCATOR TRANSMITTER (ELT)
ASSEMBLY**

(A)



AIRCRAFT IDENTIFICATION MODULE (AIM)

(B)

N29043 S0006405124_V1

**Emergency Locator Transmitter (ELT) Assembly
Figure 201/23-24-01-990-803-003 (Sheet 1 of 2)**

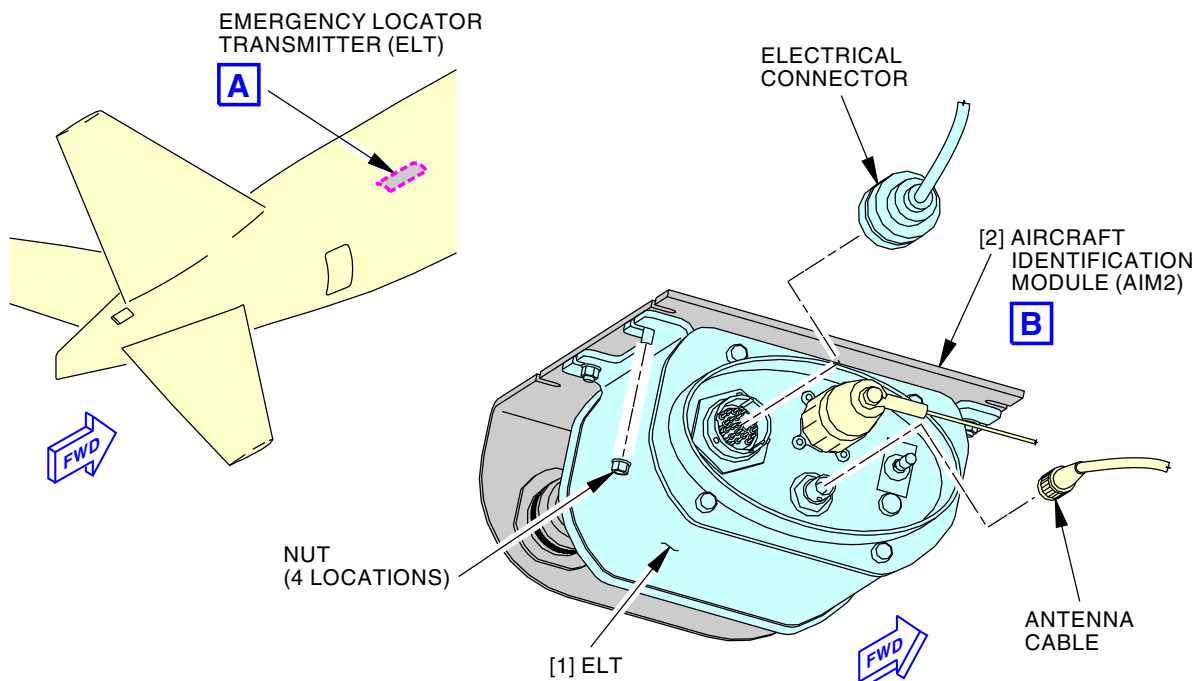
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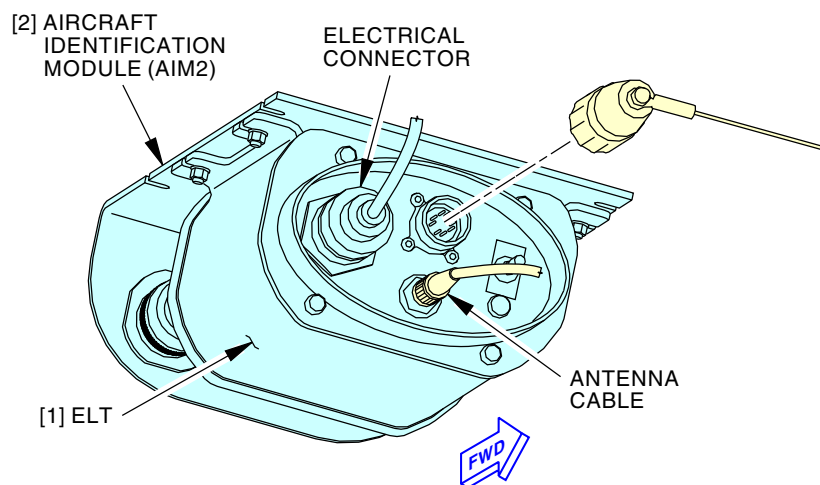
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EMERGENCY LOCATOR TRANSMITTER (ELT) ASSEMBLY



AIRCRAFT IDENTIFICATION MODULE (AIM)

2526378 S0000589663_V1

Emergency Locator Transmitter (ELT) Assembly
Figure 201/23-24-01-990-803-003 (Sheet 2 of 2)

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TASK 23-24-01-400-804-003

3. Emergency Locator Transmitter Installation

(Figure 201)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
23-24-00-730-804-006	Emergency Locator Transmitter (ELT) System - System Test (P/B 501)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
25-21-07-400-801	Lowered Ceiling Panel Installation (P/B 401)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	ELT	23-24-02-01-120	ARO 001-016

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

D. Installation Procedure

ARO 001-016

SUBTASK 23-24-01-420-006-003

- (1) Do these steps to install the ELT [1]:
 - (a) Make sure the ELT switch is in the OFF position.
 - (b) Put the ELT [1] in its position, just forward of AIM connector.
 - (c) Move the ELT aft until it connects to the AIM [2].
 - (d) Install the four bolts [4] through the mounting slots of the ELT to attach it to the airplane structure.
 - (e) Connect the electrical connectors [5] to the ELT [1].
 - (f) Set the ELT switch to the ARM position.

ARO 017-999

SUBTASK 23-24-01-420-015-003

- (2) Do these steps to install the ELT [1]:
 - (a) Make sure the ELT switch is in the OFF position.
 - (b) Install the four nuts onto the adapter plate studs to attach the ELT [1] to the adapter plate.
 - (c) Connect the electrical connector to the ELT front panel.
 - (d) Connect the antenna cable to the ELT front panel.
 - (e) Install the AIM [2] to the ELT front panel (Aircraft Identification Module Removal, TASK 23-24-01-000-805-003).
 - (f) Connect the electrical connector to the ELT back panel.

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- (g) Set the ELT switch to the ARM position.

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E. ELT Installation Test

SUBTASK 23-24-01-710-003-003

- (1) Do this task: Emergency Locator Transmitter (ELT) System - System Test, TASK 23-24-00-730-804-006.

NOTE: It is the responsibility of the airlines to report any change in the registered ELT information to their designated registration authority.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-24-01-410-005-003

- (1) Close the access panel for the ELT (Lowered Ceiling Panel Installation, TASK 25-21-07-400-801 or Main Ceiling Panel - Installation, TASK 25-21-06-400-801).

————— END OF TASK —————

TASK 23-24-01-000-805-003

4. Aircraft Identification Module Removal

(Figure 201)

A. References

Reference	Title
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)
25-21-07-000-801	Lowered Ceiling Panel Removal (P/B 401)

B. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

C. Removal Procedure

SUBTASK 23-24-01-010-007-003

- (1) Open the access panel to get access to the AIM (Lowered Ceiling Panel Removal, TASK 25-21-07-000-801 or Main Ceiling Panel - Removal, TASK 25-21-06-000-801).

ARO 001-016

SUBTASK 23-24-01-020-007-003

- (2) Do these steps to remove the aircraft identification module AIM [2]:
- (a) Remove the two bolts [3] that attach the AIM [2] to the airplane structure.
 - (b) Move the AIM [2] aft until it disconnects from the ELT [1].
 - (c) Remove the AIM [2].

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SUBTASK 23-24-01-020-014-003

- (3) Do these steps to remove the aircraft identification module AIM [2]:

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- (a) Remove the lanyard from the structure of the airplane.
- (b) Remove the AIM [2] from the ELT front panel.

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————— END OF TASK —————

TASK 23-24-01-400-805-003

5. Aircraft Identification Module Installation

(Figure 201)

A. General

- (1) The Aircraft Identification Module (AIM) must be pre-programmed for the specific airplane before installation.

B. References

Reference	Title
23-24-00-730-804-006	Emergency Locator Transmitter (ELT) System - System Test (P/B 501)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
25-21-07-400-801	Lowered Ceiling Panel Installation (P/B 401)

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

D. Installation Procedure

ARO 001-016

SUBTASK 23-24-01-420-007-003

- (1) Do these steps to install the aircraft identification module AIM [2]:
 - (a) Put the AIM [2] in its position.
 - (b) Move the AIM [2] forward until it connects to the ELT [1].
 - (c) Install the two bolts [3] through the mounting slots of the AIM [2] to attach it to the airplane structure.

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SUBTASK 23-24-01-420-014-003

- (2) Do these steps to install the aircraft identification module AIM [2]:
 - (a) Install the AIM [2] to the ELT front panel.
 - (b) Connect the lanyard to the airplane structure.

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E. ELT Installation Test

SUBTASK 23-24-01-710-004-003

- (1) Do this task: Emergency Locator Transmitter (ELT) System - System Test, TASK 23-24-00-730-804-006.

NOTE: It is the responsibility of the airlines to report any change in the registered ELT information to their designated registration authority.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-24-01-410-006-003

- (1) Close the access panel for the AIM (Lowered Ceiling Panel Installation, TASK 25-21-07-400-801 or Main Ceiling Panel - Installation, TASK 25-21-06-400-801).

———— **END OF TASK** ————

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EMERGENCY LOCATOR TRANSMITTER ANTENNA - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the emergency locator transmitter (ELT) antenna.
 - (2) An installation of the ELT antenna.
- B. The ELT antenna, M23642, is installed at approximately station 1881 on the top centerline of the fuselage.

TASK 23-24-02-000-801

2. ELT Antenna Removal

(Figure 401)

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 311 Supplier: F6892 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 62176 Part #: TS1275-4 Supplier: 1DWR5

B. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

C. Removal Procedure

SUBTASK 23-24-02-020-001

- (1) Do these steps to remove the ELT antenna [1]:
 - (a) Remove the six bolts [2] that attach the ELT antenna to the airplane.



CAUTION

REMOVE THE AERODYNAMIC FILLET SEAL CAREFULLY WITH THE SEALANT REMOVAL TOOL. DAMAGE TO THE AIRPLANE SKIN OR THE COAXIAL CABLE CAN OCCUR.

- (b) Use a sealant removal tool, COM-2481 to remove the aerodynamic seal around the flange of the ELT antenna [1].

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- (c) Move the ELT antenna away from the airplane until you have access to the coaxial connector [3].
- (d) Disconnect the coaxial connector [3] from the ELT antenna [1].
 - 1) Make sure the coaxial connector [3] does not go back through the opening in the airplane skin.
- (e) Put protective covers on the coaxial cable connector and the antenna coax connector.

———— **END OF TASK** ————

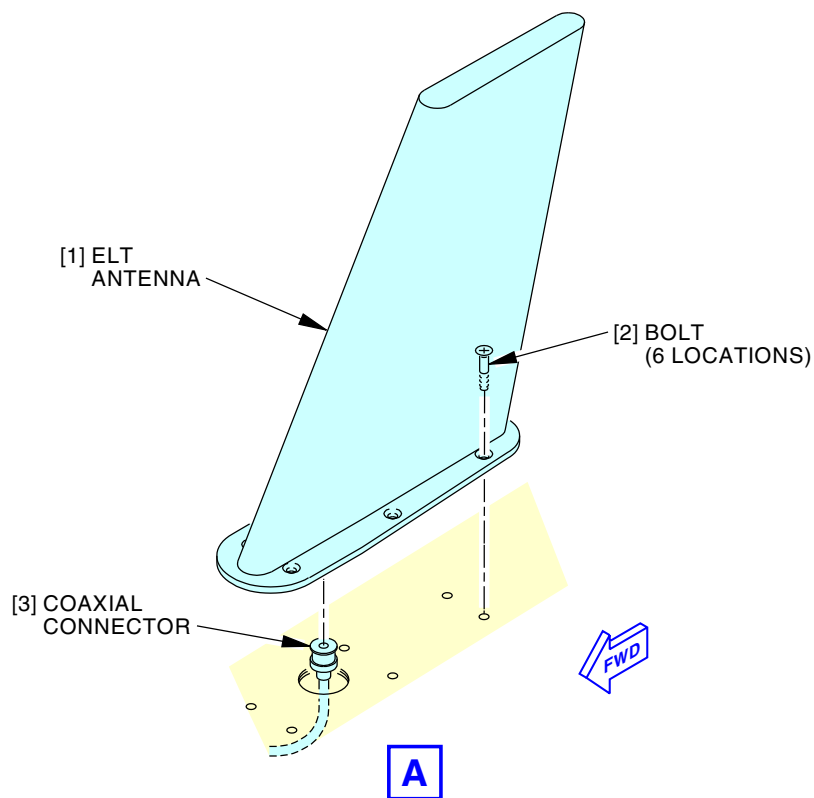
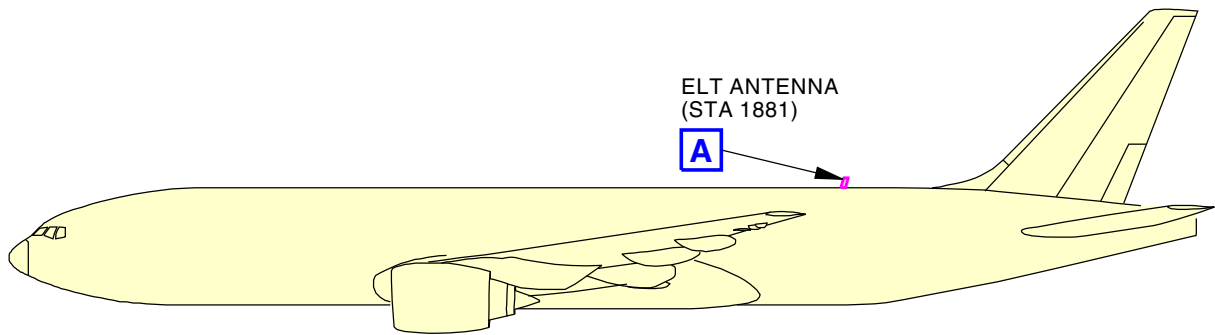
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Emergency Locator Transmitter (ELT) Antenna Installation
Figure 401/23-24-02-990-801

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TASK 23-24-02-400-801

3. ELT Antenna Installation

(Figure 401)

A. References

Reference	Title
20-11-00-910-801	Standard Torque Values (P/B 201)
20-30-84-910-801	Final Cleaning of Metal Prior to Painting (Series 84) (P/B 201)
23-24-00-730-804-006	Emergency Locator Transmitter (ELT) System - System Test (P/B 501)
51-21-03-100-801	Corrosion Removal and Control (P/B 701)
51-21-04-620-801	Alodine 600, 1000, 1200, and 1200S Coating Application (P/B 701)
51-31-01-390-806	Aerodynamic Smoother Application (P/B 201)
SL 20-016	DEFERRED APPLICATION OF AERO-SEALANT IN ANTENNA INSTALLATIONS
SWPM 20-20-00	Standard Wiring Practices Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

C. Consumable Materials

Reference	Description	Specification
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
B01004	Solvent - Final Cleaning Of Metal Prior To Painting - Series 84	
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79 Type III
C00913	Compound - Corrosion Inhibiting Material, Nondrying Resin Mix	BMS3-27
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

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D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	ELT antenna	23-24-02-01-010	ARO ALL
		23-24-02-01-160	ARO 011-013

E. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

F. Prepare for the Installation

SUBTASK 23-24-02-110-001



DO NOT GET SOLVENT IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- (1) Clean the airplane mating surface with Series 84 solvent, B01004 (TASK 20-30-84-910-801).
 - (a) Make a clean cotton wiper, G00034 moist (not soaked) with Series 84 solvent, B01004 (TASK 20-30-84-910-801).
 - (b) Rub the airplane mating surface with the cotton wiper, G00034 until the surface is clean.

SUBTASK 23-24-02-370-001

- (2) If the finish on the airplane mating surface has corrosion or other damage, do the steps that follow to clean and prepare the surface:
 - (a) If it is necessary, do this task: Corrosion Removal and Control, TASK 51-21-03-100-801.
 - (b) Do this task: Alodine 600, 1000, 1200, and 1200S Coating Application, TASK 51-21-04-620-801.

NOTE: This procedure has steps to clean and prepare the surface before you apply the alodine.

- 1) Make sure the alodine layer is approximately 1/4-inch larger than the antenna baseplate.
- (c) Apply two layers of primer, C00175 to the mating surface.
 - 1) Make sure the primer, C00175 layer is approximately 1/4-inch larger than the antenna baseplate.

SUBTASK 23-24-02-620-001



USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

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(WARNING PRECEDES)



DO NOT GET THIS MATERIAL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THIS MATERIAL. PUT ON A RESPIRATOR, EYE PROTECTION (GOGGLES, OR OTHER APPROVED PROTECTION), AND GLOVES BEFORE YOU USE THIS MATERIAL. MAKE SURE THAT THERE IS SUFFICIENT AIRFLOW. KEEP THIS MATERIAL AWAY FROM SPARKS, FLAME, AND HEAT. THIS MATERIAL CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (3) Do these steps to do the corrosion protection for the mating surface:
 - (a) Apply a layer of Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 to the surfaces that follow:
 - 1) The opening for the coaxial cable connector [3].
 - 2) The nutplates.
 - 3) The threads and shank of each bolt [2].
 - (b) Apply a very thin layer of Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 on the mating surface of the ELT antenna [1]:
 - 1) Make sure you apply Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 on the pressurized and the not pressurized surfaces adjacent to the O-ring.
 - 2) Do not get Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 on the O-ring or in the O-ring groove.
 - 3) Do not get Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 on the coaxial cable connector [3].

G. Installation Procedure

SUBTASK 23-24-02-420-002

- (1) Install the ELT antenna [1]:
 - (a) Examine the coaxial cable connector [3] for dirt and damage.
 - (b) Connect the coaxial cable connector [3] to the ELT antenna [1].
 - (c) Put the ELT antenna [1] in its position and install 5 of the 6 bolts [2]. Refer to Standard Torque Values, TASK 20-11-00-910-801.

NOTE: Leave one of the 6 bolts [2] out to do an electrical bond check.

SUBTASK 23-24-02-700-001

- (2) Measure the resistance between the ELT antenna baseplate and the airplane skin with an intrinsically safe approved bonding meter, COM-1550 (SWPM 20-20-00).

NOTE: Use the empty bolt hole to get access to the antenna baseplate.

- (a) Make sure the resistance is 0.025 ohms or less.

SUBTASK 23-24-02-420-003

- (3) Install the last bolt [2]. Refer to Standard Torque Values, TASK 20-11-00-910-801.

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SUBTASK 23-24-02-110-002



USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.



DO NOT GET THIS MATERIAL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THIS MATERIAL. PUT ON A RESPIRATOR, EYE PROTECTION (GOGGLES, OR OTHER APPROVED PROTECTION), AND GLOVES BEFORE YOU USE THIS MATERIAL. MAKE SURE THAT THERE IS SUFFICIENT AIRFLOW. KEEP THIS MATERIAL AWAY FROM SPARKS, FLAME, AND HEAT. THIS MATERIAL CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (4) If Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 is around the edge of the flange, or is on the bolt heads, clean the surfaces with Series 84 solvent, B01004 (TASK 20-30-84-910-801) until all the Cor-Ban 27L Compound, G50237 or Mastinox 6856 K, C00913 is removed.

NOTE: Sealant will not bond to the compound.

SUBTASK 23-24-02-390-001

- (5) Apply sealant, A02315 around the flange of the ELT antenna to make an aerodynamic seal (TASK 51-31-01-390-806).

NOTE: Operators can defer the application of the aero-sealant in the antenna installation to avoid a flight delay (SL 20-016).

- (a) Use a hardwood or plastic fillet smoothing spatula, STD-810 to make an aerodynamic ramp seal at the leading edge of the flange.

NOTE: Make sure you make the aerodynamic ramp seal before you make the weather fillet seal.

- 1) Start the ramp seal 0.50 to 0.60 inches forward of the flange.
- 2) Keep the width of the ramp seal constant.

- (b) Apply a weather fillet seal around the remaining edge of the flange.

SUBTASK 23-24-02-390-002

- (6) Apply a layer of sealant, A02315 on the surface of the six bolts [2].

H. Installation Test

SUBTASK 23-24-02-720-001

- (1) Do this task: Emergency Locator Transmitter (ELT) System - System Test, TASK 23-24-00-730-804-006.

————— END OF TASK —————

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EMERGENCY LOCATOR TRANSMITTER (ELT) CONTROL PANEL - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

- (1) A removal of the emergency locator transmitter (ELT) control panel.
- (2) An installation of the ELT control panel.

TASK 23-24-03-000-801

2. Emergency Locator Transmitter Control Panel Removal

A. References

Reference	Title
23-24-01 P/B 201 Config 3	EMERGENCY LOCATOR TRANSMITTER - MAINTENANCE PRACTICES
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)
25-21-07-000-801	Lowered Ceiling Panel Removal (P/B 401)

B. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

C. Removal Procedure

SUBTASK 23-24-03-000-001

- (1) Do these steps:

Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
F	4	C33410	OVHD INST & PNL LTS/FWD PNL FLOOD LTS

SUBTASK 23-24-03-000-002

- (2) Open the access panel to get access to the ELT (TASK 25-21-07-000-801 or TASK 25-21-06-000-801).

NOTE: For the location of the ELT, refer to the ELT Removal/Installation procedure (PAGEBLOCK 23-24-01/201 Config 3).

SUBTASK 23-24-03-000-003

- (3) On the ELT front panel, do the steps that follow:

NOTE: These steps will prevent accidental activation of the ELT when the ELT Control Panel [1] is removed.

- (a) Set the toggle switch to the OFF position.
- (b) Disconnect the electrical connector.

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SUBTASK 23-24-03-000-004



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE ELT CONTROL PANEL. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ELT CONTROL PANEL.

- (4) Remove the ELT Control Panel [1]:
- (a) Release the Fasteners [2] on the front of the unit.
 - (b) Pull the ELT Control Panel [1] carefully until you get access to the Electrical Connector [3] on the rear of the ELT Control Panel [1].
 - (c) Disconnect the Electrical Connector [3].
 - (d) Put a protective cover on the Electrical Connector [3].

————— **END OF TASK** —————

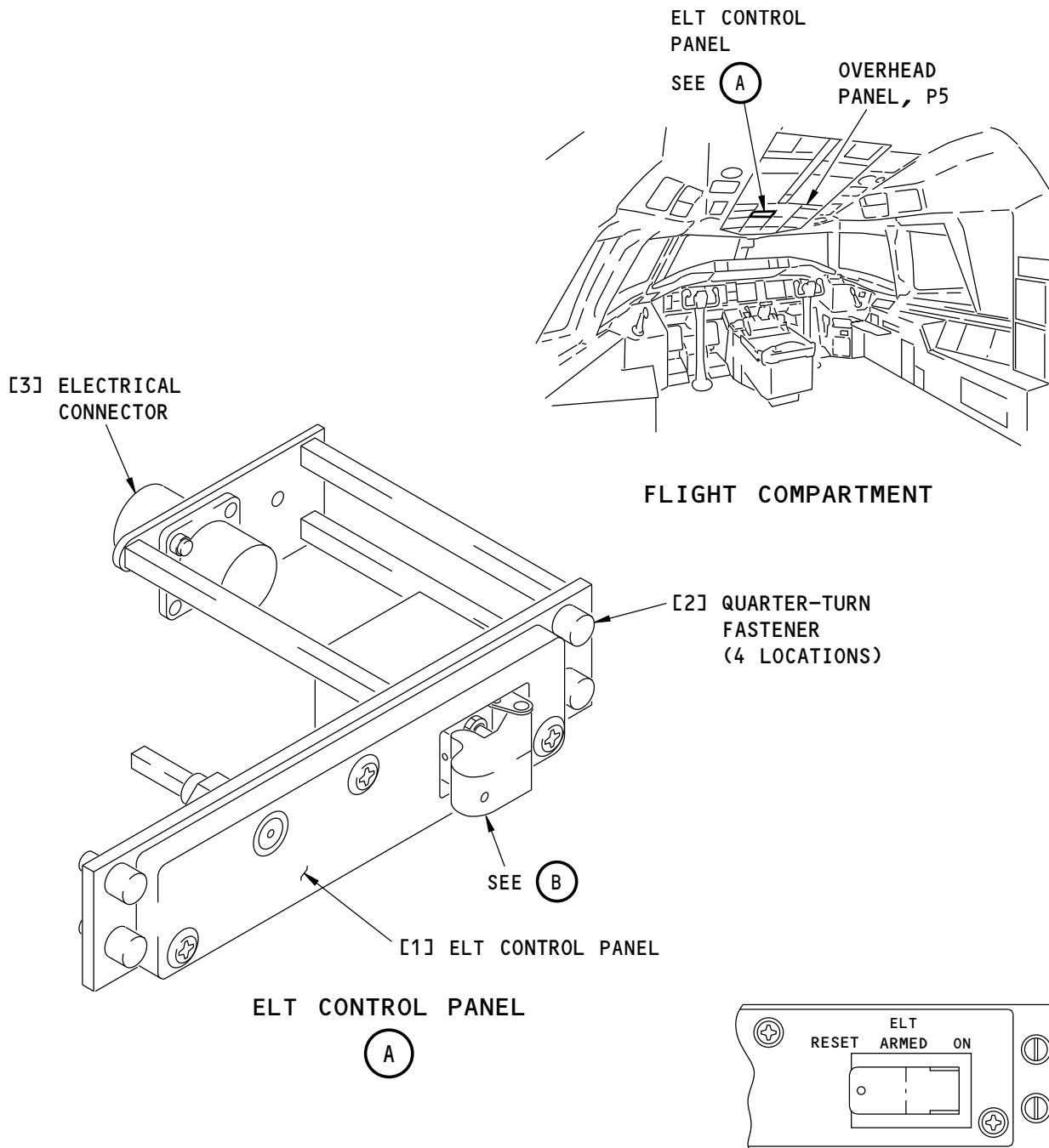
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ELT Control Panel Installation
Figure 401/23-24-03-990-801

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TASK 23-24-03-400-801

3. Emergency Locator Transmitter Control Panel Installation

A. References

Reference	Title
23-24-00-730-804-006	Emergency Locator Transmitter (ELT) System - System Test (P/B 501)
23-24-01 P/B 201 Config 3	EMERGENCY LOCATOR TRANSMITTER - MAINTENANCE PRACTICES
24-22-00-860-806	Remove Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
25-21-07-400-801	Lowered Ceiling Panel Installation (P/B 401)

B. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
263	Area Above Passenger Compartment Ceiling, Left - Section 47
264	Area Above Passenger Compartment Ceiling, Right - Section 47

C. Installation Procedure

SUBTASK 23-24-03-400-001



CAUTION DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE ELT CONTROL PANEL. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ELT CONTROL PANEL.

- (1) Do these steps to install the ELT Control Panel [1]:
 - (a) Remove the protective cover from the Electrical Connector [3].
 - (b) Examine the Electrical Connector [3] for loose, bent or broken pins.
 - (c) Connect the Electrical Connector [3] to the ELT Control Panel [1].
 - (d) Put the ELT Control Panel [1] carefully into the overhead panel.
 - (e) Lock the Fasteners [2] on the front of the ELT Control Panel [1].

SUBTASK 23-24-03-400-003

- (2) Get access to the ELT.

NOTE: For the location of the ELT, refer to the ELT Removal/Installation procedure (PAGEBLOCK 23-24-01/201 Config 3).

SUBTASK 23-24-03-860-001

- (3) On the ELT front panel, do these steps:
 - (a) Connect the electrical connector.

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- (b) Set the toggle switch to the ARMED position.

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SUBTASK 23-24-03-400-002

- (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>
F	4	C33410	OVHD INST & PNL LTS/FWD PNL FLOOD LTS

D. ELT Installation Test

SUBTASK 23-24-03-710-001

- (1) Do this task:Emergency Locator Transmitter (ELT) System - System Test, TASK 23-24-00-730-804-006.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 23-24-03-410-001

- (1) Close the access panel for the ELT (TASK 25-21-07-400-801 or TASK 25-21-06-400-801).

SUBTASK 23-24-03-860-002

- (2) Remove the electrical power from the airplane, if it is not necessary for other tasks (TASK 24-22-00-860-806).

————— END OF TASK —————

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DATA COMMUNICATIONS MANAGEMENT FUNCTION (DCMF) - ADJUSTMENT/TEST

1. General

- A. This procedure has these tasks:
- (1) A system test of the data communications management function.

TASK 23-27-00-740-801

2. Data Communications Management Function - System Test

A. General

- (1) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
212	Flight Compartment, Right

D. Procedure

SUBTASK 23-27-00-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-27-00-740-001

- (2) Use a maintenance access terminal (MAT) to make sure there are no maintenance messages for the data communication management function:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - (b) Look for 31 AIMS - Left AIMS

NOTE: If 31 AIMS - Left AIMS does not show, then there are no maintenance messages in existing faults for the radio tuning panels, HF transceiver, VHF transceiver, satellite data unit, cabin file server, printer.
 - (c) If 31 AIMS - Left AIMS shows, do this:
 - 1) Select 31 AIMS - Left AIMS
 - 2) Select CONTINUE.
 - 3) Look at the maintenance messages that show and make sure these messages do not show: 31-69921, 31-69923, 31-69925, 31-69915, 31-69919, 31-69917, 31-69911, 31-69913, 31-69931, 31-69941.
 - 4) Refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

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SUBTASK 23-27-00-740-002

- (3) Use a maintenance access terminal (MAT) to make sure there are no maintenance messages for the data communication management function:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - (b) Look for 31 AIMS - Right AIMS
NOTE: If 31 AIMS - Right AIMS does not show, then there are no maintenance messages in existing faults for the radio tuning panels, HF transceiver, VHF transceiver, satellite data unit, cabin file server, printer.
 - (c) If 31 AIMS - Right AIMS shows, do this:
 - 1) Select 31 AIMS - Right AIMS
 - 2) Select CONTINUE.
 - 3) Look at the maintenance messages that show and make sure these messages do not show: 31-69922, 31-69924, 31-69926, 31-69916, 31-69920, 31-69918, 31-69912, 31-69914, 31-69932, 31-69942.
 - 4) Refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

SUBTASK 23-27-00-740-003

- (4) Use a maintenance access terminal (MAT) to make sure there are no maintenance messages for the data communication management function:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - (b) Look for 23 Radio Tuning Panel
NOTE: If 23 Radio Tuning Panel does not show, then there are no maintenance messages in existing faults for the radio tuning panels.
 - (c) If 23 Radio Tuning Panel shows, do this:
 - 1) Select 23 Radio Tuning Panel
 - 2) Select CONTINUE.
 - 3) Look at the maintenance messages that show and make sure these messages do not show: 23-52001, 23-52002, 23-52003, 23-52891, 23-52892, 23-52893.
 - 4) Refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

SUBTASK 23-27-00-740-004

- (5) Use a maintenance access terminal (MAT) to make sure there are no maintenance messages for the data communication management function:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE

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- 3) EXISTING FAULTS
- (b) Look for 23 VHF Communication System
NOTE: If 23 VHF Communication System does not show, then there are no maintenance messages in existing faults for the VHF transceivers.
- (c) If 23 VHF Communication System shows, do this:
 - 1) Select 23 VHF Communication System
 - 2) Select CONTINUE.
 - 3) Look at the maintenance messages that show and make sure these messages do not show: 23-53891, 23-53892, 23-53893.
 - 4) Refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

SUBTASK 23-27-00-740-005

- (6) Use a maintenance access terminal (MAT) to make sure there are no maintenance messages for the data communication management function:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - (b) Look for 23 HF Communication System
NOTE: If 23 HF Communication System does not show, then there are no maintenance messages in existing faults for the HF transceivers.
 - (c) If 23 HF Communication System shows, do this:
 - 1) Select 23 HF Communication System
 - 2) Select CONTINUE.
 - 3) Look at the maintenance messages that show and make sure these messages do not show: 23-51891, 23-51892.
 - 4) Refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

SUBTASK 23-27-00-740-006

- (7) Use a maintenance access terminal (MAT) to make sure there are no maintenance messages for the data communication management function:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - (b) Look for 23 Satellite Communication (SATCOM) System
NOTE: If 23 HF Communication System does not show, then there are no maintenance messages in existing faults for the Left SDU.
 - (c) If 23 Satellite Communication (SATCOM) System shows, do this:
 - 1) Select 23 Satellite Communication (SATCOM) System
 - 2) Select CONTINUE.

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- 3) Look at the maintenance messages that show and make sure this message does not show: 23-68801.
- 4) Refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

SUBTASK 23-27-00-740-008

- (8) Use a maintenance access terminal (MAT) to make sure there are no maintenance messages for the data communication management function:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) EXTENDED MAINTENANCE
 - 3) EXISTING FAULTS
 - (b) Look for 31 Printer

NOTE: If 31 Printer does not show, then there are no maintenance messages in existing faults for the printer.
 - (c) If 31 Printer shows, do this:
 - 1) Select 31 Printer
 - 2) Select CONTINUE.
 - 3) Look at the maintenance messages that show and make sure this message does not show: 31-31891.
 - 4) Refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

————— **END OF TASK** —————

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PASSENGER ADDRESS SYSTEM - MAINTENANCE PRACTICES

1. General

- A. This procedure has these tasks:
- (1) Passenger Address System Deactivation.
 - (2) Passenger Address System Activation.

TASK 23-31-00-040-801

2. Passenger Address System - Deactivation

A. **General**

- (1) This task removes electrical power to the Passenger Address System.

NOTE: Removal of electrical power to the Passenger Address System also removes electrical power to the Cabin Interphone System.

B. **Location Zones**

<u>Zone</u>	<u>Area</u>
117	Main Equipment Center, Left
118	Main Equipment Center, Right
211	Flight Compartment, Left
212	Flight Compartment, Right
221	Passenger Compartment, Left - Section 41
231	Passenger Compartment, Left - Section 43
241	Passenger Compartment, Left - Section 44
251	Passenger Compartment, Left - Section 46
261	Passenger Compartment, Left - Section 47

C. **Access Panels**

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

D. **Procedure**

SUBTASK 23-31-00-010-001

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-31-00-860-023

- (2) 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>
A	16	C23400	CAB SYS MGMT UNIT

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	5	C33628	PAX MASTER CALL LT

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Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C23653	CAB INTPH ZMU 1 & 3
E	8	C23654	CAB INTPH ZMU 2 & 4
E	9	C23652	SDM COL 5
F	6	C23632	PAX ADRS CTRL PRI
F	7	C23633	PAX ADRS CTRL SEC
F	8	C23637	PA DIR ACCESS
F	9	C23634	SDM COL 1
F	10	C23635	SDM COL 2
F	12	C23638	CAB INTPH PRI
F	13	C23639	CAB INTPH SEC

This circuit breaker is inoperative and should remain open:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	10	C23659	UPR MDL SDM (INOP)

E. Passenger Address System - Tryout

NOTE: This tryout is to make sure the Passenger Address System is in a zero energy state.

SUBTASK 23-31-00-860-024

- (1) Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C23400	CAB SYS MGMT UNIT

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	5	C33628	PAX MASTER CALL LT

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C23653	CAB INTPH ZMU 1 & 3
E	8	C23654	CAB INTPH ZMU 2 & 4
E	9	C23652	SDM COL 5
F	6	C23632	PAX ADRS CTRL PRI
F	7	C23633	PAX ADRS CTRL SEC
F	8	C23637	PA DIR ACCESS
F	9	C23634	SDM COL 1
F	10	C23635	SDM COL 2
F	11	C23636	SDM COL 3
F	12	C23638	CAB INTPH PRI
F	13	C23639	CAB INTPH SEC

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This circuit breaker is inoperative and should remain open:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	10	C23659	UPR MDL SDM (INOP)

SUBTASK 23-31-00-700-002

(2) At the Cabin System Control Panel (CSCP), make the following selections:

- (a) CABIN MAINTENANCE
- (b) CABIN TESTS
- (c) START ALL TEST
- (d) CONTINUE

SUBTASK 23-31-00-700-003

(3) At the ALL TEST FAULTS REVIEW screen, on the CSCP, make the following selections:

- (a) ALL UNITS
- (b) CONTINUE
- (c) Make sure the following maintenance messages show:
 - 1) 23-01410
 - 2) 23-01610

————— END OF TASK —————

TASK 23-31-00-440-801

3. Passenger Address System - Activation

A. General

(1) This task adds electrical power to the Passenger Address System.

NOTE: Restoring electrical power to the Passenger Address System also restores electrical power to the Cabin Interphone System.

B. Location Zones

<u>Zone</u>	<u>Area</u>
117	Main Equipment Center, Left
118	Main Equipment Center, Right
211	Flight Compartment, Left
212	Flight Compartment, Right
221	Passenger Compartment, Left - Section 41
231	Passenger Compartment, Left - Section 43
241	Passenger Compartment, Left - Section 44
251	Passenger Compartment, Left - Section 46
261	Passenger Compartment, Left - Section 47

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C. Procedure

SUBTASK 23-31-00-860-025

- (1) 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>
A	16	C23400	CAB SYS MGMT UNIT

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	5	C33628	PAX MASTER CALL LT

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C23653	CAB INTPH ZMU 1 & 3
E	8	C23654	CAB INTPH ZMU 2 & 4
E	9	C23652	SDM COL 5
F	6	C23632	PAX ADRS CTRL PRI
F	7	C23633	PAX ADRS CTRL SEC
F	8	C23637	PA DIR ACCESS
F	9	C23634	SDM COL 1
F	10	C23635	SDM COL 2
F	11	C23636	SDM COL 3
F	12	C23638	CAB INTPH PRI
F	13	C23639	CAB INTPH SEC

This circuit breaker is inoperative and should remain open:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	10	C23659	UPR MDL SDM (INOP)

SUBTASK 23-31-00-700-004

- (2) At the ALL TEST FAULTS REVIEW screen, on the CSCP, make sure the following maintenance messages no longer show:
- (a) 23-01410
 - (b) 23-01610

————— END OF TASK —————

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PASSENGER ADDRESS SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) A software configuration check of the passenger address (PA) System.
 - (2) An operational test of the PA system.
 - (3) A system test of the PA System.
 - (4) A functional check of the PA System.
 - (5) An alternate channel operational check of the PA system.
 - (6) A direct access switch operational check of the PA system.
- C. The PA System lets the flight crew and cabin crew speak to all the passengers.

TASK 23-31-00-700-801

2. Passenger Address System - Software Configuration Check

A. General

- (1) This software configuration check will show the applicable software for the Passenger Address System LRUs.

B. References

Reference	Title
23-39-00-700-802	Operational Program Software and Database Verification Test (P/B 201)
23-39-00-700-804	Operational Program Software and Database Verification Test (P/B 201)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Procedure

SUBTASK 23-31-00-700-001

- (1) Do a software configuration check.

NOTE: Do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-802 or Operational Program Software and Database Verification Test, TASK 23-39-00-700-804

————— **END OF TASK** —————

TASK 23-31-00-710-801

3. Passenger Address System - Operational Test

A. General

- (1) This operational test gives a quick check of the Passenger Address (PA) System.
- (2) The Cabin System Control Panel (CSCP) is necessary for this procedure.

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

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C. Procedure

SUBTASK 23-31-00-740-001

- (1) Use the Cabin System Control Panel (CSCP) to do the Quick Test:
 - (a) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE
 - 2) CABIN TESTS
 - 3) START QUICK TEST
 - 4) CONTINUE TEST
 - (b) Make sure that NO FAULTS shows on the CSCP when the test is completed.
NOTE: Approximately 20 seconds are necessary to complete the quick test. If a failure occurs, the CSCP will show the QUICK TEST FAULTS REVIEW menu.
 - (c) If a failure does occur, make sure it is not for one of these LRUs:
NOTE: If there are no failures for the LRU, the LRU selection on the CSCP display is gray.
 - 1) Controllers
 - 2) Speaker drive modules.

————— END OF TASK —————

TASK 23-31-00-730-801

4. Passenger Address System - System Test

A. General

- (1) The system test for the passenger address (PA) system includes:
 - (a) Passenger Address BITE Test
 - (b) Attendant PA Announcement Test through Cabin Interphone System
 - (c) Attendant PA Announcement Test through Direct Access
 - (d) Pilot Announcement Test through DCAS
 - (e) PA Alternate System Test.
 - (f) PA Override Test.

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Passenger Address BITE Test

SUBTASK 23-31-00-740-002

- (1) Use the CSCP to do the All Test:
 - (a) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE
 - 2) CABIN TESTS
 - 3) START ALL TEST
 - 4) CONTINUE TEST.

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- (b) Make sure that NO FAULTS shows on the CSCP when the test is complete.
- NOTE: Approximately 2 minutes are necessary to complete the test. If a failure occurs, the CSCP will show the ALL TEST FAULTS REVIEW menu.
- NOTE: Wait 3 minutes after the test is complete before you do any other maintenance action. Most of the line replaceable units (LRUs) in the Cabin Services System (CSS) and Mood Lighting System (MLS) will go through rebooting or re-initializing process, which takes approximately 3 minutes to complete.
- (c) If a failure does occur, make sure it is not for one of these LRUs:
- NOTE: If there are no failures for the LRU, the LRU selection on the CSCP display is gray.
- 1) Controllers
 - 2) Handsets
 - 3) Speaker drive modules
 - 4) Speakers.

D. PA Announcement Test through the Cabin Interphone System:

SUBTASK 23-31-00-730-020

- (1) Turn on the video system:
- (a) Touch the applicable selections on the IFE control panel to turn on the video system.
 - (b) Make sure you hear the video audio from the speakers.

SUBTASK 23-31-00-730-004

- (2) Do the attendant PA announcement test through the cabin interphone system:
- (a) Remove one of the attendant handsets from its cradle.
 - 1) Make sure that you hear a dial tone on the handset.
 - (b) Push the code for PA ALL on the handset.

NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Push and hold the PTT button on the handset.
 - 1) Make sure the video audio stops immediately.
 - 2) Make sure the passenger video displays pause or go blank.
 - (d) Speak into the handset microphone.
 - 1) Make sure that you hear your voice clearly from the speakers.
 - (e) Put the handset back into its cradle.
 - 1) Make sure you hear the video audio again.

E. PA Announcement Test through the Direct Access

SUBTASK 23-31-00-730-005

- (1) Do the direct access audio test:
- (a) Make sure you still hear the video audio from the speakers.
 - (b) Remove a handset from its cradle.

NOTE: Do not use a handset that has the PA switch. You will use the handset with the PA switch later in this test.

 - 1) Make sure you hear a dial tone on the handset.

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- 2) Push the code for PA ALL on the handset.
NOTE: The dial code directory is on the back of the attendant handset.
- 3) Push and hold the PTT button.
- 4) Make sure the video audio stops immediately.
- 5) Make sure the passenger video displays pause or go blank.
- 6) Speak into the handset microphone.
- 7) Make sure you hear your voice clearly from the speakers.
- 8) Continue to speak into the handset microphone.
- (c) Remove the door 1 left handset from its cradle.
 - 1) Make sure you hear the dial tone.
 - 2) Push the PA switch on the cradle.
 - 3) Make sure the PA light comes on.
 - 4) Make sure the dial tone stops.
- (d) While you push the PTT button, speak into the handset at door 1 left.
 - 1) Make sure that the voice from door 1 left handset replaces the voice from the other handset.
- (e) Release the PTT buttons.
 - 1) Make sure that you hear the video audio again.
- (f) Put the handsets back into their cradles.

SUBTASK 23-31-00-730-015

- (2) Do the direct access audio test again, from the Door 2 Left handset.

SUBTASK 23-31-00-730-009

- (3) Do the direct access audio test again, from the Door 4 Left handset.

F. Pilot PA Announcement Test through the DCAS

SUBTASK 23-31-00-730-007

- (1) Do the pilot PA announcement test through the DCAS:
 - (a) Connect the boom microphone headset to the captain's jack panel.
 - (b) Adjust the PA volume control to middle position on the captain's audio control panel (ACP).
 - (c) Remove the door 1 left handset from its cradle.
 - 1) Push the PA switch on the cradle.
 - 2) Make sure the PA switch light comes on.
 - 3) Push and hold the PTT button on the handset.
 - 4) Speak into the handset microphone.
 - 5) Make sure you hear your voice from the speakers.
 - 6) Continue to speak into the handset microphone.
 - (d) Push the PA microphone selector button on the captain's ACP.
 - 1) Push and hold the MIC/INT PTT switch to the MIC position on the captain's ACP.
 - 2) Speak into the boom microphone.

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- 3) Make sure that the voice from the boom microphone replaces the voice from the door 1 handset.
- 4) Make sure you hear the voice clearly.
- (e) Release the PTT switch on the captain's ACP.
- (f) Put the door 1 handset back into its cradle.

G. PA Alternate System Test

SUBTASK 23-31-00-730-008

- (1) Do the PA alternate system test:
 - (a) Remove the attendant handset at door 2 left from its cradle.
 - 1) Make sure that you hear a dial tone on the handset.
 - (b) Push the code for PA ALL on the handset.

NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Push and hold the PTT button on the handset.
 - (d) Speak into the handset microphone.
 - (e) Make sure that you hear your voice clearly from the speakers.
 - (f) Continue to speak into the handset microphone.
 - (g) Push the PA NORM/ALT switch on the attendant switch panel.
 - 1) Make sure the light on the PA NORM/ALT switch is on.

NOTE: The PA NORM/ALT light is on when the PA controller operates on the alternate side.
 - 2) Make sure that your voice can not be heard from the speakers for a few seconds.
 - 3) After a few seconds, make sure that you hear your voice from the speakers again.
 - (h) Push the PA NORM/ALT switch.
 - 1) Make sure the light on the PA NORM/ALT switch goes off.
 - (i) Put the handset back into its cradle.

H. PA Override Test

SUBTASK 23-31-00-730-028

- (1) Do the PA Override test for each of the following areas:
 - (a) FIRST PA AREA (PA Forward) in the main cabin.
 - (b) SECOND PA AREA (PA Main) in the main cabin.
 - (c) THIRD PA AREA (OFCR) if equipped.
 - (d) FOURTH PA AREA (OFAR) if equipped.
- (2) PA Override Test.
 - (a) Connect a headphone to a PCU at a seat.
 - (b) Remove the attendant handset at door 1 left from its cradle.
 - (c) Make sure that you hear a dial tone on the handset.
 - (d) Push the two digit dial code that corresponds to the area.

NOTE: The dial code directory is on the back of the attendant handset.
 - (e) Push and hold the PTT button on the handset.
 - (f) Speak into the handset microphone.

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- 1) Make sure that the voice is heard clearly through the speakers.
- 2) Make sure that the voice is heard clearly on the headphone.
- (g) Put the handset back into its cradle.
- (h) Remove the headphone from the PCU.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 23-31-00-860-006

- (1) Touch the applicable selections on the IFE control panel to turn off the video system.

————— END OF TASK —————

TASK 23-31-00-720-801

5. Passenger Address (PA) System Functional Check

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) This procedure does a functional check of the Passenger Address (PA) System.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1616	Meter - Sound Level
	Part #: 1565-9911 Supplier: 088V6
	Part #: CEL-240/K1 Supplier: 01RN5
	Part #: SE-402-AC3 Supplier: 1QDV5
	Opt Part #: 2100-10 Supplier: 90435
	Opt Part #: 2400-10 Supplier: 90435
	Opt Part #: CEL-254/K1 Supplier: 01RN5

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Prepare for the Test

NOTE: This task is for scheduled maintenance.

SUBTASK 23-31-00-840-001

- (1) Turn on the noise generator for the PA System:



WARNING

THIS TEST CAUSES HIGH VOLUME LEVELS IN THE PASSENGER CABIN AND IN THE FLIGHT DECK. YOU SHOULD USE HEARING PROTECTION. THE HIGH VOLUME LEVELS CAN DAMAGE YOUR HEARING.

- (a) Touch these selections on the Cabin System Control Panel (CSCP):
 - 1) CABIN MAINTENANCE
 - 2) CABIN TESTS
 - 3) ENGINEERING TESTS
 - 4) COMMANDED OUTPUT

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5) SPEAKER DRIVE MODULE (SDM)

- (b) Touch the selection on the CSCP for all SDM columns.
- (c) Touch the selection for all SDMs.
- (d) Touch ON for SPEAKER 1.
- (e) Touch ON for SPEAKER 2.
- (f) Touch ON for SPEAKER 3.
- (g) Touch ON for SPEAKER 4.

E. Procedure

SUBTASK 23-31-00-720-001

(1) Do the PA speaker volume test for the main deck speakers:

- (a) Hold the sound level meter, COM-1616 approximately one foot below the first main deck speaker.

NOTE: You must hold the sound level meter, COM-1616 the same distance below the other speakers. If you don't hold the tip of the sound level meter, COM-1616 the same distance, the test will fail.

- (b) Make a record of the reading on the sound level meter, COM-1616.
- (c) Move the sound level meter, COM-1616 to the next main deck speaker.
- (d) Make sure that the sound level meter, COM-1616 reads ± 3 dB from the first main deck speaker.
- (e) Replace the speaker if the readings are outside the identified range.
- (f) Repeat the sound level check for all the main deck speakers.

SUBTASK 23-31-00-720-002

(2) Do the PA speaker volume test for the overdoor speakers.

- (a) Hold the sound level meter, COM-1616 approximately one foot below the first overdoor speaker.

NOTE: You must hold the sound level meter, COM-1616 the same distance below the other speakers. If you don't hold the tip of the sound level meter, COM-1616 the same distance, the test will fail.

- (b) Make a record of the reading on the sound level meter, COM-1616.
- (c) Move the sound level meter, COM-1616 to the next overdoor speaker.
- (d) Make sure that the sound level meter, COM-1616 reads ± 3 dB from the first overdoor speaker.
- (e) Replace the speaker if the readings are outside the identified range.
- (f) Repeat the sound level check for all the overdoor speakers.

SUBTASK 23-31-00-720-003

(3) Do the PA speaker volume test for the galley speakers.

- (a) Hold the sound level meter, COM-1616 approximately one foot below the first galley speaker.

NOTE: You must hold the sound level meter, COM-1616 the same distance below the other speakers. If you don't hold the tip of the sound level meter, COM-1616 the same distance, the test will fail.

- (b) Make a record of the reading on the sound level meter, COM-1616.

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- (c) Move the sound level meter, COM-1616 to the next galley speaker.
- (d) Make sure that the sound level meter, COM-1616 reads ± 3 dB from the first galley speaker.
- (e) Replace the speaker if the readings are outside the identified range.
- (f) Repeat the sound level check for all the galley speakers.

SUBTASK 23-31-00-720-004

- (4) Do the PA speaker volume test for the lavatory speakers.
 - (a) Hold the sound level meter, COM-1616 approximately one foot below the first lavatory speaker.

NOTE: You must hold the sound level meter, COM-1616 the same distance below the other speakers. If you don't hold the tip of the sound level meter, COM-1616 the same distance, the test will fail.
 - (b) Make a record of the reading on the sound level meter, COM-1616.
 - (c) Move the sound level meter, COM-1616 to the next lavatory speaker.
 - (d) Make sure that the sound level meter, COM-1616 reads ± 3 dB from the first lavatory speaker.
 - (e) Replace the speaker if the readings are outside the identified range.
 - (f) Repeat the sound level check for all the lavatory speakers.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-31-00-840-002

- (1) Turn off the noise generator for the PA System:
 - (a) Touch RESET ALL on the CSCP.

NOTE: Touch RESET ALL, not OFF, to make sure that you leave the commanded output mode at the end of the test.
 - (b) Touch MAIN MENU.
 - (c) Touch CONTINUE SELECTION.

————— END OF TASK —————

TASK 23-31-00-710-802

6. Passenger Address (PA) System Alternate Channel Operational Check

NOTE: This procedure is a scheduled maintenance task.

A. Location Zones

Zone	Area
221	Passenger Compartment, Left - Section 41

B. Procedure

SUBTASK 23-31-00-710-001

- (1) Do the PA alternate system test:
 - (a) Push the code for PA ALL on the handset.

NOTE: The dial code directory is on the back of the attendant handset.
 - (b) Push and hold the PTT button on the handset.
 - (c) Speak into the handset microphone.
 - (d) Make sure that you hear your voice clearly from the speakers.

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- (e) Continue to speak into the handset microphone.
- (f) Push the PA NORM/ALT switch on the attendant switch panel.
 - 1) Make sure the light on the PA NORM/ALT switch is on.
NOTE: The PA NORM/ALT light is on when the PA controller operates on the alternate side.
 - 2) Make sure that your voice can not be heard from the speakers for a few seconds.
 - 3) After a few seconds, make sure that you hear your voice from the speakers again.
- (g) Push the PA NORM/ALT switch.
 - 1) Make sure the light on the PA NORM/ALT switch goes off.
- (h) Put the handset back into its cradle.

———— **END OF TASK** ————

TASK 23-31-00-710-803

7. Passenger Address Direct Access Switch Operational Check

NOTE: This procedure is a scheduled maintenance task.

A. Location Zones

Zone	Area
200	Upper Half of Fuselage

B. Procedure

NOTE: This task is for scheduled maintenance.

SUBTASK 23-31-00-710-002

- (1) Do the direct access audio test:
 - (a) Remove a handset from its cradle.
NOTE: Do not use a handset that has the PA switch. You will use the handset with the PA switch later in this test.
 - 1) Make sure you hear a dial tone on the handset.
 - (b) Push the code for PA ALL on the handset.
NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Push and hold the PTT button.
 - (d) Speak into the handset microphone.
 - 1) Make sure you hear your voice clearly from the speakers.
 - (e) Continue to speak into the handset microphone.
 - (f) Remove the door 1 left handset from its cradle.
 - 1) Make sure you hear the dial tone.
 - (g) Push the PA switch on the cradle.
 - 1) Make sure the PA light comes on.
 - 2) Make sure the dial tone stops.
 - (h) While you push the PTT button, speak into the door 1 left handset.
 - 1) Make sure that the voice from door 1 left handset replaces the voice from the other handset.
 - (i) Release the PTT button.

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- (j) Put the handsets back into their cradles.

SUBTASK 23-31-00-710-005

- (2) Do the direct access audio test again, from the Door 2 Left handset.

SUBTASK 23-31-00-710-004

- (3) Do the direct access audio test again, from the Door 4 Left handset.

———— **END OF TASK** ————

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SPEAKER DRIVE MODULE - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) The removal of a speaker drive module (SDM)
 - (2) The installation of an SDM.
- B. The SDM is above the cabin ceiling panel on the left side of the center stow bin ladder assembly. You must remove the inboard ceiling panel to get access to an SDM.
- C. These removal and installation tasks are the same for all SDMs.

TASK 23-31-02-000-801

2. Speaker Drive Module (SDM) Removal

(Figure 401)

A. **General**

- (1) This procedure removes the Speaker Drive Module (SDM).

B. **References**

Reference	Title
20-41-01-000-802	Conductive Dust Cap and Connector Cover Installation (P/B 201)
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)
SSM 23-31-20	System Schematics Manual
SSM 23-31-30	System Schematics Manual
SSM 23-31-40	System Schematics Manual
SSM 23-31-60	System Schematics Manual

C. **Location Zones**

Zone	Area
223	Area Above Passenger Compartment Ceiling, Left - Section 41
233	Area Above Passenger Compartment Ceiling, Left - Section 43
243	Area Above Passenger Compartment Ceiling, Left - Section 44
253	Area Above Passenger Compartment Ceiling, Left - Section 46
263	Area Above Passenger Compartment Ceiling, Left - Section 47

D. **Removal Procedure**

SUBTASK 23-31-02-860-002

- (1) For an SDM [1] in column 1 ;
Open this circuit breaker and install safety tag:
(SSM 23-31-20)

Standby Power Management Panel, P310

Row	Col	Number	Name
F	9	C23634	SDM COL 1

SUBTASK 23-31-02-860-003

- (2) For an SDM [1] in column 2 ;
Open this circuit breaker and install safety tag:
(SSM 23-31-30)

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Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C23635	SDM COL 2

SUBTASK 23-31-02-860-004

- (3) For an SDM [1] in column 3 ;
Open this circuit breaker and install safety tag:
(SSM 23-31-40)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C23636	SDM COL 3

ARO ALL; 777-300

SUBTASK 23-31-02-860-017

- (4) For an SDM [1] in column 4 ;
Open this circuit breaker and install safety tag:
(SSM 23-31-60)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

ARO ALL

SUBTASK 23-31-02-010-001

- (5) To get access to the SDM [1], do this task: Main Ceiling Panel - Removal,
TASK 25-21-06-000-801.

SUBTASK 23-31-02-020-001

- (6) Remove the SDM [1]:



CAUTION

DO NOT TOUCH THE CONDUCTOR PINS OR OTHER CONDUCTORS ON THE SDM. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE SDM.

- (a) Disconnect the electrical connectors [2], [4], and [7].
(b) While you hold the SDM [1] in position, remove the screws [5] and washers [6] from the SDM [1].
(c) Remove the SDM [1] from the bracket [3].
(d) Do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-41-01-000-802.

————— END OF TASK —————

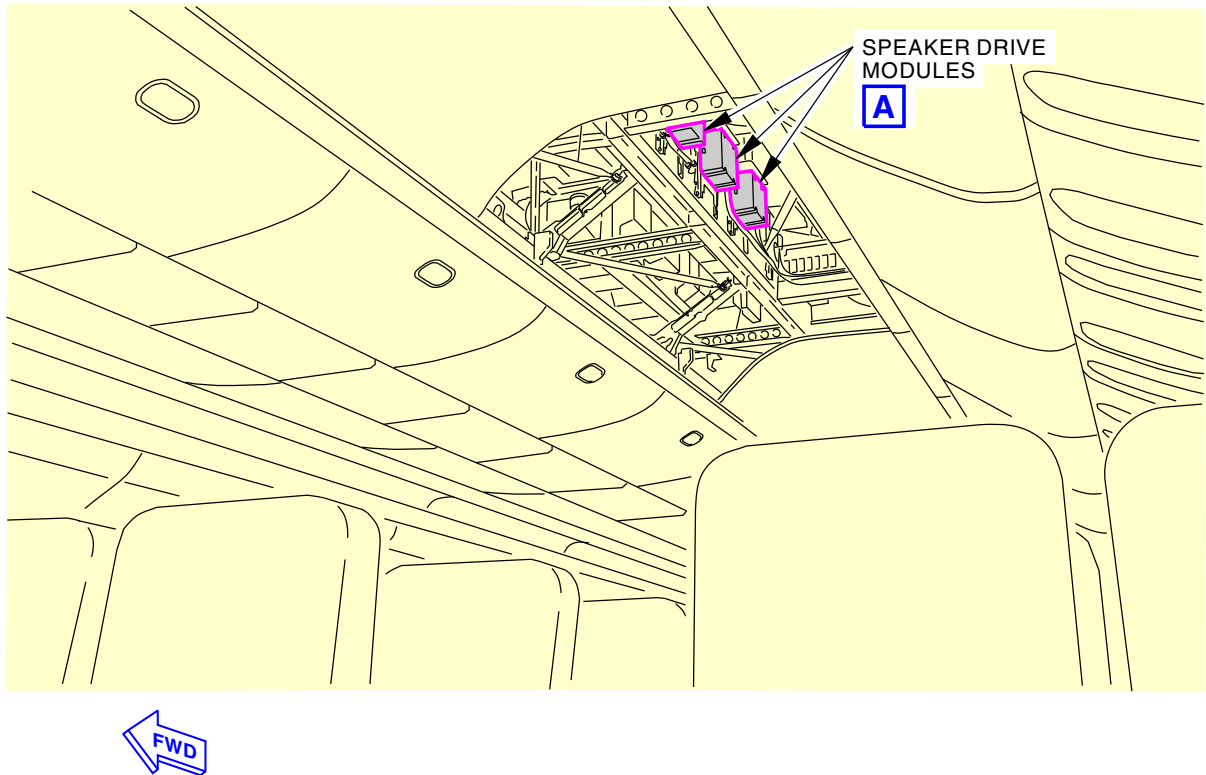
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**PASSENGER COMPARTMENT
(EXAMPLE)**

1335814 S0000236214_V2

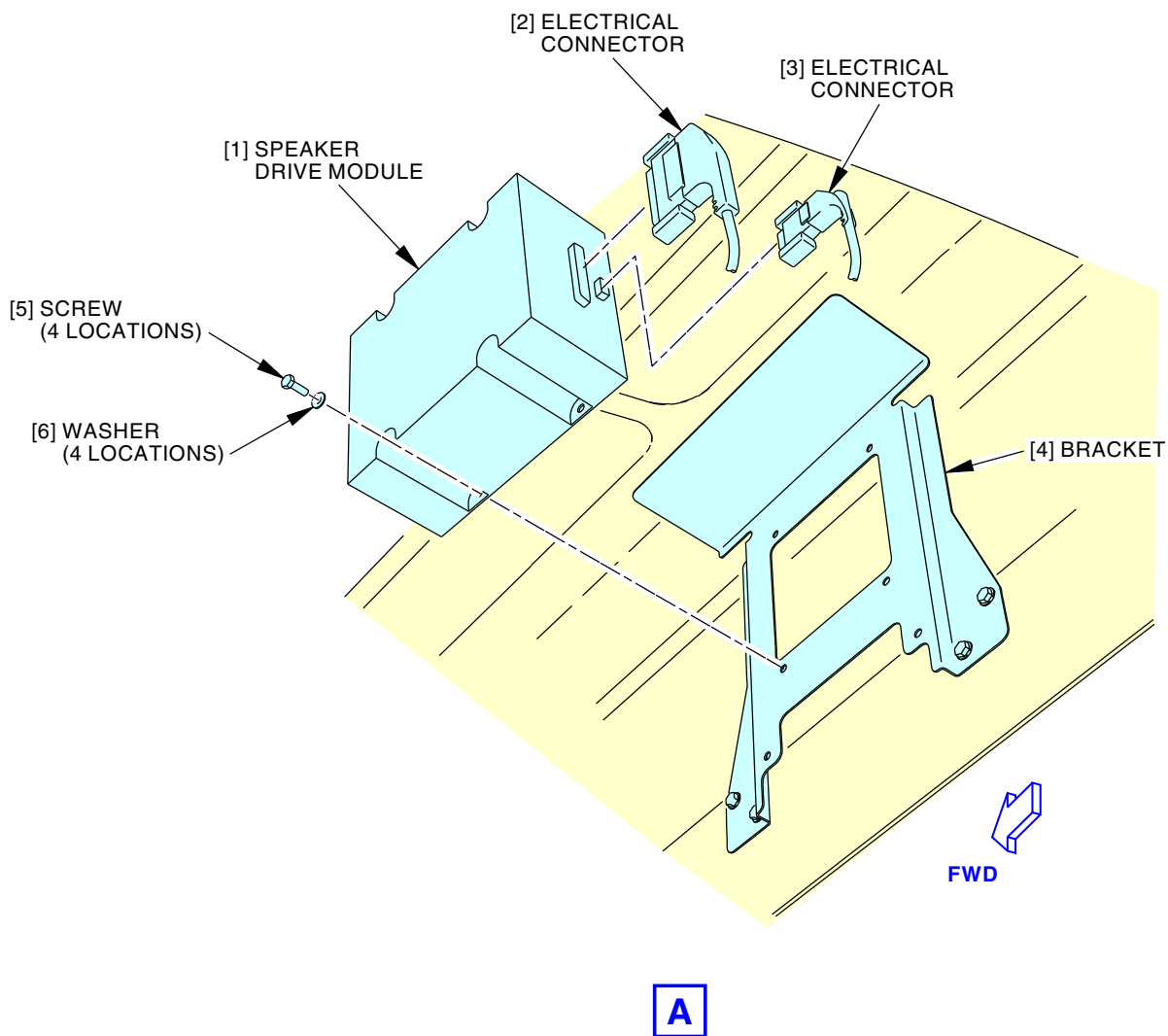
Speaker Drive Module Installation
Figure 401/23-31-02-990-802 (Sheet 1 of 2)

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1335646 S0000236226_V2

Speaker Drive Module Installation
Figure 401/23-31-02-990-802 (Sheet 2 of 2)

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TASK 23-31-02-400-801

3. Speaker Drive Module (SDM) Installation

(Figure 401)

A. General

- (1) This procedure installs the Speaker Drive Module (SDM).

B. References

Reference	Title
20-41-01-400-802	Conductive Dust Cap and Connector Cover Removal (P/B 201)
23-39-00-400-811	Configuration Database and Lighting Database Installation (Phase II) (P/B 201)
23-39-00-700-802	Operational Program Software and Database Verification Test (P/B 201)
23-39-00-700-804	Operational Program Software and Database Verification Test (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
SSM 23-31-20	System Schematics Manual
SSM 23-31-30	System Schematics Manual
SSM 23-31-40	System Schematics Manual
SSM 23-31-60	System Schematics Manual

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	SDM	23-31-02-11A-010	ARO ALL
		23-31-02-12A-065	ARO ALL
		23-31-02-12B-015	ARO ALL
		23-31-02-12C-010	ARO ALL
		23-31-02-12H-010	ARO ALL
		23-31-02-12J-010	ARO ALL
		23-31-02-12K-010	ARO ALL
		23-31-02-13A-035	ARO ALL
		23-31-02-13C-010	ARO ALL
		23-31-02-13E-010	ARO ALL
		23-31-02-14C-025	ARO ALL
		23-31-02-14D-225	ARO ALL
		23-31-02-15B-135	ARO ALL
		23-31-02-16A-150	ARO ALL
		23-31-02-16C-225	ARO ALL
		23-31-02-17C-025	ARO ALL
		23-31-02-19A-150	ARO ALL
		23-31-02-19C-025	ARO ALL
		23-31-02-19E-025	ARO ALL
		23-31-02-19F-025	ARO ALL
		23-31-02-21T-025	ARO ALL

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(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
1 (cont.)		23-31-02-22R-025	ARO ALL

D. Location Zones

Zone	Area
223	Area Above Passenger Compartment Ceiling, Left - Section 41
233	Area Above Passenger Compartment Ceiling, Left - Section 43
243	Area Above Passenger Compartment Ceiling, Left - Section 44
253	Area Above Passenger Compartment Ceiling, Left - Section 46
263	Area Above Passenger Compartment Ceiling, Left - Section 47

E. Installation Procedure

SUBTASK 23-31-02-860-005

- (1) For an SDM [1] in column 1 ;

Make sure that this circuit breaker is open and has safety tag:

(SSM 23-31-20)

Standby Power Management Panel, P310

Row	Col	Number	Name
F	9	C23634	SDM COL 1

SUBTASK 23-31-02-860-006

- (2) For an SDM [1] in column 2 ;

Make sure that this circuit breaker is open and has safety tag:

(SSM 23-31-30)

Standby Power Management Panel, P310

Row	Col	Number	Name
F	10	C23635	SDM COL 2

SUBTASK 23-31-02-860-007

- (3) For an SDM [1] in column 3 ;

Make sure that this circuit breaker is open and has safety tag:

(SSM 23-31-40)

Standby Power Management Panel, P310

Row	Col	Number	Name
F	11	C23636	SDM COL 3

SUBTASK 23-31-02-860-018

- (4) 777-300 AIRPLANES;

For an SDM [1] in column 4 ;

Make sure that this circuit breaker is open and has safety tag:

(SSM 23-31-60)

Standby Power Management Panel, P310

Row	Col	Number	Name
E	9	C23652	SDM COL 5

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SUBTASK 23-31-02-420-001

- (5) Install the SDM [1]:



CAUTION

DO NOT TOUCH THE CONDUCTOR PINS OR OTHER CONDUCTORS ON THE SDM. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE SDM.

- (a) Do this task: Conductive Dust Cap and Connector Cover Removal, TASK 20-41-01-400-802.
- (b) Examine the electrical connectors for bent or broken pins, dirt, and damage.
- (c) Put the SDM [1] on the bracket [3].
- (d) While you hold the SDM [1] in position, install the screws [5] and washers [6] which attach the SDM [1] to the bracket.
- (e) Connect the electrical connectors [2], [4] and [7].

SUBTASK 23-31-02-410-001

- (6) For an SDM [1] in the passenger cabin:

Do this task: Main Ceiling Panel - Installation, TASK 25-21-06-400-801.

SUBTASK 23-31-02-860-008

- (7) For an SDM [1] in column 1 ;

Remove the safety tag and close this circuit breaker:

(SSM 23-31-20)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C23634	SDM COL 1

SUBTASK 23-31-02-860-009

- (8) For an SDM [1] in column 2 ;

Remove the safety tag and close this circuit breaker:

(SSM 23-31-30)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C23635	SDM COL 2

SUBTASK 23-31-02-860-010

- (9) For an SDM [1] in column 3 ;

Remove the safety tag and close this circuit breaker:

(SSM 23-31-40)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C23636	SDM COL 3

SUBTASK 23-31-02-860-019

- (10) 777-300 AIRPLANES;

For an SDM [1] in column 4 ;

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Remove the safety tag and close this circuit breaker:

(SSM 23-31-60)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

F. Installation Test

SUBTASK 23-31-02-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-31-02-740-003

- (2) Do this task: Configuration Database and Lighting Database Installation (Phase II), TASK 23-39-00-400-811.

SUBTASK 23-31-02-740-001

- (3) Do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-802 or Operational Program Software and Database Verification Test, TASK 23-39-00-700-804.

SUBTASK 23-31-02-740-002

- (4) Do the SDM installation test on the Cabin System Control Panel (CSCP):
- (a) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE
 - 2) CABIN TESTS
 - 3) ENGINEERING TESTS...
 - 4) COMMAND OUTPUT...
 - 5) SPEAKER DRIVE MODULE (SDM)
 - 6) The applicable column
 - 7) The applicable SDM.
 - (b) Touch ON for Speakers 1 and 2 on the CSCP.
 - 1) Make sure you hear noise from the speakers in the applicable column.
 - 2) Touch RESET ALL on the CSCP.
 - (c) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE
 - 2) CABIN TESTS
 - 3) START QUICK TEST
 - 4) CONTINUE TEST
 - (d) Make sure that there is no failure for the SDM [1].

NOTE: Approximately 20 seconds are necessary to complete the QUICK TEST. If there is no failure, the CSCP will show NO FAULTS or the SDM selection on the QUICK TEST FAULTS REVIEW menu will be gray.

————— **END OF TASK** —————

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PASSENGER ADDRESS SPEAKER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of a speaker
- (2) An installation of a speaker
- (3) A removal of a main deck speaker
- (4) An installation of a main deck speaker
- (5) A removal of an overdoor speaker
- (6) An installation of an overdoor speaker
- (7) A removal of a lowered ceiling or galley speaker
- (8) An installation of a lowered ceiling or galley speaker
- (9) A removal of a lavatory speaker
- (10) An installation of a lavatory speaker
- (11) A removal of a Main Deck Flight Crew Rest (MDFCR) speaker.
- (12) An installation of a Main Deck Flight Crew Rest (MDFCR) speaker.

TASK 23-31-03-000-805

2. Speaker Removal

A. **Location Zones**

Zone	Area
200	Upper Half of Fuselage

B. **Removal Procedure**

SUBTASK 23-31-03-020-005

- (1) Do one of these tasks to remove a speaker:
 - (a) Do this task: Main Deck Speaker Removal, TASK 23-31-03-000-801.
 - (b) Do this task: Overdoor Speaker Removal, TASK 23-31-03-000-802.
 - (c) Do this task: Lowered Ceiling or Galley Speaker Removal, TASK 23-31-03-000-803.
 - (d) Do this task: Lavatory Speaker Removal, TASK 23-31-03-000-804.
 - (e) Do this task: Main Deck Flight Crew Rest (MDFCR) Speaker Removal, TASK 23-31-03-000-811

————— **END OF TASK** —————

TASK 23-31-03-400-805

3. Speaker Installation

A. **Location Zones**

Zone	Area
200	Upper Half of Fuselage

B. **Installation Procedure**

SUBTASK 23-31-03-420-005

- (1) Do one of these tasks to install a speaker:
 - (a) Do this task: Main Deck Speaker Installation, TASK 23-31-03-400-801.

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- (b) Do this task: Overdoor Speaker Installation, TASK 23-31-03-400-802.
- (c) Do this task: Lowered Ceiling or Galley Speaker Installation, TASK 23-31-03-400-803.
- (d) Do this task: Lavatory Speaker Installation, TASK 23-31-03-400-804.
- (e) Do this task: Main Deck Flight Crew Rest (MDFCR) Speaker Installation, TASK 23-31-03-400-811

————— END OF TASK —————

TASK 23-31-03-000-801

4. Main Deck Speaker Removal

(Figure 401)

A. General

- (1) The main deck speaker is on the ceiling panel over the passenger seat and aisle. You must open the ceiling panel to get access to the speaker.

B. References

Reference	Title
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)
SSM 23-31-20	System Schematics Manual
SSM 23-31-30	System Schematics Manual
SSM 23-31-40	System Schematics Manual
SSM 23-31-60	System Schematics Manual

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Removal Procedure

SUBTASK 23-31-03-860-001

- (1) For a speaker in column 1 (SSM 23-31-20) ;
Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-002

- (2) For a speaker in column 2 (SSM 23-31-30);
Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-003

- (3) For a speaker in column 3 (SSM 23-31-40);
Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	11	C23636	SDM COL 3

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SUBTASK 23-31-03-860-050

(4) 777-300 AIRPLANES;

For a speaker in column 4 (SSM 23-31-60);

Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

SUBTASK 23-31-03-010-001

(5) To get access to the speaker, do this task: Main Ceiling Panel - Removal,
TASK 25-21-06-000-801.

SUBTASK 23-31-03-020-001

(6) Remove the speaker [1] from the main ceiling panel:

- (a) Disconnect the electrical connectors [3].
- (b) Remove the bolts [2 and 5].
- (c) Remove the speaker.
- (d) Remove the speaker gasket [4].

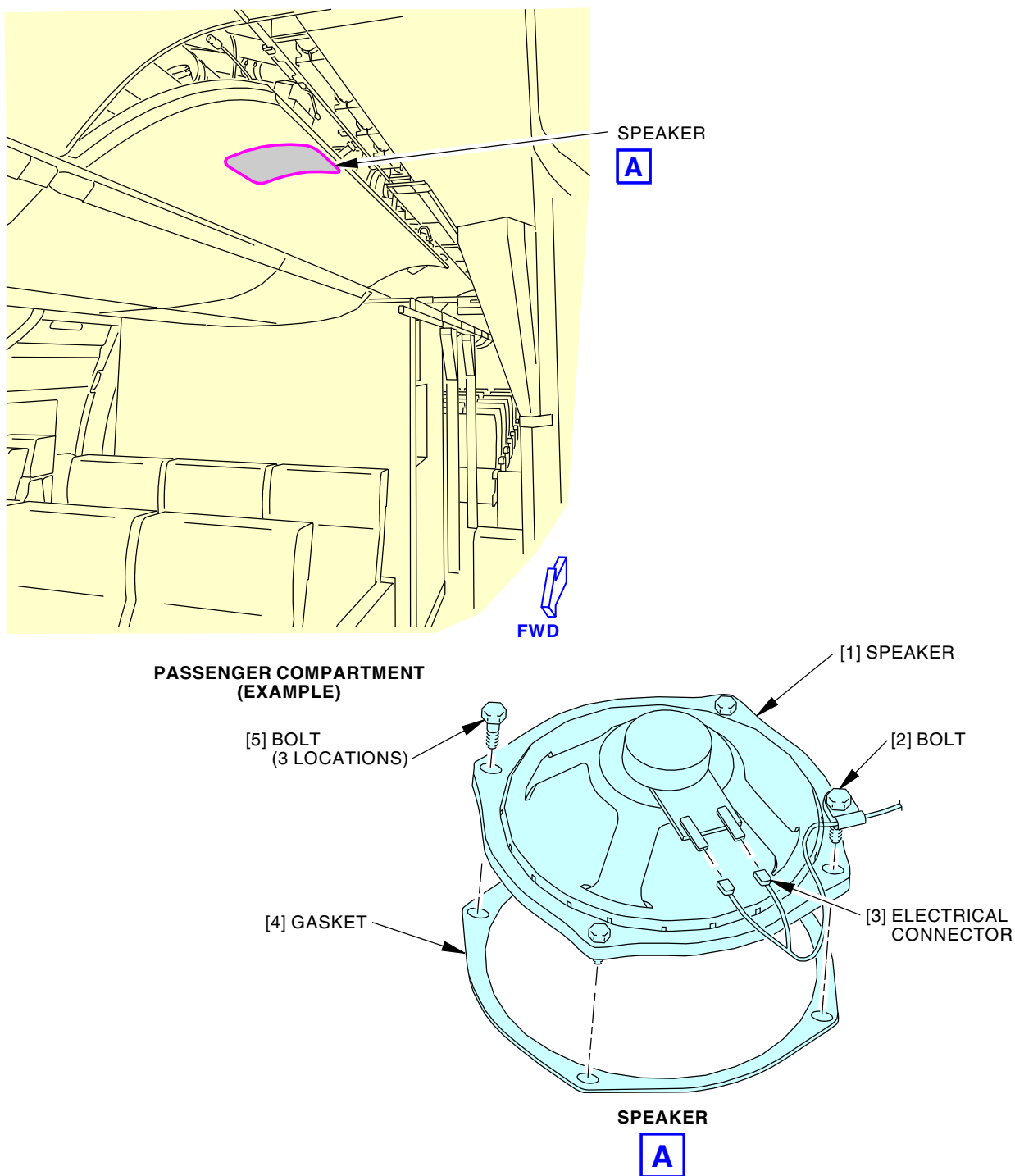
————— **END OF TASK** —————

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**Main Deck Speaker Installation
Figure 401/23-31-03-990-804**

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TASK 23-31-03-400-801

5. Main Deck Speaker Installation

(Figure 401)

A. General

- (1) The main deck speaker is on the ceiling panel over the passenger seat and aisle. You must open the ceiling panel to get access to the speaker.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)
SSM 23-31-20	System Schematics Manual
SSM 23-31-30	System Schematics Manual
SSM 23-31-40	System Schematics Manual
SSM 23-31-60	System Schematics Manual

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Installation Procedure

SUBTASK 23-31-03-860-004

- (1) For a speaker in column 1 (SSM 23-31-20);
Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-005

- (2) For a speaker in column 2 (SSM 23-31-30) ;
Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-006

- (3) For a speaker in column 3 (SSM 23-31-40);
Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-051

- (4) 777-300 AIRPLANES;
For a speaker in column 4 (SSM 23-31-60);

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Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

SUBTASK 23-31-03-420-001

- (5) Install the speaker [1] to the main ceiling panel:
- Put the speaker gasket [4] in its position over the bolt holes on the speaker grill assembly.
 - Put the speaker on the speaker grill assembly.
 - Install the bolts [2 and 5] that attach the speaker to the speaker grill assembly.
 - Connect the electrical connectors [3].
 - Make sure you connect the red wire to the terminal nearest the red dot (positive terminal) for correct speaker phasing.

SUBTASK 23-31-03-410-001

- (6) Do this task: Main Ceiling Panel - Installation, TASK 25-21-06-400-801.

SUBTASK 23-31-03-860-007

- (7) For a speaker in column 1 (SSM 23-31-20);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-008

- (8) For a speaker in column 2 (SSM 23-31-30);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-009

- (9) For a speaker in column 3 (SSM 23-31-40);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-052

- (10) 777-300 AIRPLANES;
For a speaker in column 4 (SSM 23-31-60);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

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E. Installation Test

SUBTASK 23-31-03-860-037

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-31-03-710-001

- (2) Do the speaker installation test:
- (a) Remove one of the attendant handsets from its cradle.
 - (b) Push the dial code for PA ALL.
NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Push and hold the PTT button.
 - (d) Speak into the handset.
 - (e) Make sure you can hear a clear voice from the installed speaker.
 - (f) Put the handset back in its cradle.

————— END OF TASK —————

TASK 23-31-03-000-802

6. Overdoor Speaker Removal

(Figure 402)

A. General

- (1) The overdoor speaker is on the overdoor panel. You must open the overdoor panel to get access to the overdoor speaker.

B. References

Reference	Title
25-21-08-000-801	Overdoor Panel Opening/Removal (P/B 201)
SSM 23-31-20	System Schematics Manual
SSM 23-31-30	System Schematics Manual
SSM 23-31-40	System Schematics Manual
SSM 23-31-60	System Schematics Manual

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Removal Procedure

SUBTASK 23-31-03-860-010

- (1) For a speaker in column 1 (SSM 23-31-20);
Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-011

- (2) For a speaker in column 2 (SSM 23-31-30);

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Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-012

- (3) For a speaker in column 3 (SSM 23-31-40);

Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-053

- (4) 777-300 AIRPLANES;

For a speaker in column 4 (SSM 23-31-60);

Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

SUBTASK 23-31-03-010-002

- (5) To get access to the speaker, do this task: Overdoor Panel Opening/Removal, TASK 25-21-08-000-801.

SUBTASK 23-31-03-020-002

- (6) Remove the speaker [1] from the overdoor panel:
- (a) Disconnect the electrical connectors [3].
 - (b) Remove the screws [21] and washers [22] from the speaker.
 - (c) Remove the speaker.
 - (d) Remove the speaker gasket [4].

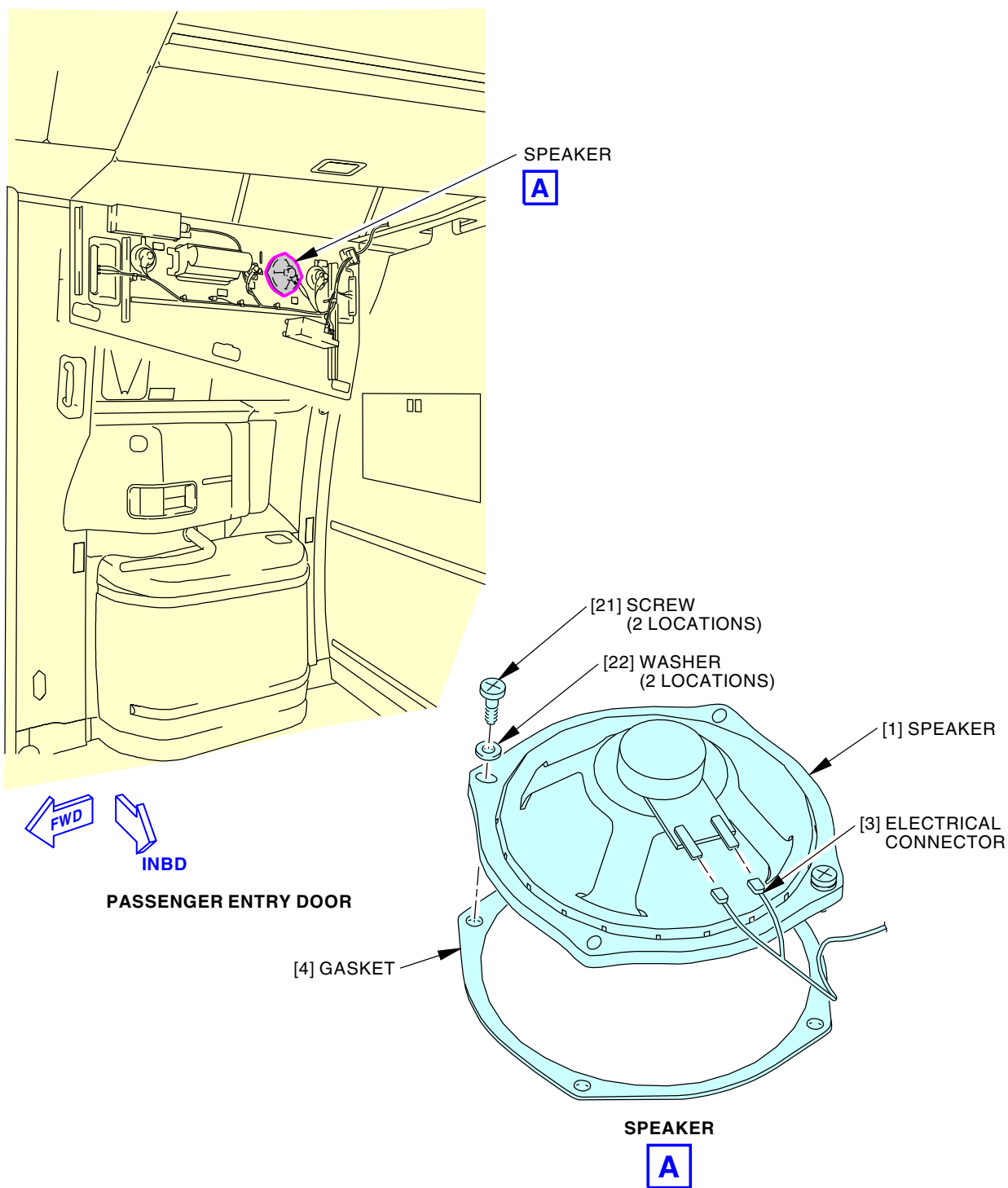
————— **END OF TASK** —————

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E05221 S0006405180_V2

**Overdoor Speaker Installation (Example)
Figure 402/23-31-03-990-805**

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TASK 23-31-03-400-802

7. Overdoor Speaker Installation

(Figure 402)

A. General

- (1) The overdoor speaker is on the overdoor panel. You must open the overdoor panel to get access to the overdoor speaker.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-21-08-400-801	Overdoor Panel Installation/Closing (P/B 201)
SSM 23-31-20	System Schematics Manual
SSM 23-31-30	System Schematics Manual
SSM 23-31-40	System Schematics Manual
SSM 23-31-60	System Schematics Manual

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Installation Procedure

SUBTASK 23-31-03-860-013

- (1) For a speaker in column 1 (SSM 23-31-20);
Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-014

- (2) For a speaker in column 2 (SSM 23-31-30);
Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-015

- (3) For a speaker in column 3 (SSM 23-31-40);
Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-054

- (4) 777-300 AIRPLANES;
For a speaker in column 4 (SSM 23-31-60);

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Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

SUBTASK 23-31-03-420-002

- (5) Install the speaker [1] to the overdoor panel:
- Put the speaker gasket [4] in its position over the bolt holes on the overdoor panel.
 - Put the speaker on the overdoor panel.
 - Install the screws [21] and washers [22] that attach the speaker to the overdoor panel.
 - Connect the electrical connectors [3].
 - Make sure you connect the red wire to the terminal nearest the red dot (positive terminal) for correct speaker phasing.

SUBTASK 23-31-03-410-002

- (6) Do this task: Overdoor Panel Installation/Closing, TASK 25-21-08-400-801.

SUBTASK 23-31-03-860-016

- (7) For a speaker in column 1 (SSM 23-31-20);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-017

- (8) For a speaker in column 2 (SSM 23-31-30);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-018

- (9) For a speaker in column 3 (SSM 23-31-40);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-055

- (10) 777-300 AIRPLANES;
For a speaker in column 4 (SSM 23-31-60);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

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E. Installation Test

SUBTASK 23-31-03-860-038

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-31-03-710-002

- (2) Do the speaker installation test:
- (a) Remove one of the attendant handsets from its cradle.
 - (b) Push the dial code for PA ALL.
NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Push and hold the PTT button.
 - (d) Speak into the handset.
 - (e) Make sure you can hear a clear voice from the installed speaker.
 - (f) Put the handset back in its cradle.

————— END OF TASK —————

TASK 23-31-03-000-803

8. Lowered Ceiling or Galley Speaker Removal

(Figure 403)

A. General

- (1) The speaker is installed on the lowered ceiling or in the galley. You must open the lowered ceiling panel to get access to these speakers.
- (2) This task is the same for the lowered ceiling and the galley speakers.

B. References

Reference	Title
25-21-07-000-801	Lowered Ceiling Panel Removal (P/B 401)
SSM 23-31-20	System Schematics Manual
SSM 23-31-30	System Schematics Manual
SSM 23-31-40	System Schematics Manual
SSM 23-31-60	System Schematics Manual

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Removal Procedure

SUBTASK 23-31-03-860-019

- (1) For a speaker in column 1 (SSM 23-31-20);
Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-020

- (2) For a speaker in column 2 (SSM 23-31-30);

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Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-021

- (3) For a speaker in column 3 (SSM 23-31-40);

Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-056

- (4) 777-300 AIRPLANES;

For a speaker in column 4 (SSM 23-31-60);

Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

SUBTASK 23-31-03-010-003

- (5) To get access to the speaker, do this task: Lowered Ceiling Panel Removal, TASK 25-21-07-000-801.

SUBTASK 23-31-03-020-003

- (6) Remove the speaker [1]:
- (a) Disconnect the electrical connectors [3].
 - (b) Remove the screws [21] and washers [22] from the speaker.
 - (c) Remove the speaker.
 - (d) Remove the speaker gasket [4].

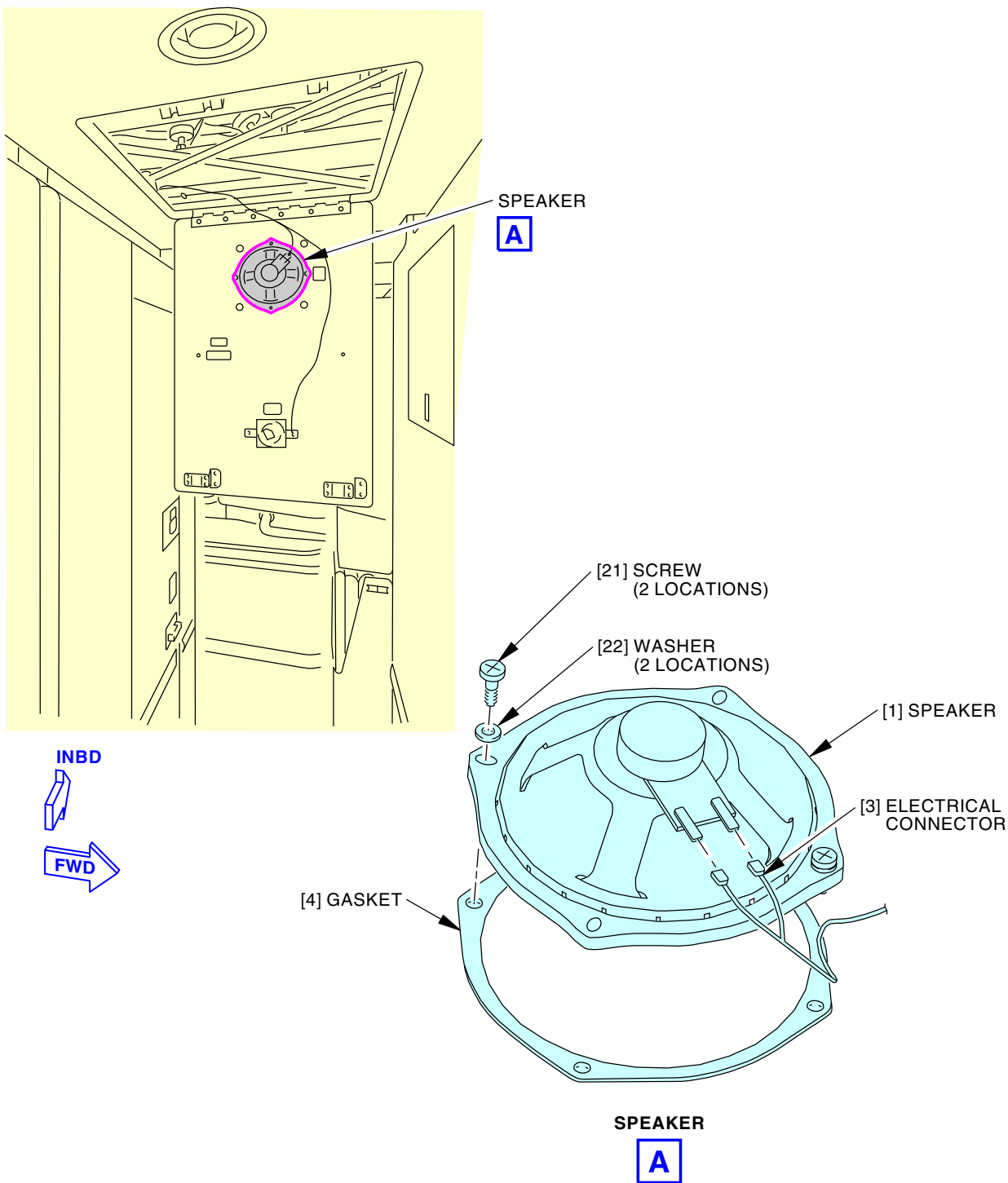
————— **END OF TASK** —————

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Lowered Ceiling or Galley Speaker Installation (Example)
Figure 403/23-31-03-990-806

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TASK 23-31-03-400-803

9. Lowered Ceiling or Galley Speaker Installation

(Figure 403)

A. General

- (1) The speaker is installed on the lowered ceiling or in the galley. You must open the lowered ceiling panel to get access to these speakers.
- (2) This task is the same for the lowered ceiling and galley speakers.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-21-07-400-801	Lowered Ceiling Panel Installation (P/B 401)
SSM 23-31-20	System Schematics Manual
SSM 23-31-30	System Schematics Manual
SSM 23-31-40	System Schematics Manual
SSM 23-31-60	System Schematics Manual

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Installation Procedure

SUBTASK 23-31-03-860-022

- (1) For a speaker in column 1 (SSM 23-31-20);

Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-023

- (2) For a speaker in column 2 (SSM 23-31-30);

Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-024

- (3) For a speaker in column 3 (SSM 23-31-40);

Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-057

- (4) 777-300 AIRPLANES;

For a speaker in column 4 (SSM 23-31-60);

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Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

SUBTASK 23-31-03-420-003

- (5) Install the speaker [1]:
- Put the speaker gasket [4] in its position over the bolt holes on the ceiling panel.
 - Put the speaker on the ceiling panel.
 - Install the screws [21] and washers [22] that attach the speaker to the ceiling panel.
 - Connect the electrical connectors [3] to the speaker.
 - Make sure you connect the red wire to the terminal nearest the red dot (positive terminal) for correct speaker phasing.

SUBTASK 23-31-03-410-003

- (6) Do this task: Lowered Ceiling Panel Installation, TASK 25-21-07-400-801.

SUBTASK 23-31-03-860-025

- (7) For a speaker in column 1 (SSM 23-31-20);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-026

- (8) For a speaker in column 2 (SSM 23-31-30);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-027

- (9) For a speaker in column 3 (SSM 23-31-40);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-058

- (10) 777-300 AIRPLANES;
For a speaker in column 4 (SSM 23-31-60);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

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E. Installation Test

SUBTASK 23-31-03-860-039

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-31-03-710-003

- (2) Do the speaker installation test:
- (a) Remove one of the attendant handsets from its cradle.
 - (b) Push the dial code for PA ALL.
NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Push and hold the PTT button.
 - (d) Speak into the handset.
 - (e) Make sure you can hear a clear voice from the installed speaker.
 - (f) Put the handset back in its cradle.

————— END OF TASK —————

TASK 23-31-03-000-804

10. Lavatory Speaker Removal

A. General

- (1) The lavatory speaker is on the lavatory service unit. You must open the lavatory service unit to get access to the lavatory speaker.

B. References

Reference	Title
SSM 23-31-20	System Schematics Manual
SSM 23-31-30	System Schematics Manual
SSM 23-31-40	System Schematics Manual
SSM 23-31-60	System Schematics Manual

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Removal Procedure

SUBTASK 23-31-03-860-028

- (1) For a speaker in column 1 (SSM 23-31-20);
Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-029

- (2) For a speaker in column 2 (SSM 23-31-30);
Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
F	10	C23635	SDM COL 2

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SUBTASK 23-31-03-860-030

- (3) For a speaker in column 3 (SSM 23-31-40);
Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-059

- (4) 777-300 AIRPLANES;
For a speaker in column 4 (SSM 23-31-60);
Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

SUBTASK 23-31-03-010-004

- (5) Open the lavatory service unit to get access to the speaker.

SUBTASK 23-31-03-020-004

- (6) Remove the speaker [1] from the lavatory service unit:
- (a) Disconnect the electrical connectors [3].
 - (b) Remove the screws [21] and washers [22] from the speaker.
 - (c) Remove the speaker.
 - (d) Remove the speaker gasket [4].

————— END OF TASK —————

TASK 23-31-03-400-804

11. Lavatory Speaker Installation

A. General

- (1) The lavatory speaker is on the lavatory service unit. You must open the lavatory service unit to get access to the lavatory speaker.

B. References

<u>Reference</u>	<u>Title</u>
24-22-00-860-805	Supply Electrical Power (P/B 201)
SSM 23-31-20	System Schematics Manual
SSM 23-31-30	System Schematics Manual
SSM 23-31-40	System Schematics Manual
SSM 23-31-60	System Schematics Manual

C. Location Zones

<u>Zone</u>	<u>Area</u>
200	Upper Half of Fuselage

D. Installation Procedure

SUBTASK 23-31-03-860-031

- (1) For a speaker in column 1 (SSM 23-31-20);

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Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-860-032

- (2) For a speaker in column 2 (SSM 23-31-30);

Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-033

- (3) For a speaker in column 3 (SSM 23-31-40);

Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-060

- (4) 777-300 AIRPLANES;

For a speaker in column 4 (SSM 23-31-60);

Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

SUBTASK 23-31-03-420-004

- (5) Install the speaker [1] to the lavatory service unit:

- Put the speaker gasket [4] in its position over the bolt holes on the lavatory service unit.
- Put the speaker on the lavatory service unit.
- Install the screws [21] and washers [22] that attach the speaker to the lavatory service unit.
- Connect the electrical connectors [3] to the speaker.
 - Make sure you connect the red wire to the terminal nearest the red dot (positive terminal) for correct speaker phasing.

SUBTASK 23-31-03-410-004

- (6) Close the lavatory service unit.

SUBTASK 23-31-03-860-034

- (7) For a speaker in column 1 (SSM 23-31-20);

Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C23634	SDM COL 1

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SUBTASK 23-31-03-860-035

- (8) For a speaker in column 2 (SSM 23-31-30);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C23635	SDM COL 2

SUBTASK 23-31-03-860-036

- (9) For a speaker in column 3 (SSM 23-31-40);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C23636	SDM COL 3

SUBTASK 23-31-03-860-061

- (10) 777-300 AIRPLANES;
For a speaker in column 4 (SSM 23-31-60);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	9	C23652	SDM COL 5

E. Installation Test

SUBTASK 23-31-03-860-040

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-31-03-710-004

- (2) Do the speaker installation test:
- Remove one of the attendant handsets from its cradle.
 - Push the dial code for PA ALL.
NOTE: The dial code directory is on the back of the attendant handset.
 - Push and hold the PTT button.
 - Speak into the handset.
 - Make sure you can hear a clear voice from the installed speaker.
 - Put the handset back in its cradle.

————— END OF TASK —————

TASK 23-31-03-000-811

12. Main Deck Flight Crew Rest (MDFCR) Speaker Removal

Figure 404

A. General

- (1) One speaker is installed in the Main Deck Flight Crew Rest (MDFCR) area.

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B. References

<u>Reference</u>	<u>Title</u>
SSM 23-31-20	System Schematics Manual

C. Location Zones

<u>Zone</u>	<u>Area</u>
220	Subzone 220 - Section 41

D. Removal Procedure

SUBTASK 23-31-03-860-086

- (1) For speaker in MDFCR (SSM 23-31-20);
Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-010-012

- (2) Open the panel to gain access to the speaker.

SUBTASK 23-31-03-020-011

- (3) To remove the speaker, perform the following steps:
- (a) Disconnect the electrical connectors [3].
 - (b) Remove the screws [21] and washers [22].
 - (c) Remove the speaker [1].
 - (d) Remove the speaker gasket [4].

———— **END OF TASK** ————

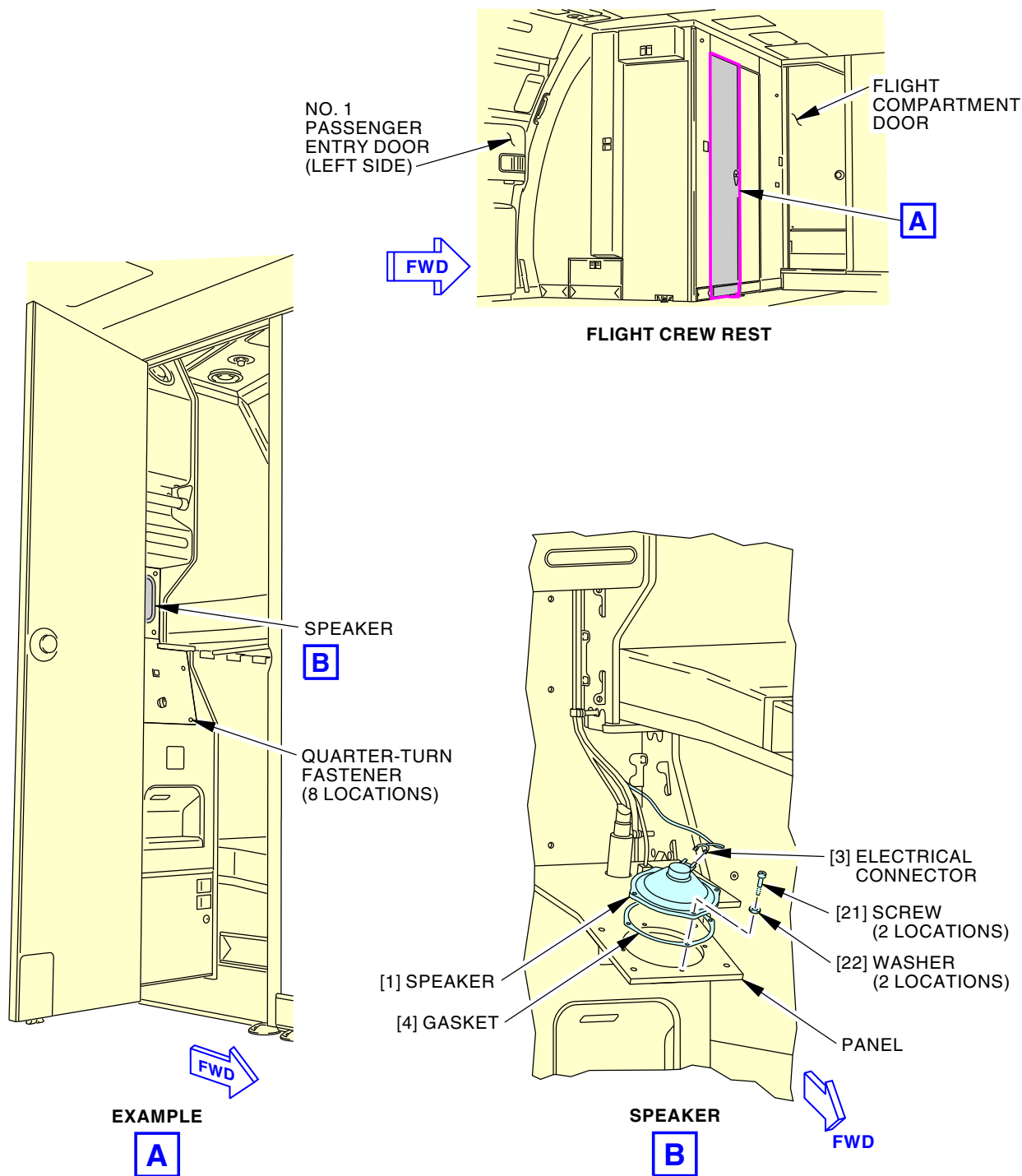
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**Main Deck Flight Crew Rest (MDFCR) - Speaker Installation
Figure 404/23-31-03-990-812**

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TASK 23-31-03-400-811

13. Main Deck Flight Crew Rest (MDFCR) Speaker Installation

Figure 404

A. General.

- (1) One speaker is installed in the Main Deck Flight Crew Rest (MDFCR) area.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
SSM 23-31-20	System Schematics Manual

C. Location Zones

Zone	Area
220	Subzone 220 - Section 41

D. Installation Procedure

SUBTASK 23-31-03-865-004

- (1) Make sure that this circuit breaker is open and has safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C23634	SDM COL 1

SUBTASK 23-31-03-420-011

- (2) To install the speaker, perform the following steps:
 - (a) Put the speaker gasket [4] in its position over the bolt holes on the panel.
 - (b) Put the speaker [1] on the panel.
 - (c) Install the screws [21] and washers [22] that attach the speaker to the panel.
 - (d) Connect the electrical connectors [3] to the speaker.
 - 1) Make sure you connect the red wire to the terminal nearest the red dot (positive terminal) for correct speaker phasing.

SUBTASK 23-31-03-410-009

- (3) Close the panel.

SUBTASK 23-31-03-865-005

- (4) For a speaker in MDFCR (SSM 23-31-20);
Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C23634	SDM COL 1

E. Installation Test

SUBTASK 23-31-03-860-087

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-31-03-710-008

- (2) Do the speaker installation test:
 - (a) Remove one of the attendant handsets from its cradle.

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- (b) Push the dial code for PA ALL.

NOTE: The dial code directory is on the back of the attendant handset.

- (c) Push and hold the PTT button.
- (d) Speak into the handset.
- (e) Make sure you can hear a clear voice from the installed speaker.
- (f) Put the handset back in its cradle.

———— **END OF TASK** ————

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PASSENGER SERVICE SYSTEM - MAINTENANCE PRACTICES

1. General

- A. This procedure has these tasks:
- (1) Passenger Service System Deactivation.
 - (2) Passenger Service System Activation.

TASK 23-33-00-040-801

2. Passenger Service System - Deactivation

A. **General**

- (1) This task removes electrical power to the Passenger Service System.

B. **Location Zones**

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
200	Upper Half of Fuselage

C. **Access Panels**

Number	Name/Location
117AL	Main Equipment Center Access Door

D. **Procedure**

SUBTASK 23-33-00-010-001

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-33-00-860-001

- (2) 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>
A	15	C23437	OEU ZONE1 MAIN BUS
C	20	C23464	OEU ZONE 4 R MAIN BUS
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
E	22	C23465	OEU ZONE 4 CTR MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS
H	7	C23447	OEU ZONE3 XFER BUS

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS

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(Continued)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	24	C23420	OEU ZONE2 XFER BUS

E. Passenger Service System - Tryout

NOTE: This tryout is to make sure the Passenger Service System is in a zero energy state.

SUBTASK 23-33-00-860-002

- (1) Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	15	C23437	OEU ZONE1 MAIN BUS
C	20	C23464	OEU ZONE 4 R MAIN BUS
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
E	22	C23465	OEU ZONE 4 CTR MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS
H	7	C23447	OEU ZONE3 XFER BUS

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-00-700-002

- (2) At the Cabin System Control Panel (CSCP), make the following selections:

- (a) CABIN MAINTENANCE
- (b) CABIN TESTS
- (c) START ALL TEST
- (d) CONTINUE

SUBTASK 23-33-00-700-003

- (3) At the ALL TEST FAULTS REVIEW screen, on the CSCP, make the following selections:

- (a) ALL UNITS
- (b) CONTINUE
- (c) Make sure the following maintenance messages show:
 - 1) 23-03401
 - 2) 23-03402
 - 3) 23-03410

————— END OF TASK —————

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TASK 23-33-00-440-801

3. Passenger Service System - Activation

A. General

- (1) This task adds electrical power to the Passenger Service System.

B. Location Zones

Zone	Area

117	Main Equipment Center, Left
118	Main Equipment Center, Right
200	Upper Half of Fuselage

C. Procedure

SUBTASK 23-33-00-860-003

- (1) Remove the safety tags and close these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
A	15	C23437	OEU ZONE1 MAIN BUS
C	20	C23464	OEU ZONE 4 R MAIN BUS
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
E	22	C23465	OEU ZONE 4 CTR MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS
H	7	C23447	OEU ZONE3 XFER BUS

Right Power Management Panel, P210

Row	Col	Number	Name
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-00-700-004

- (2) At the ALL TEST FAULTS REVIEW screen, on the CSCP, make sure the following maintenance messages no longer show:
- (a) 23-03401
 - (b) 23-03402
 - (c) 23-03410

————— END OF TASK —————

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PASSENGER SERVICE SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

- (1) A software configuration check of the Passenger Service System (PSS).
- (2) An operational test of the passenger service system (PSS).
- (3) A system test of the PSS.

TASK 23-33-00-700-801

2. Passenger Service System - Software Configuration Check

A. General

- (1) This software configuration check will show the applicable software for the Passenger Service System LRUs.

B. References

Reference	Title
23-39-00-700-802	Operational Program Software and Database Verification Test (P/B 201)
23-39-00-700-804	Operational Program Software and Database Verification Test (P/B 201)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Procedure

SUBTASK 23-33-00-700-001

- (1) Do a software configuration check:

NOTE: Do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-802 or Operational Program Software and Database Verification Test, TASK 23-39-00-700-804.

————— **END OF TASK** —————

TASK 23-33-00-710-801

3. Passenger Service System - Operational Test

A. General

- (1) This operational test gives a quick check of the Passenger Service System (PSS).
- (2) The Cabin System Control Panel (CSCP) is necessary to do this test.

B. Location Zones

Zone	Area
221	Passenger Compartment, Left - Section 41

C. Procedure

SUBTASK 23-33-00-740-001

- (1) Do a QUICK TEST on the CSCP to test the PSS:
 - (a) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE

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- 2) CABIN TESTS
 - 3) START QUICK TEST
 - 4) CONTINUE TEST
- (b) Make sure that NO FAULTS shows on the CSCP when the test is completed.
- NOTE: Approximately 20 seconds are necessary to complete the test. If a failure occurs, the CSCP will show the QUICK TEST FAULTS REVIEW menu.
- (c) If a failure does occur, make sure it is not for one of these LRUs:
- NOTE: If there are no failures for the LRU, the line around the buttons becomes gray.
- 1) Controllers
 - 2) Overhead Electronics Unit (OEU).
- (d) If there are failures for the above LRUs, refer to the applicable Maintenance Message Index in the FIM.

————— END OF TASK —————

TASK 23-33-00-730-801

4. Passenger Service System - System Test

A. General

- (1) This system test makes sure that the passenger-to-attendant call function of the passenger service system operates correctly.
- (2) Attendants use the CSCP or CACPs to disable the chime related to a passenger-to-attendant call. Each CACP controls the chimes in an area identified by the configuration database.
- (3) This system test for the PSS includes:
 - (a) PSS - All Test
 - (b) Passenger-to-Attendant Call Test

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. PSS - All Test

SUBTASK 23-33-00-740-002

- (1) Do the ALL TEST on the Cabin System Control Panel (CSCP):
 - (a) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE
 - 2) CABIN TESTS
 - 3) START ALL TEST
 - 4) CONTINUE TEST
 - (b) Make sure that NO FAULTS shows on the CSCP when the test is completed.
- NOTE: Approximately 2 minutes are necessary to complete the test. If a failure occurs, the CSCP will show the ALL TEST FAULTS REVIEW menu.
- NOTE: Wait 3 minutes after the test is complete before you do any other maintenance action. Most of the line replaceable units (LRUs) in the Cabin Services System (CSS) and Mood Lighting System (MLS) will go through rebooting or re-initializing process, which takes approximately 3 minutes to complete.

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- (c) If a failure does occur, make sure it is not for one of these LRUs:

NOTE: If there are no failures for the LRU, the line around the buttons becomes gray.

- 1) Controllers
 - 2) Overhead Electronics Unit (OEU).
- (d) If there are failures for the above LRUs, refer to the applicable Maintenance Message Index in the FIM.

D. Passenger-to-Attendant Call Test

SUBTASK 23-33-00-730-001

- (1) Do the passenger-to-attendant call test for each area:
- (a) Touch these selections on the CSCP to turn on the service call/chime:
 - 1) CABIN CONTROLS
 - 2) SERVICE CALL/CHIME CONTROL
 - 3) AREA CHIME CONTROL
 - 4) Make an applicable area selection
 - 5) ENABLE CHIME
 - (b) Push the attendant call button on one of the passenger control units (PCUs).
 - (c) Make sure the call light above the passenger seat comes on.
 - (d) Make sure the chime sounds and the master call light at the applicable attendant station comes on.
 - (e) Push the attendant call reset button on the PCU.
 - (f) Make sure that the call light and master call light go off.
 - (g) Touch DISABLE CHIME on the CSCP.
 - (h) Push the attendant call button on one of the PCUs.
 - (i) Make sure the call light above the passenger seat and the master call light at the applicable station come on.
 - (j) Make sure that you hear no chime.
 - (k) Push the attendant call reset button on the PCU.
 - (l) Make sure the call light and master call light go off.

———— **END OF TASK** ————

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OVERHEAD ELECTRONICS UNIT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) The removal of an overhead electronics unit (OEU)
- (2) The installation of an OEU
- (3) The removal of a center passenger service unit (PSU) OEU
- (4) The installation of a center PSU OEU
- (5) The removal of an outboard PSU OEU
- (6) The installation of an outboard PSU OEU
- (7) The removal of an overdoor OEU
- (8) The installation of an overdoor OEU
- (9) The removal of a lavatory OEU
- (10) The installation of a lavatory OEU
- (11) The removal of a lowered ceiling OEU
- (12) The installation of a lowered ceiling OEU
- (13) The installation test of an OEU.

TASK 23-33-02-000-806

2. Overhead Electronics Unit (OEU) Removal

A. **General**

- (1) If you remove an Overhead Electronics Unit (OEU) and do not replace it, you must install a shorting plug in place of the OEU you removed.
- (2) If you remove an OEU drip shield, you must reinstall or replace it.

NOTE: Some OEUs are protected by a removable drip shield [61] (Figure 401).

B. **Location Zones**

Zone	Area
200	Upper Half of Fuselage

C. **Procedure**

SUBTASK 23-33-02-000-001

- (1) Do one of these tasks to remove an Overhead Electronics Unit (OEU).
 - (a) Do this task: Center PSU Overhead Electronics Unit Removal, TASK 23-33-02-000-801.
 - (b) Do this task: Outboard PSU Overhead Electronics Unit Removal, TASK 23-33-02-000-802.
 - (c) Do this task: Overdoor Overhead Electronics Unit Removal, TASK 23-33-02-000-803.
 - (d) Do this task: Lavatory Overhead Electronics Unit Removal, TASK 23-33-02-000-804.
 - (e) Do this task: Lowered Ceiling Overhead Electronics Unit Removal, TASK 23-33-02-000-805.

———— **END OF TASK** ————

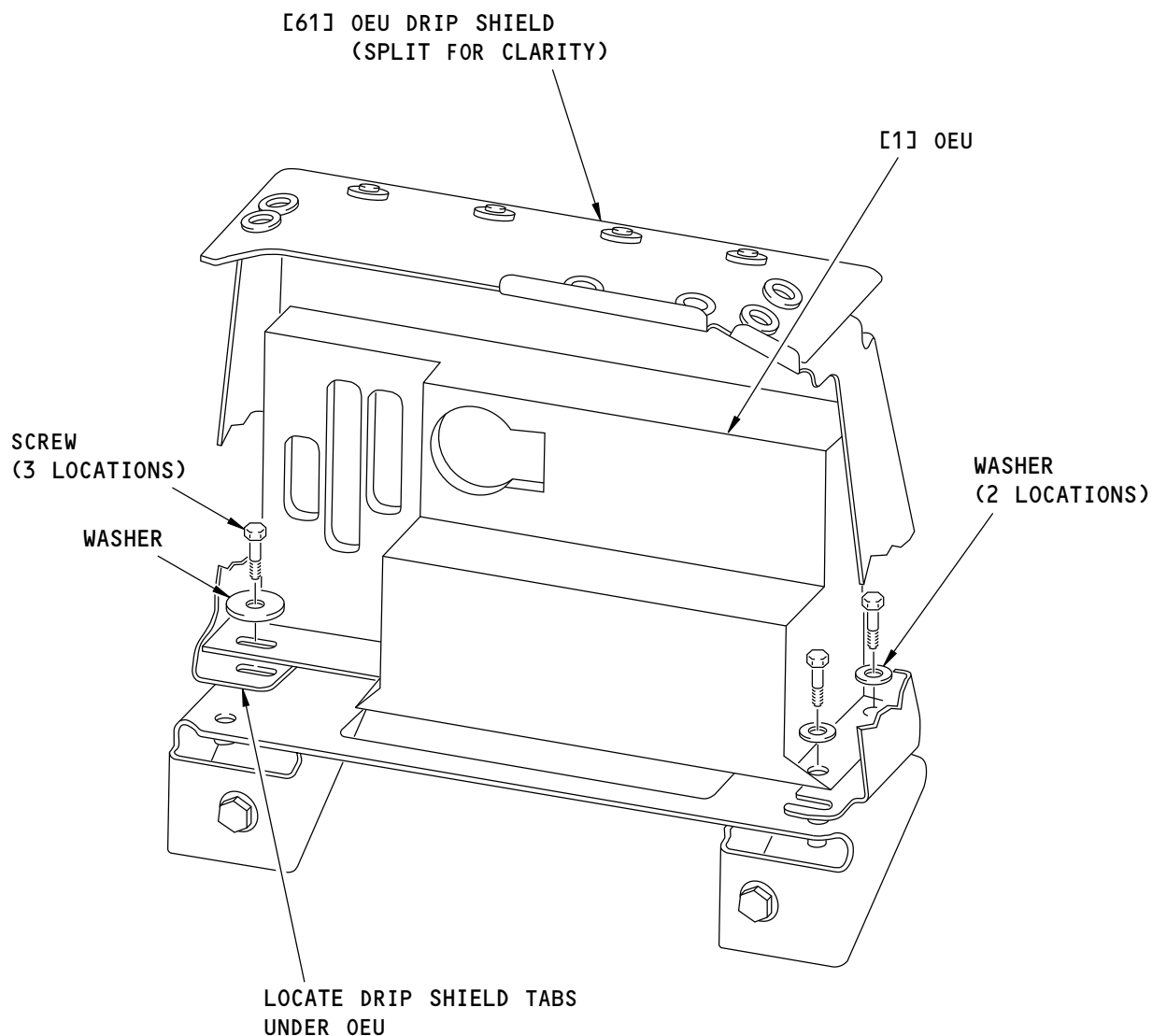
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**OEU DRIP SHIELD INSTALLATION
(EXAMPLE)**

1350909 S0000241143_V1

**OEU Drip Shield Installation
Figure 401/23-33-02-990-814**

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TASK 23-33-02-400-806

3. Overhead Electronics Unit (OEU) Installation

(Figure 401)

A. General

- (1) If you remove an Overhead Electronics Unit (OEU) and do not replace it, you must install a shorting plug in place of the OEU you removed.
- (2) If an OEU removal also removed the OEU drip shield, the drip shield must be reinstalled.

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Installation Procedure

SUBTASK 23-33-02-410-007

- (1) Do one of these tasks to install an Overhead Electronics Unit (OEU):
 - (a) Do this task: Center PSU Overhead Electronics Unit Installation, TASK 23-33-02-400-801.
 - (b) Do this task: Outboard PSU Overhead Electronics Unit Installation, TASK 23-33-02-400-802.
 - (c) Do this task: Overdoor Overhead Electronics Unit Installation, TASK 23-33-02-400-803.
 - (d) Do this task: Lavatory Overhead Electronics Unit Installation, TASK 23-33-02-400-804.
 - (e) Do this task: Lowered Ceiling Overhead Electronics Unit Installation, TASK 23-33-02-400-805.

————— END OF TASK —————

TASK 23-33-02-000-801

4. Center PSU Overhead Electronics Unit Removal

(Figure 402)

A. General

- (1) The Center PSU Overhead Electronics Unit (OEU) is above the ceiling, installed on the right side of the center storage bin support structure.
- (2) If you remove an OEU and do not replace it, you must install a shorting plug in place of the OEU you removed.

B. References

Reference	Title
20-41-01-000-802	Conductive Dust Cap and Connector Cover Installation (P/B 201)
25-23-01-010-801	Passenger Service Unit (PSU) Opening (P/B 201)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Removal Procedure

SUBTASK 23-33-02-860-001

- (1) For the OEU in zone 1,

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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>
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-004

- (2) For the OEU in zone 2 center,

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>
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-005

- (3) For the OEU in zone 3 center,

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>
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-083

- (4) For the OEU in zone 4 center,

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>
E	22	C23465	OEU ZONE 4 CTR MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-010-001

- (5) For the reading light PSU, do this task: Passenger Service Unit (PSU) Opening, TASK 25-23-01-010-801.

SUBTASK 23-33-02-000-002



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE OEU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OEU.

- (6) To remove the OEU [1] from the brackets, do these steps:
- Disconnect the electrical connectors [2], [3], and [4].
 - Do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-41-01-000-802.
 - Remove the screws [5] and washers [7], [8] which attach the OEU [1] to the brackets.
 - Remove the OEU [1].

————— **END OF TASK** —————

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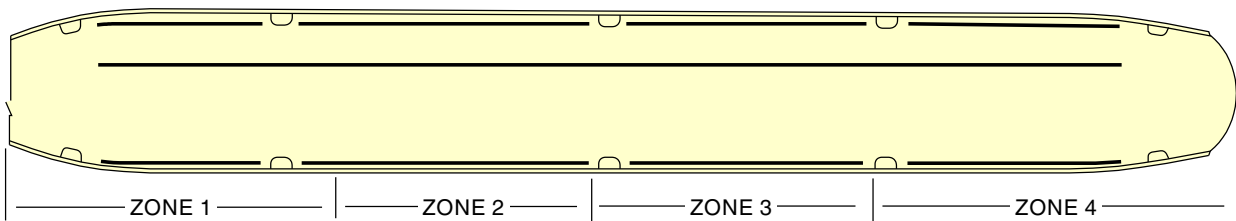
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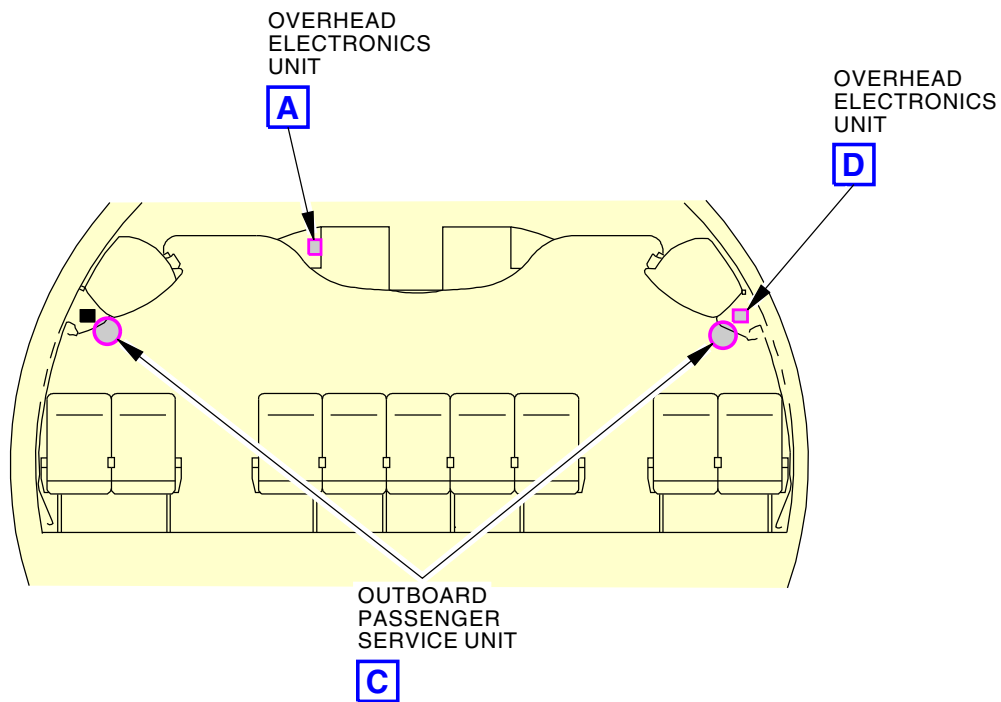
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LEGEND:

— OEU's

OVERHEAD ELECTRONICS UNIT LOCATIONS



PASSENGER COMPARTMENT

1353018 S0000241908_V2

Passenger Service Unit OEU Installation
Figure 402/23-33-02-990-804 (Sheet 1 of 3)

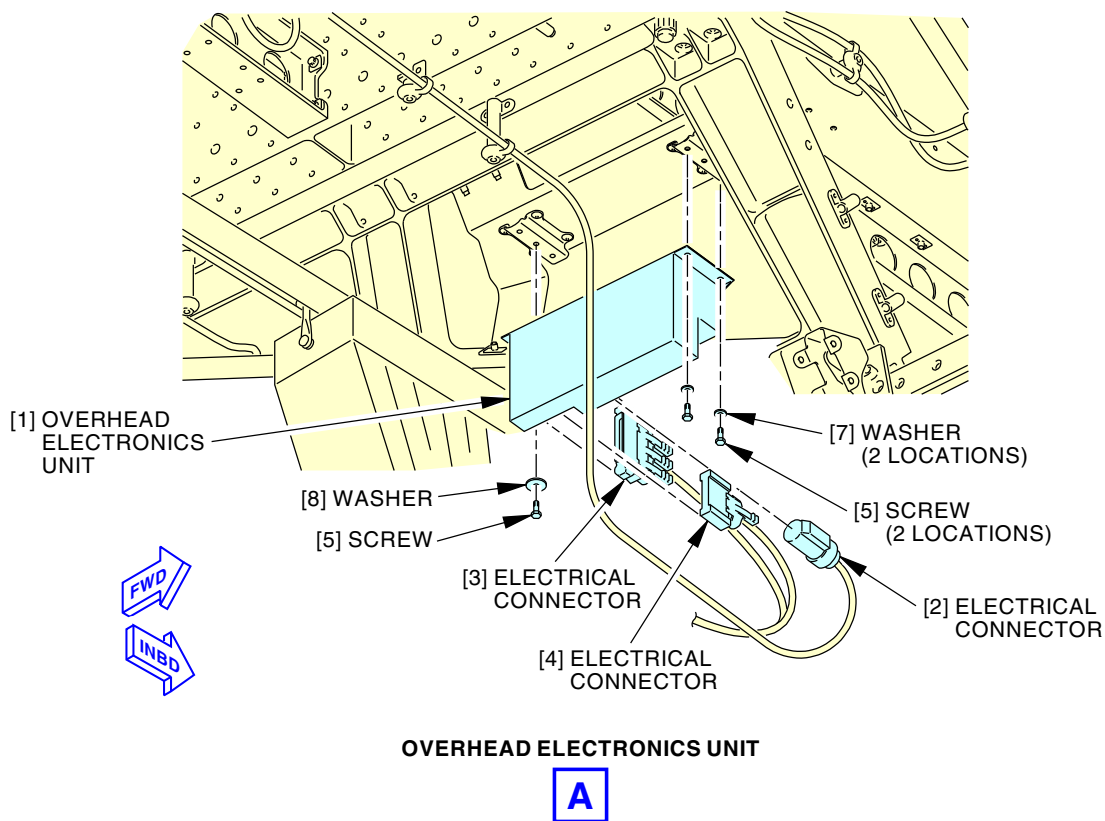
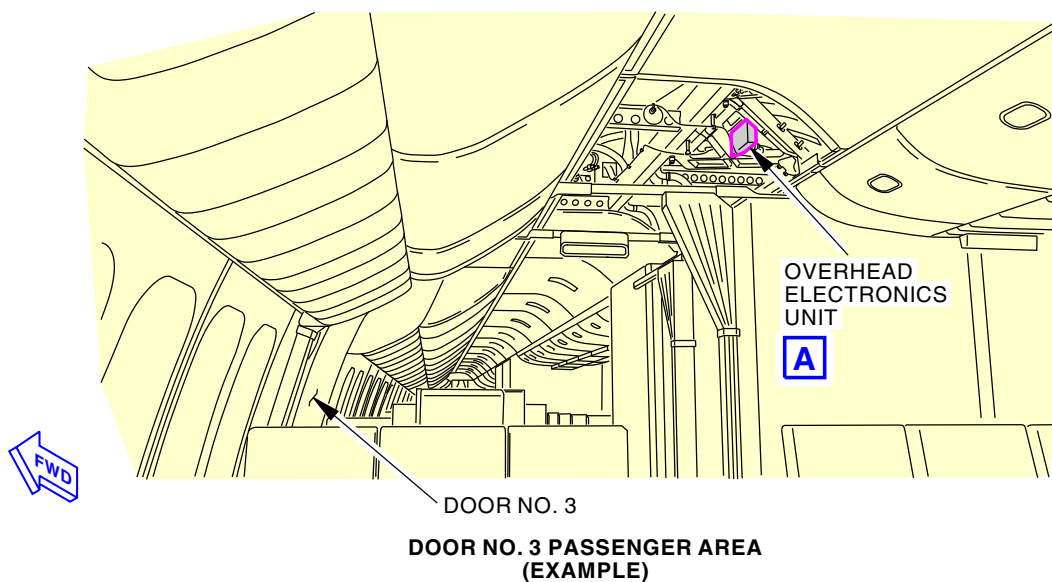
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1339727 S0000236828_V2

Passenger Service Unit OEU Installation
Figure 402/23-33-02-990-804 (Sheet 2 of 3)

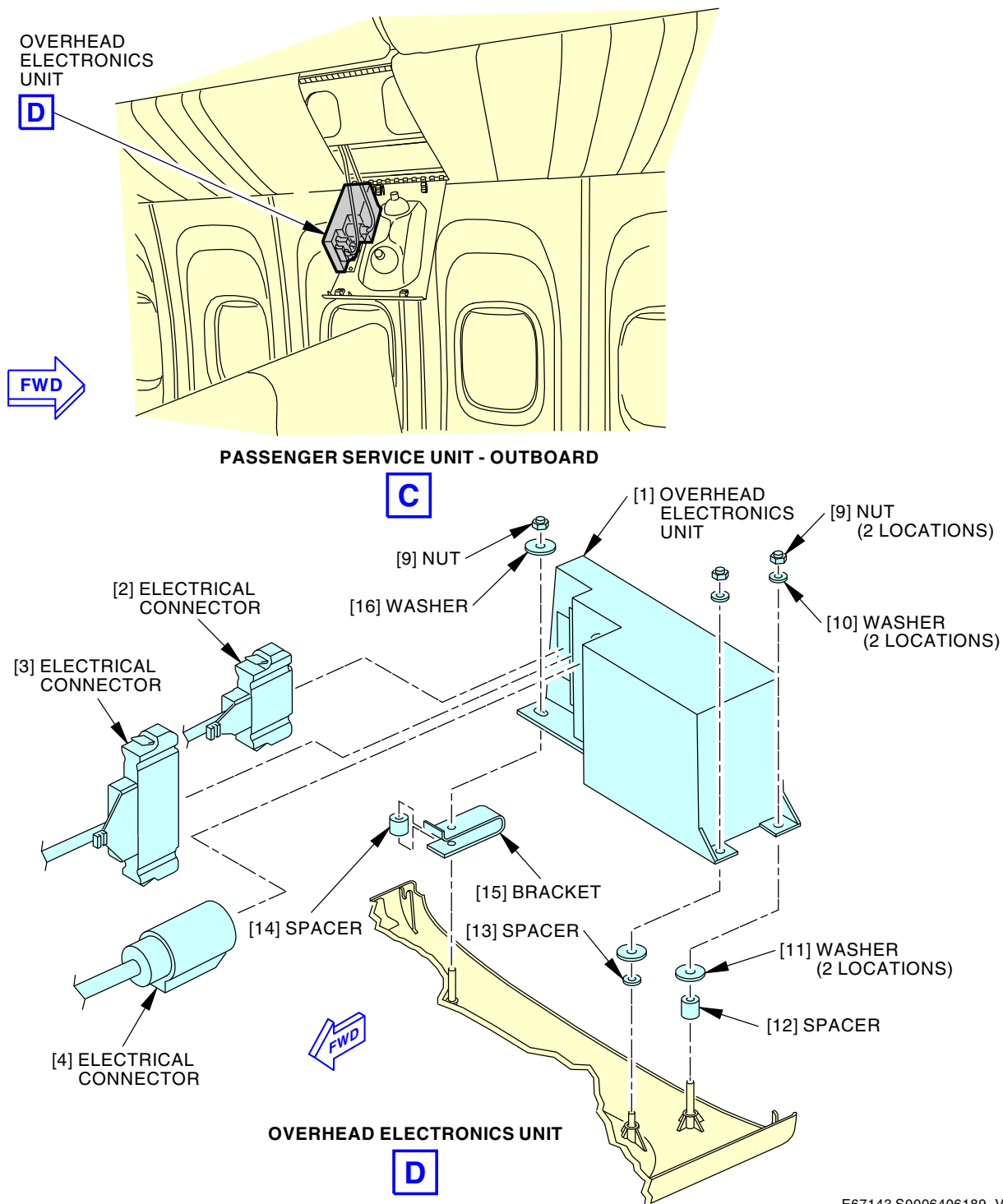
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E67143 S0006406189_V2

**Passenger Service Unit OEU Installation
Figure 402/23-33-02-990-804 (Sheet 3 of 3)**

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TASK 23-33-02-400-801

5. Center PSU Overhead Electronics Unit Installation

(Figure 402)

(Figure 401)

A. General

- (1) If you remove an Overhead Electronics Unit (OEU) and do not replace it, you must install a shorting plug in place of the OEU you removed.

B. References

Reference	Title
25-23-01-410-801	Passenger Service Unit (PSU) Closing (P/B 201)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Installation Procedure

SUBTASK 23-33-02-860-006

- (1) For the OEU in zone 1,

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-007

- (2) For the OEU in zone 2 center,

Make sure that these circuit breakers are open and have safety tags:

Right Power Management Panel, P210

Row	Col	Number	Name
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-008

- (3) For the OEU in zone 3 center,

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-084

- (4) For the OEU in zone 4 center,

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
E	22	C23465	OEU ZONE 4 CTR MAIN BUS

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Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-410-001



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE OEU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OEU.

- (5) To install the OEU [1] to the bracket, do these steps:
- (a) Remove the protective covers from the electrical connectors.
 - (b) Examine the electrical connectors for bent or broken pins, dirt, and damage.
 - (c) Connect the electrical connectors [2], [3], and [4].
 - (d) Put the OEU on the bracket.
- NOTE:** Some OEUs are protected by a removable OEU drip shield. If an OEU removal also removed the drip shield, the drip shield must be reinstalled.
- (e) If it is necessary to install the drip shield [61], put the drip shield tabs under the OEU [1].
 - (f) Install the screws [5] and washers [7], [8] which attach the OEU to the bracket.

SUBTASK 23-33-02-410-002

- (6) For the reading light PSU, do this task: Passenger Service Unit (PSU) Closing, TASK 25-23-01-410-801.

SUBTASK 23-33-02-860-009

- (7) For the OEU in zone 1,
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>
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-010

- (8) For the OEU in zone 2 center,
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>
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-011

- (9) For the OEU in zone 3 center,
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>
E	16	C23443	OEU ZONE3 CENTER MAIN BUS

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Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-085

- (10) For the OEU in zone 4 center,
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>
E	22	C23465	OEU ZONE 4 CTR MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-740-001

- (11) Do this task: Overhead Electronics Unit Installation Test, TASK 23-33-02-700-801.

————— **END OF TASK** —————

TASK 23-33-02-000-802

6. Outboard PSU Overhead Electronics Unit Removal

(Figure 402)

A. General

- (1) The Overhead Electronics Unit (OEU) is on the outboard Passenger Service Unit (PSU) reading light panel. You must release the latch and lower the outboard PSU panel to get access to an OEU.
- (2) If you remove an OEU and do not replace it, you must install a shorting plug in place of the OEU you removed.

B. References

<u>Reference</u>	<u>Title</u>
20-41-01-000-802	Conductive Dust Cap and Connector Cover Installation (P/B 201)
25-23-01-010-801	Passenger Service Unit (PSU) Opening (P/B 201)

C. Location Zones

<u>Zone</u>	<u>Area</u>
200	Upper Half of Fuselage

D. Removal Procedure

SUBTASK 23-33-02-860-012

- (1) For the OEU in zone 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>
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-013

- (2) For the OEU in zone 2 left,

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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>
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-014

- (3) For the OEU in zone 2 right,

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>
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-015

- (4) For the OEU in zone 3 left,

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>
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-016

- (5) For the OEU in zone 3 right,

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>
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-086

- (6) For the OEU in zone 4 left,

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>
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-860-087

- (7) For the OEU in zone 4 right,

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>
C	20	C23464	OEU ZONE 4 R MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

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SUBTASK 23-33-02-010-002

- (8) For the reading light PSU, do this task: Passenger Service Unit (PSU) Opening, TASK 25-23-01-010-801.

SUBTASK 23-33-02-020-002



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE OEU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OEU.

- (9) To remove the OEU [1] from the PSU reading light panel, do these steps:
- (a) Disconnect the electrical connectors [2], [3], and [4].
 - (b) Do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-41-01-000-802.
 - (c) While you hold the OEU, remove the nuts [9] and washers [10] and [16].
 - (d) Remove the OEU from the outboard PSU.
 - (e) Remove and save the washers [11], spacers [12], [13] and [14], and bracket[15].

END OF TASK

TASK 23-33-02-400-802

7. Outboard PSU Overhead Electronics Unit Installation

(Figure 402)

A. General

- (1) If you remove an Overhead Electronics Unit (OEU) and do not replace it, you must install a shorting plug in place of the OEU you removed.

B. References

Reference	Title
25-23-01-410-801	Passenger Service Unit (PSU) Closing (P/B 201)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Installation Procedure

SUBTASK 23-33-02-860-017

- (1) For the Overhead Electronics Unit (OEU) in zone 1,
Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-018

- (2) For the OEU in zone 2 left,

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Make sure that these circuit breakers are open and have safety tags:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-019

- (3) For the OEU in zone 2 right,

Make sure that these circuit breakers are open and have safety tags:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-020

- (4) For the OEU in zone 3 left,

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-021

- (5) For the OEU in zone 3 right,

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>
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-088

- (6) For the OEU in zone 4 left,

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-860-089

- (7) For the OEU in zone 4 right,

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	20	C23464	OEU ZONE 4 R MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

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SUBTASK 23-33-02-420-001



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE OEU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OEU.

- (8) To install the OEU [1] to the Passenger Service Unit (PSU) reading light panel, do these steps:
- (a) Remove the protective covers from the electrical connectors.
 - (b) Examine the electrical connectors for bent or broken pins, dirt, and damage.
 - (c) Install the bracket [15], spacers [12], [13] and [14], and washers [11].
 - (d) Put the OEU on the PSU.
 - (e) Install the nuts [9] and washers [10] and [16] which attach the OEU to the PSU.
 - (f) Connect the electrical connectors [2], [3], and [4].

SUBTASK 23-33-02-410-003

- (9) For the reading light PSU, do this task: Passenger Service Unit (PSU) Closing, TASK 25-23-01-410-801.

SUBTASK 23-33-02-860-022

- (10) For the OEU in zone 1,
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>
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-023

- (11) For the OEU in zone 2 left,
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>
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-024

- (12) For the OEU in zone 2 right,
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>
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-025

- (13) For the OEU in zone 3 left,

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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>
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-026

- (14) For the OEU in zone 3 right,

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>
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-090

- (15) For the OEU in zone 4 left,

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>
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-860-091

- (16) For the OEU in zone 4 right,

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>
C	20	C23464	OEU ZONE 4 R MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-740-002

- (17) Do this task: Overhead Electronics Unit Installation Test, TASK 23-33-02-700-801.

————— **END OF TASK** —————

TASK 23-33-02-000-803

8. Overdoor Overhead Electronics Unit Removal

(Figure 403)

A. General

- (1) The Overhead Electronics Unit (OEU) is on the overdoor panel. You must open the overdoor panel to get access to an OEU.

B. References

<u>Reference</u>	<u>Title</u>
20-41-01-000-802	Conductive Dust Cap and Connector Cover Installation (P/B 201)
25-21-08-000-801	Overdoor Panel Opening/Removal (P/B 201)

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C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Removal Procedure

SUBTASK 23-33-02-860-027

- (1) For the OEU in zone 1,

Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-028

- (2) For the OEU in zone 3 left,

Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-029

- (3) For the OEU in zone 3 right,

Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-092

- (4) For the OEU in zone 4 left,

Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-860-093

- (5) For the OEU in zone 4 right,

Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
C	20	C23464	OEU ZONE 4 R MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-010-003

- (6) Do this task: Overdoor Panel Opening/Removal, TASK 25-21-08-000-801.

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SUBTASK 23-33-02-020-003



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE OEU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OEU.

- (7) To remove the OEU [1] from the overdoor panel, do these steps:
- (a) Disconnect the electrical connectors [2], [3], and [4].
 - (b) Do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-41-01-000-802.
 - (c) While you hold the OEU, remove the screws [21] and washers [22] and [24] from the OEU.
 - (d) Remove the OEU from the overdoor panel.
 - (e) Remove and save the spacers [23].

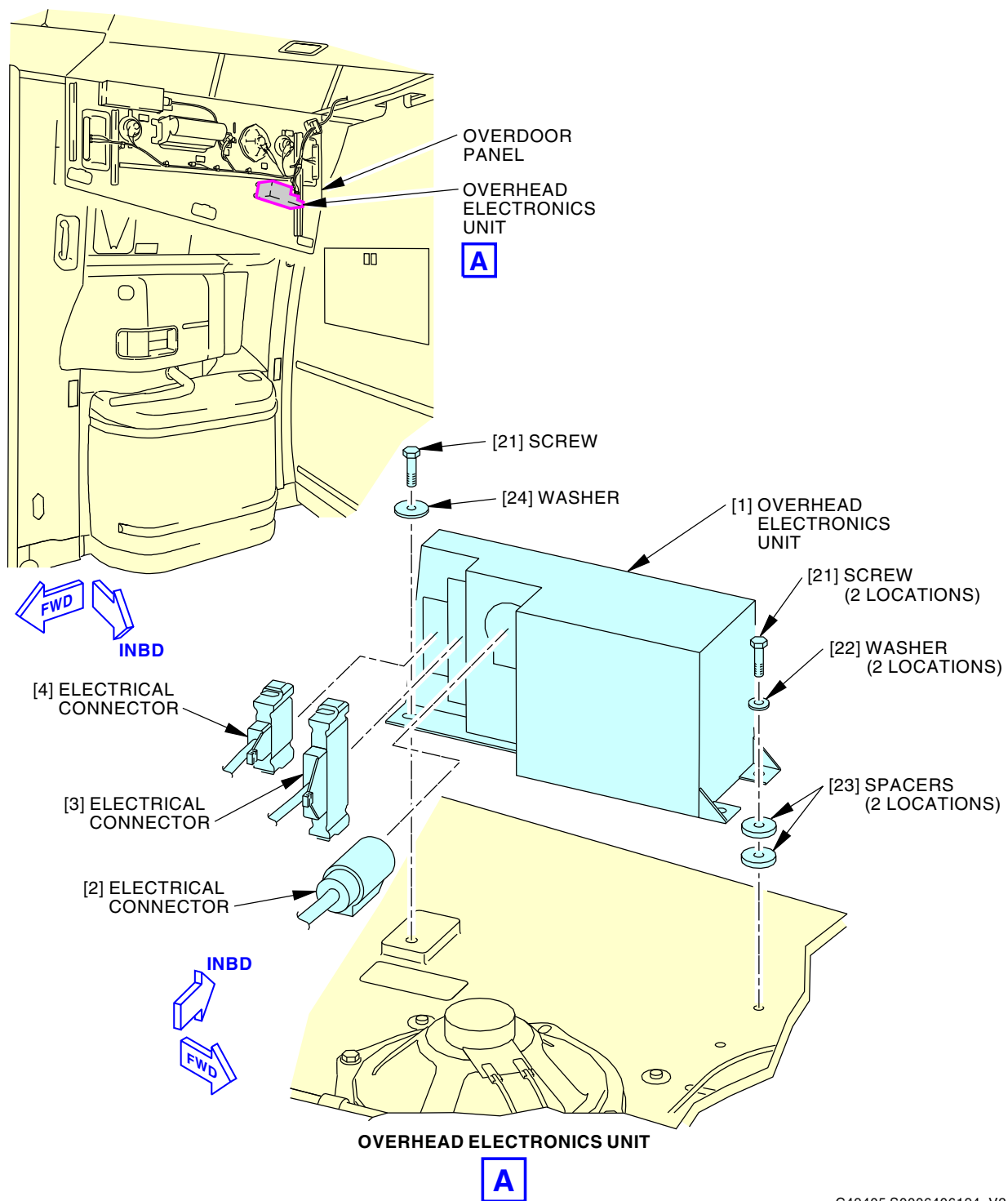
————— **END OF TASK** —————

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**Overdoor OEU Installation (Example)
Figure 403/23-33-02-990-805**

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TASK 23-33-02-400-803

9. Overdoor Overhead Electronics Unit Installation

(Figure 403)

(Figure 401)

A. References

Reference	Title
25-21-08-400-801	Overdoor Panel Installation/Closing (P/B 201)

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Installation Procedure

SUBTASK 23-33-02-860-030

- (1) For the Overhead Electronics Unit (OEU) in zone 1,
Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-031

- (2) For the OEU in zone 3 left,
Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-032

- (3) For the OEU in zone 3 right,
Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-094

- (4) For the OEU in zone 4 left,
Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-860-095

- (5) For the OEU in zone 4 right,

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Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	20	C23464	OEU ZONE 4 R MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-420-002



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE OEU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OEU.

- (6) To install the OEU [1] on the overdoor panel, do these steps:
- (a) Remove the protective covers from the electrical connectors.
 - (b) Examine the electrical connectors for bent or broken pins, dirt, and damage.
 - (c) Install the spacers [23].
 - (d) Put the OEU on the overdoor panel.
NOTE: Some OEUs are protected by a removable OEU drip shield. If an OEU removal also removed the drip shield, the drip shield must be reinstalled.
 - (e) If it is necessary to install the drip shield [61], put the drip shield tabs under the OEU [1].
 - (f) Install the screws [21] and washers [22] and [24] which attach the OEU to the overdoor panel.
 - (g) Connect the electrical connectors [2], [3], and [4].

SUBTASK 23-33-02-410-004

- (7) Do this task: Overdoor Panel Installation/Closing, TASK 25-21-08-400-801.

SUBTASK 23-33-02-860-033

- (8) For the OEU in zone 1,
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>
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-034

- (9) For the OEU in zone 3 left,
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>
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-035

- (10) For the OEU in zone 3 right,

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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>
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-096

- (11) For the OEU in zone 4 left,

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>
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-860-097

- (12) For the OEU in zone 4 right,

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>
C	20	C23464	OEU ZONE 4 R MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-740-003

- (13) Do this task: Overhead Electronics Unit Installation Test, TASK 23-33-02-700-801.

— END OF TASK —

TASK 23-33-02-000-804

10. Lavatory Overhead Electronics Unit Removal

(Figure 404, Figure 405)

A. General

- (1) The Overhead Electronics Unit (OEU) is above the center or outboard lavatory. You must open the inboard ceiling panel to get access to a center lavatory OEU. You must open the outboard ceiling panel to get access to an outboard lavatory OEU. The OEUs are installed on the stow bin rail.
- (2) The OEU for the lavatories forward of door 1 are installed on a lowered ceiling panel. To remove the forward lavatory OEU, do this task: Lowered Ceiling Overhead Electronics Unit Removal, TASK 23-33-02-000-805.

B. References

<u>Reference</u>	<u>Title</u>
20-41-01-000-802	Conductive Dust Cap and Connector Cover Installation (P/B 201)
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)

C. Location Zones

<u>Zone</u>	<u>Area</u>
200	Upper Half of Fuselage

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D. Removal Procedure

SUBTASK 23-33-02-860-036

- (1) For the OEU in zone 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>
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-037

- (2) For the OEU in zone 2 left,

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>
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-038

- (3) For the OEU in zone 2 right,

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>
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-039

- (4) For the OEU in zone 2 center,

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>
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-040

- (5) For the OEU in zone 3 left,

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>
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-041

- (6) For the OEU in zone 3 right,

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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>
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-042

- (7) For the OEU in zone 3 center,

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>
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-010-004

- (8) Do this task: Main Ceiling Panel - Removal, TASK 25-21-06-000-801.

ARO ALL; AIRPLANES WITH OVER-MONUMENT FAIRING/PANEL

SUBTASK 23-33-02-010-008

- (9) To gain access to the LAV OEU, do this step:

- (a) To remove the Over-monument Fairing (panel), loosen the quarter-turn fasteners.

ARO ALL

SUBTASK 23-33-02-020-004



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE OEU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OEU.

- (10) To remove the OEU [1], do these steps:
- (a) Disconnect the electrical connectors [2], [3], and [4].
 - (b) Do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-41-01-000-802.
 - (c) Remove the screws [31] and washers [32] and [33] which attach the OEU [1] to the bracket on the bin rail.
 - (d) Remove the OEU [1].

————— END OF TASK —————

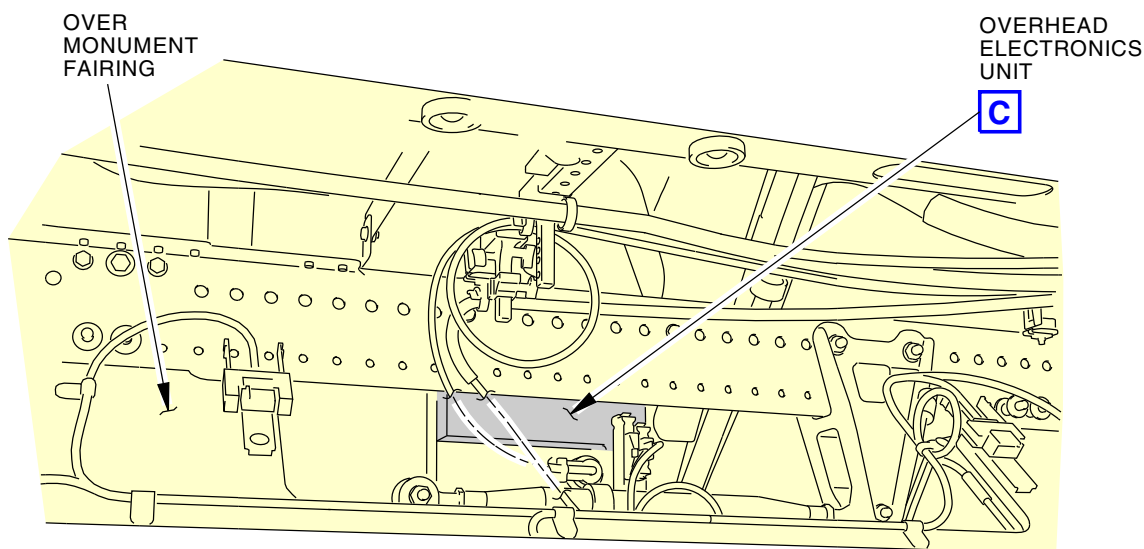
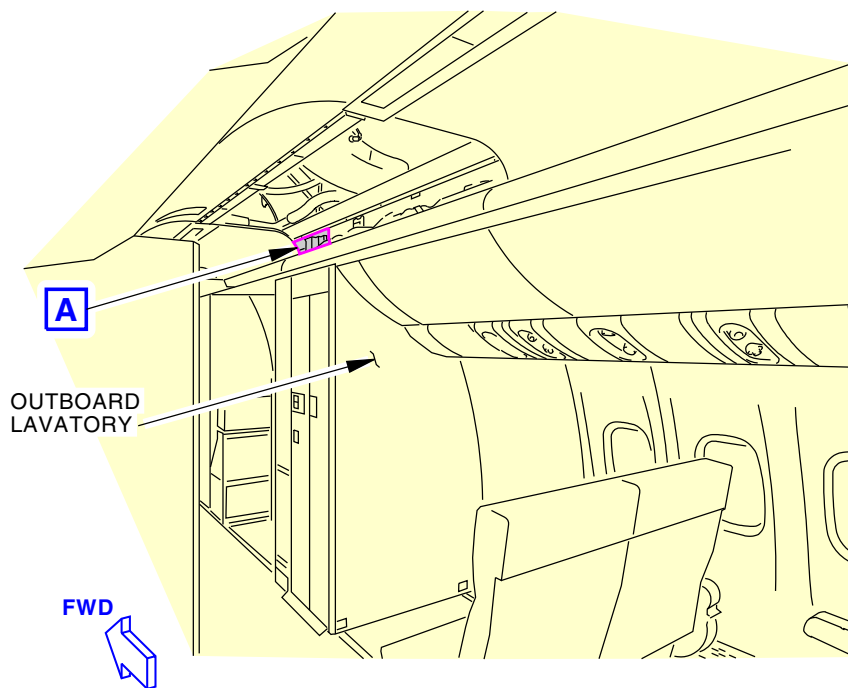
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**OUTBOARD LAVATORY INSTALLATION
(EXAMPLE)
(ACCESS PANEL NOT SHOWN)**

1 IF INSTALLED



C49409 S0006406197_V3

**Outboard Lavatory Installation (Example)
Figure 404/23-33-02-990-806 (Sheet 1 of 2)**

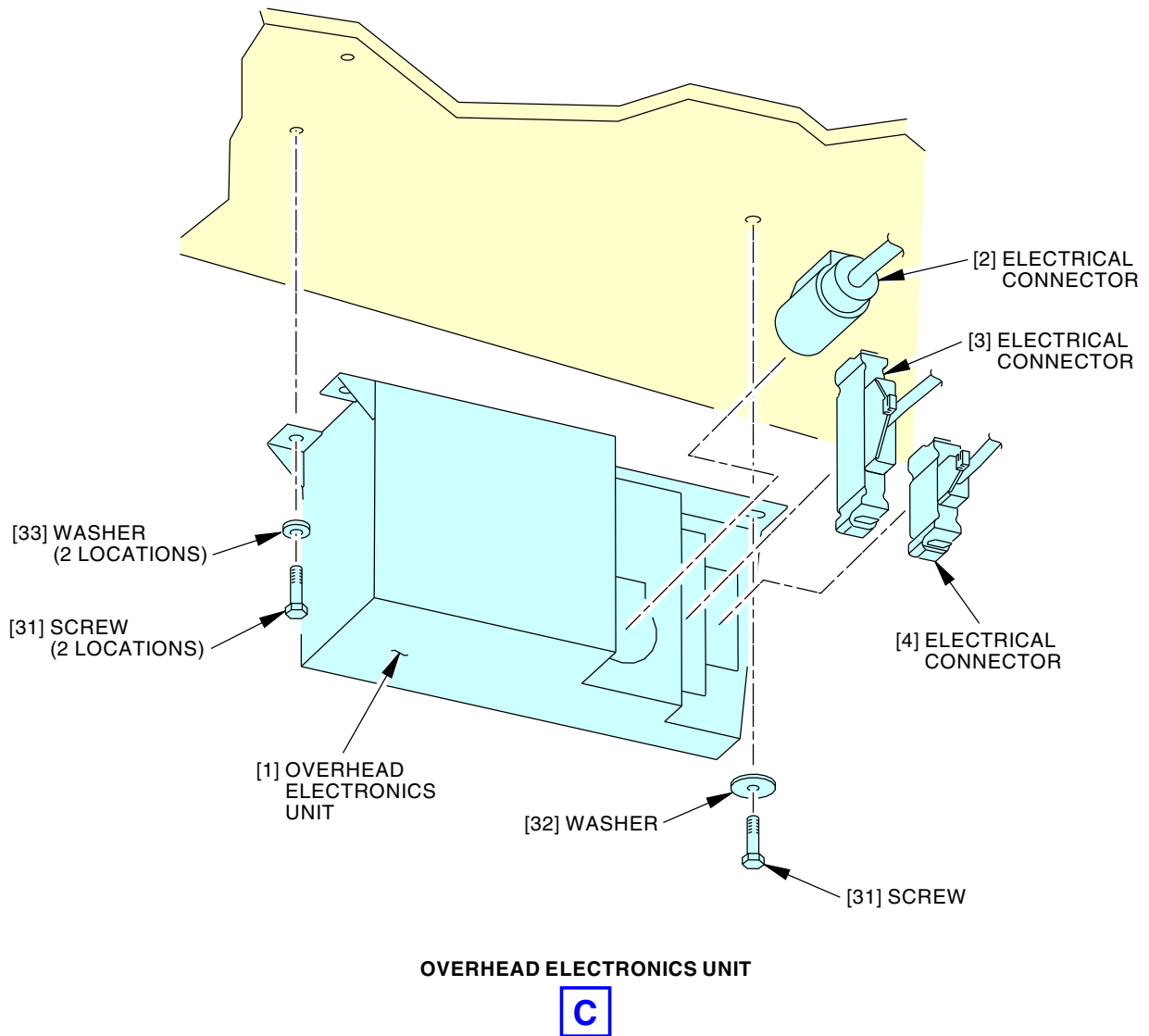
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C53155 S0006406198_V2

Outboard Lavatory Installation (Example)
Figure 404/23-33-02-990-806 (Sheet 2 of 2)

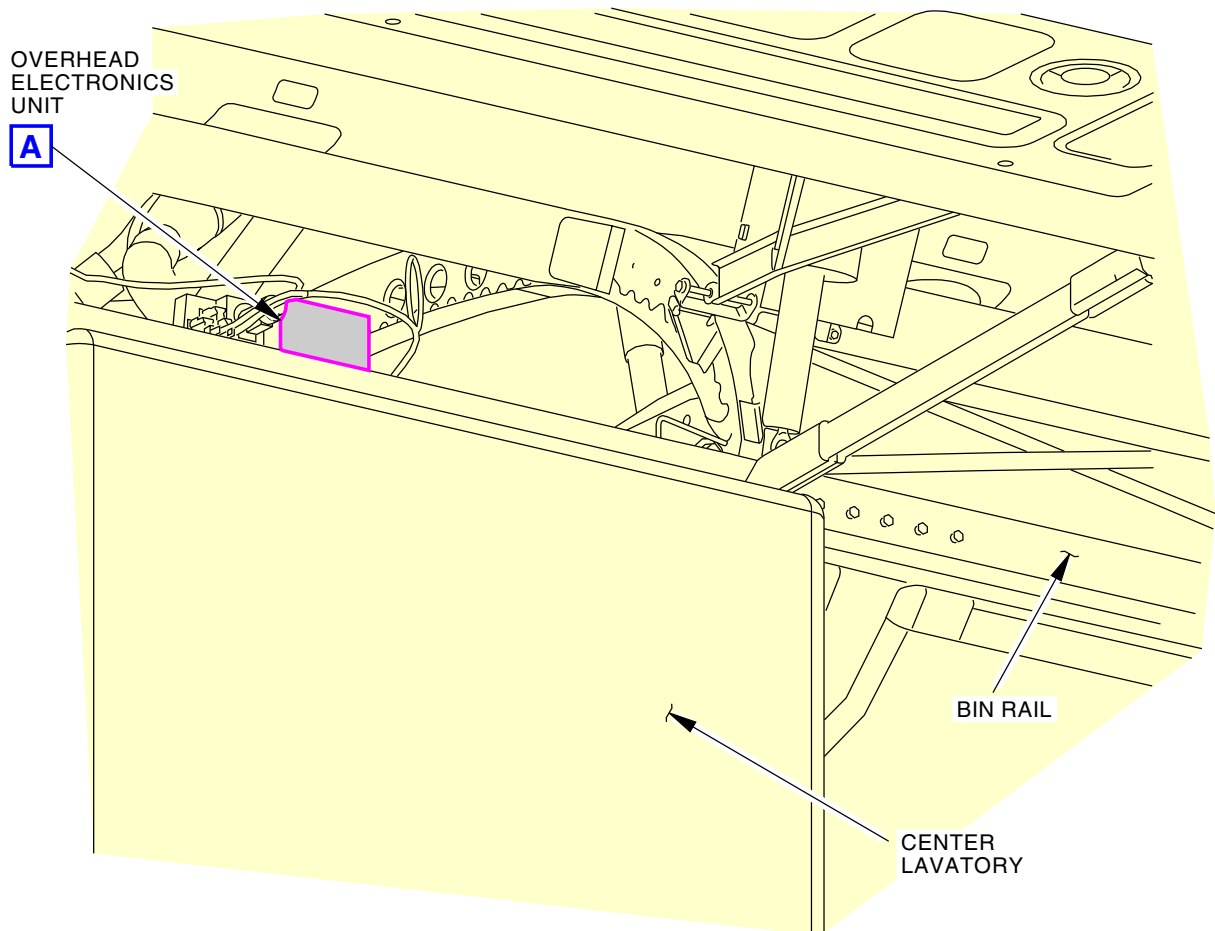
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F03407 S0006406199_V2

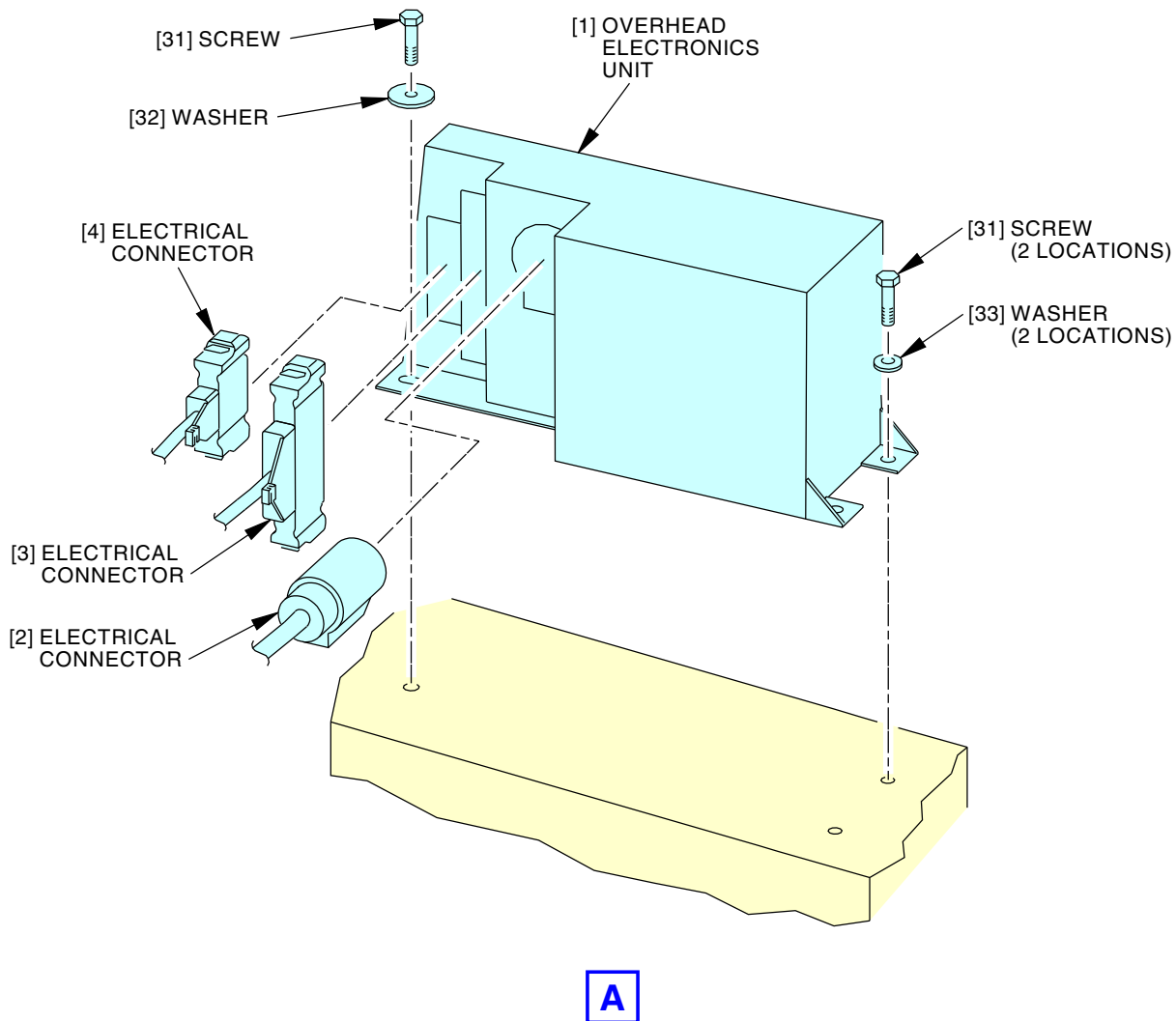
Center Lavatory OEU Installation (Example)
Figure 405/23-33-02-990-807 (Sheet 1 of 2)

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F03417 S0006406200_V2

**Center Lavatory OEU Installation (Example)
Figure 405/23-33-02-990-807 (Sheet 2 of 2)**

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TASK 23-33-02-400-804

11. Lavatory Overhead Electronics Unit Installation

(Figure 404, Figure 405)

A. General

- (1) The OEU for the lavatories forward of door 1 are installed on a lowered ceiling panel. To install the forward lavatory OEU, do this task: Lowered Ceiling Overhead Electronics Unit Installation, TASK 23-33-02-400-805.

B. References

Reference	Title
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Installation Procedure

SUBTASK 23-33-02-860-043

- (1) For the Overhead Electronics Unit (OEU) in zone 1,
Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-044

- (2) For the OEU in zone 2 left,
Make sure that these circuit breakers are open and have safety tags:

Right Power Management Panel, P210

Row	Col	Number	Name
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-045

- (3) For the OEU in zone 2 right,
Make sure that these circuit breakers are open and have safety tags:

Right Power Management Panel, P210

Row	Col	Number	Name
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-046

- (4) For the OEU in zone 2 center,
Make sure that these circuit breakers are open and have safety tags:

Right Power Management Panel, P210

Row	Col	Number	Name
D	10	C23416	OEU ZONE2 CENTER MAIN BUS

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(Continued)

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-047

- (5) For the OEU in zone 3 left,

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-048

- (6) For the OEU in zone 3 right,

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>
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-049

- (7) For the OEU in zone 3 center,

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-420-003



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE OEU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OEU.

- (8) To install the OEU [1], do these steps:
- Remove the protective covers from the electrical connectors.
 - Examine the electrical connectors for bent or broken pins.
 - Put the OEU on the bracket on the bin rail above the lavatory.
 - Install the screws [31] and washers [32] and [33] that attach the OEU to the structure.
 - Connect the electrical connectors [2], [3], and [4].

ARO ALL; AIRPLANES WITH OVER-MONUMENT FAIRING/PANEL

SUBTASK 23-33-02-410-011

- (9) To install the Over-monument Fairing (panel), tighten the quarter-turn fasteners.

ARO ALL

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SUBTASK 23-33-02-410-005

- (10) Do this task: Main Ceiling Panel - Installation, TASK 25-21-06-400-801.

SUBTASK 23-33-02-860-050

- (11) For the OEU in zone 1,

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>
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-051

- (12) For the OEU in zone 2 left,

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>
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-052

- (13) For the OEU in zone 2 right,

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>
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-053

- (14) For the OEU in zone 2 center,

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>
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-054

- (15) For the OEU in zone 3 left,

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>
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-055

- (16) For the OEU in zone 3 right,

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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>
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-056

- (17) For the OEU in zone 3 center,

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>
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-740-004

- (18) Do this task: Overhead Electronics Unit Installation Test, TASK 23-33-02-700-801.

————— END OF TASK —————

TASK 23-33-02-000-805

12. Lowered Ceiling Overhead Electronics Unit Removal

(Figure 406)

A. General

- (1) The Overhead Electronics Units (OEUs) for the lavatories forward of door 1 are on the lowered ceiling panel. You must open the lowered ceiling panel to get access to an OEU.

B. References

<u>Reference</u>	<u>Title</u>
20-41-01-000-802	Conductive Dust Cap and Connector Cover Installation (P/B 201)
25-21-07-000-801	Lowered Ceiling Panel Removal (P/B 401)

C. Location Zones

<u>Zone</u>	<u>Area</u>
200	Upper Half of Fuselage

D. Removal Procedure

SUBTASK 23-33-02-860-057

- (1) For the OEU in zone 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>
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-058

- (2) For the OEU in zone 2 left,

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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>
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-059

- (3) For the OEU in zone 2 right,

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>
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-060

- (4) For the OEU in zone 2 center,

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>
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-061

- (5) For the OEU in zone 3 left,

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>
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-062

- (6) For the OEU in zone 3 right,

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>
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-063

- (7) For the OEU in zone 3 center,

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>
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-107

- (8) For the OEU in zone 4 left,

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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>
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-010-005

(9) Lower the ceiling panel (TASK 25-21-07-000-801).

SUBTASK 23-33-02-020-005



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE OEU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OEU.

- (10) To remove the OEU [1] from the lowered ceiling panel, do these steps:
- (a) Disconnect the electrical connectors [2], [3], and [4].
 - (b) Do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-41-01-000-802.
 - (c) While you hold the OEU, remove the screws [51] and washers [52] and [54] from the OEU [1].
 - (d) Remove the OEU [1].
 - (e) Remove and save the spacers [53].

————— **END OF TASK** —————

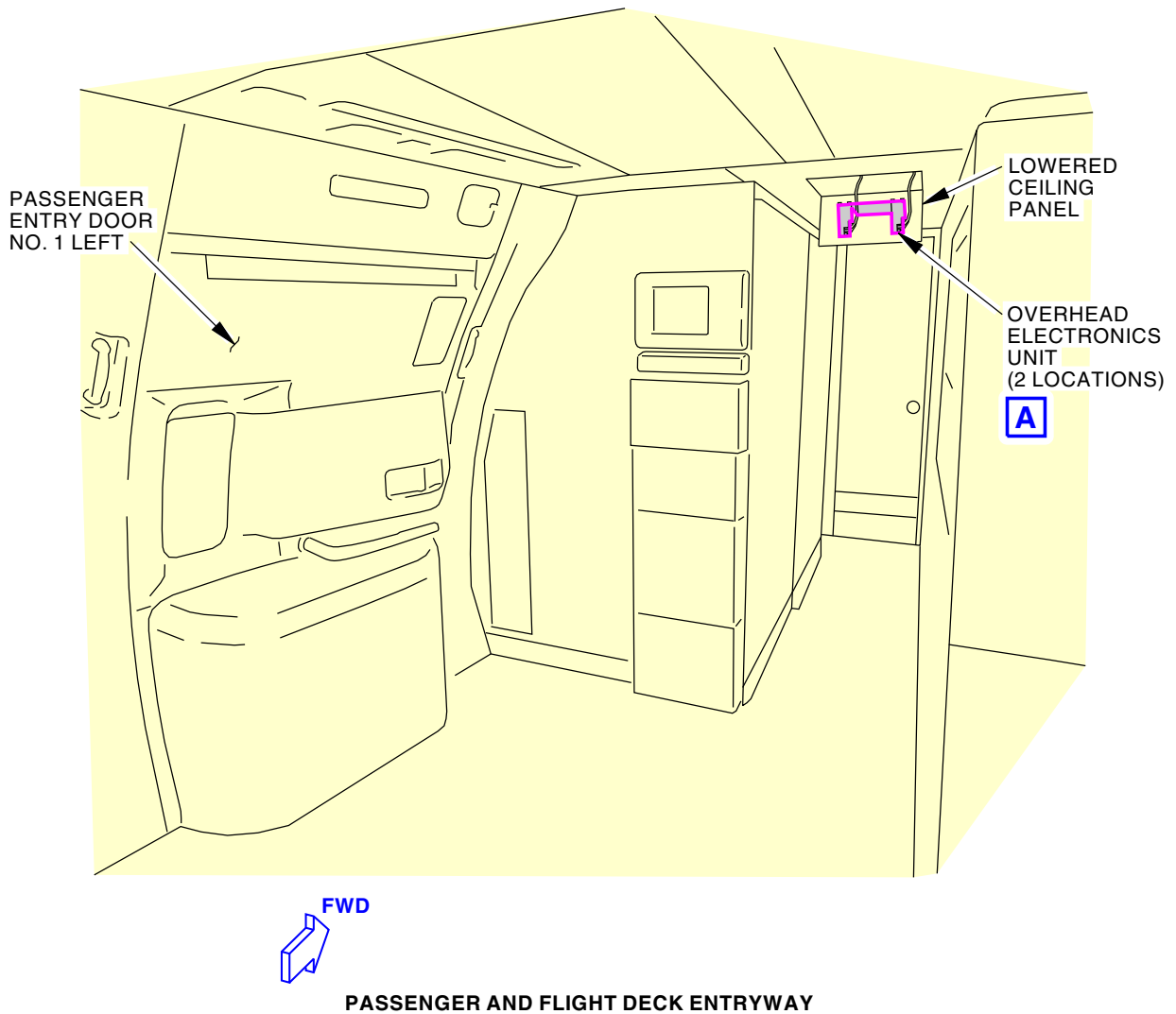
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F03423 S0006406203_V2

Lowered Ceiling OEU Installation
Figure 406/23-33-02-990-808 (Sheet 1 of 3)

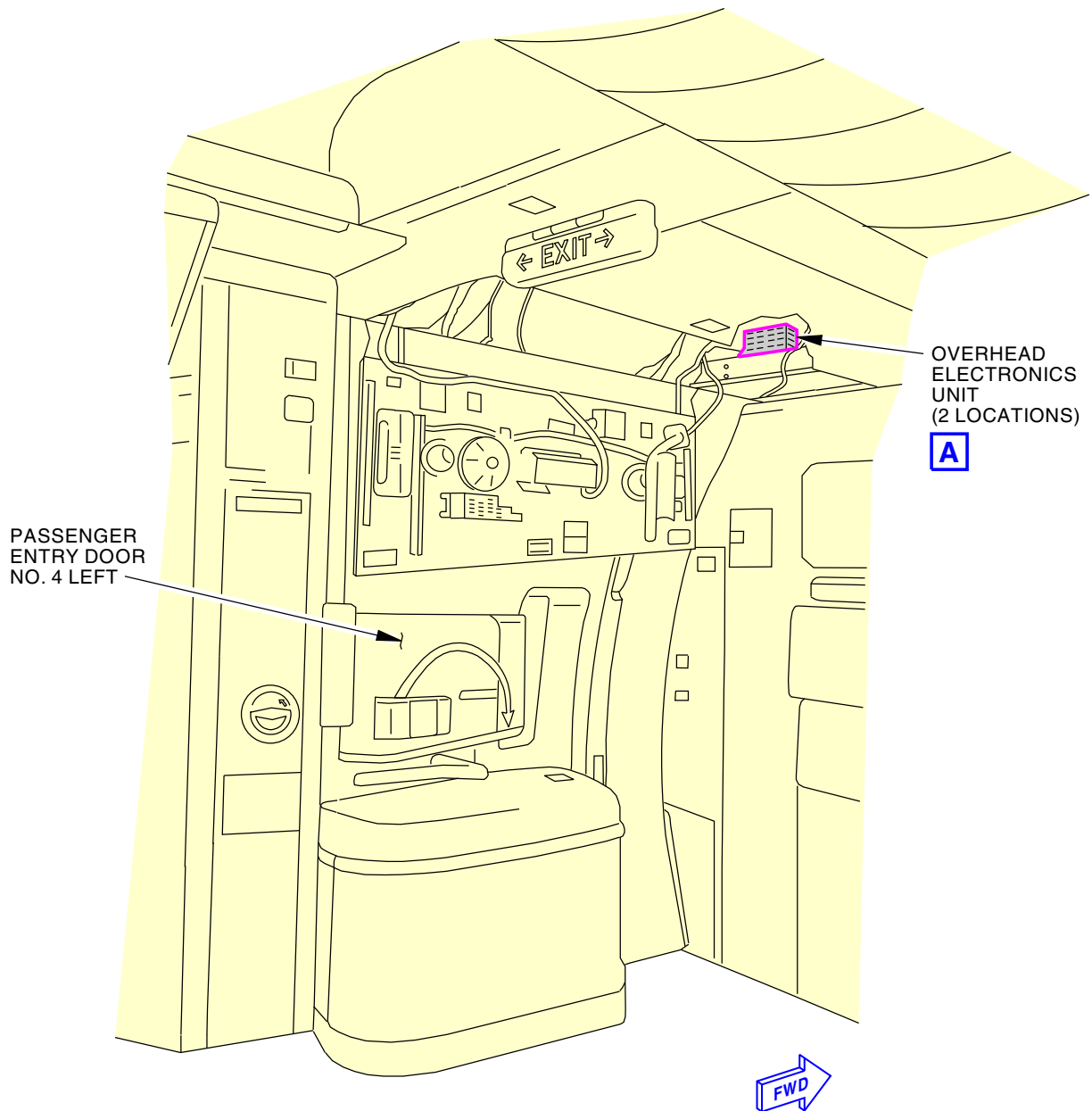
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 BOEING
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F03426 S0006406204_V2

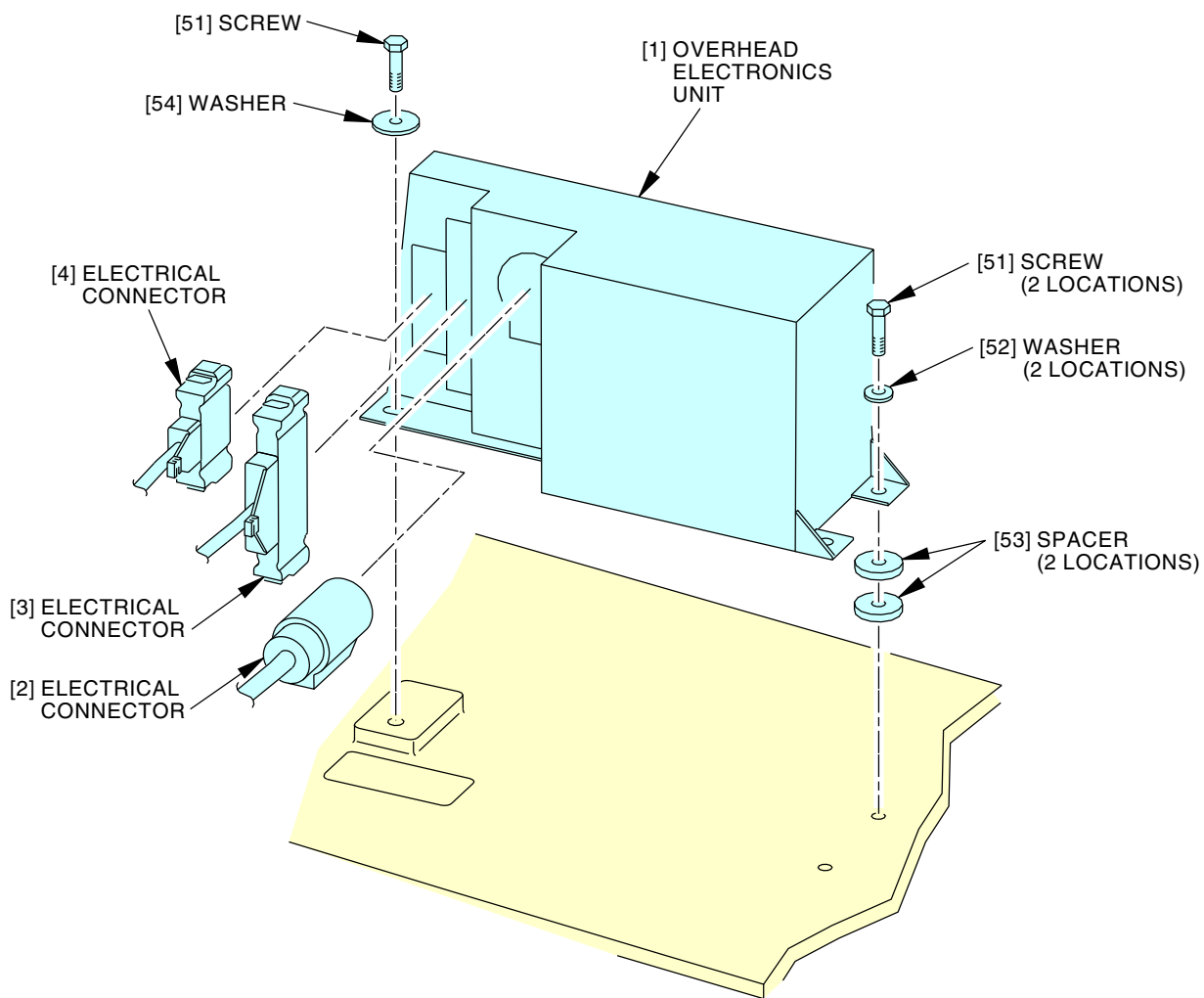
Lowered Ceiling OEU Installation
Figure 406/23-33-02-990-808 (Sheet 2 of 3)

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**OVERHEAD ELECTRONICS UNIT
(EXAMPLE)**

A

F03427 S0006406205_V2

**Lowered Ceiling OEU Installation
Figure 406/23-33-02-990-808 (Sheet 3 of 3)**

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TASK 23-33-02-400-805

13. Lowered Ceiling Overhead Electronics Unit Installation

(Figure 406)

(Figure 401)

A. References

Reference	Title
25-21-07-400-801	Lowered Ceiling Panel Installation (P/B 401)

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Installation Procedure

SUBTASK 23-33-02-860-064

- (1) For the Overhead Electronics Unit (OEU) in zone 1,
Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-065

- (2) For the OEU in zone 2 left,
Make sure that these circuit breakers are open and have safety tags:

Right Power Management Panel, P210

Row	Col	Number	Name
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-066

- (3) For the OEU in zone 2 right,
Make sure that these circuit breakers are open and have safety tags:

Right Power Management Panel, P210

Row	Col	Number	Name
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-067

- (4) For the OEU in zone 2 center,
Make sure that these circuit breakers are open and have safety tags:

Right Power Management Panel, P210

Row	Col	Number	Name
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-068

- (5) For the OEU in zone 3 left,

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Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-069

- (6) For the OEU in zone 3 right,

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>
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-070

- (7) For the OEU in zone 3 center,

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-108

- (8) For the OEU in zone 4 left,

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-420-004



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE OEU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OEU.

- (9) To install the OEU [1] on the lowered ceiling panel, do these steps:

- Remove the protective covers from the electrical connectors.
- Examine the electrical connectors for bent or broken pins, dirt, and damage.
- Install the spacers [53].
- Put the OEU [1] on the lowered ceiling panel.

NOTE: Some OEUs are protected by a removable OEU drip shield. If an OEU removal also removed the drip shield, the drip shield must be reinstalled.

- If it is necessary to install the drip shield [61], put the drip shield tabs under the OEU [1].
- While you hold the OEU [1], install the screws [51] and washers [52] and [54] that attach the OEU [1] to the lowered ceiling panel.
- Connect the electrical connectors [2], [3], and [4].

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SUBTASK 23-33-02-410-006

- (10) Close the lowered ceiling panel. To close it, (TASK 25-21-07-400-801).

SUBTASK 23-33-02-860-071

- (11) For the OEU in zone 1,

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>
A	15	C23437	OEU ZONE1 MAIN BUS
F	2	C23439	OEU ZONE1 XFER BUS

SUBTASK 23-33-02-860-072

- (12) For the OEU in zone 2 left,

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>
C	10	C23414	OEU ZONE2 LEFT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-073

- (13) For the OEU in zone 2 right,

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>
E	10	C23418	OEU ZONE2 RIGHT MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-074

- (14) For the OEU in zone 2 center,

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>
D	10	C23416	OEU ZONE2 CENTER MAIN BUS
E	24	C23420	OEU ZONE2 XFER BUS

SUBTASK 23-33-02-860-075

- (15) For the OEU in zone 3 left,

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>
D	16	C23441	OEU ZONE3 LEFT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-076

- (16) For the OEU in zone 3 right,

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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>
D	15	C23445	OEU ZONE3 RIGHT MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-077

- (17) For the OEU in zone 3 center,

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>
E	16	C23443	OEU ZONE3 CENTER MAIN BUS
H	7	C23447	OEU ZONE3 XFER BUS

SUBTASK 23-33-02-860-109

- (18) For the OEU in zone 4 left,

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>
F	24	C23466	OEU ZONE 4 L MAIN BUS
G	6	C23467	OEU ZONE 4 XFER BUS

SUBTASK 23-33-02-740-005

- (19) Do this task: Overhead Electronics Unit Installation Test, TASK 23-33-02-700-801.

————— **END OF TASK** —————

TASK 23-33-02-700-801

14. Overhead Electronics Unit Installation Test

A. References

<u>Reference</u>	<u>Title</u>
23-39-00-400-811	Configuration Database and Lighting Database Installation (Phase II) (P/B 201)
23-39-00-700-802	Operational Program Software and Database Verification Test (P/B 201)
23-39-00-700-804	Operational Program Software and Database Verification Test (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Location Zones

<u>Zone</u>	<u>Area</u>
200	Upper Half of Fuselage

C. Installation Test

SUBTASK 23-33-02-860-002

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-33-02-740-008

- (2) Do this task: Configuration Database and Lighting Database Installation (Phase II), TASK 23-39-00-400-811.

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SUBTASK 23-33-02-740-006

- (3) Do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-802 or Operational Program Software and Database Verification Test, TASK 23-39-00-700-804.

SUBTASK 23-33-02-740-007

- (4) Do the OEU installation test on the Cabin System Control Panel (CSCP):

- (a) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE
 - 2) CABIN TESTS
 - 3) ENGINEERING TESTS...
 - 4) COMMAND OUTPUT...
 - 5) OVERHEAD ELECTRONICS UNIT (OEU).
- (b) Touch the selection on the CSCP for the applicable ZMU.
- (c) Touch the selection on the CSCP for the applicable column.
- (d) Touch the selection on the CSCP for the applicable OEU.
- (e) Touch the selection on the CSCP for ALL ports.
- (f) Touch the selection on the CSCP for ALL ballasts.
- (g) Touch the selection on the CSCP for GROUND for ports.
- (h) Touch the selection on the CSCP for OPEN for the ballast/signal.
- (i) Make sure that the lights for the applicable OEU come on.
- (j) Touch MAIN MENU on the CSCP.

NOTE: Touch CONTINUE SELECTION if the message "Note: States commanded will not be saved" shows on the CSCP.

————— **END OF TASK** —————

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CABIN MANAGEMENT SYSTEM - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

- (1) An Operational Program Software (OPS) and database verification test
- (2) An Operational Program Software (OPS) installation (Phase II)
- (3) A database installation
- (4) A data installation from the Cabin System Control Panel (CSCP) disk drive to the CSCP mass storage

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- (5) Staging software to the CSS MSD (Phase I).
- (6) An Operational Program Software (OPS) removal from the CSCP mass storage
- (7) Software removal from the CSS MSD.

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- (8) A database removal from the CSCP mass storage

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- (9) A database removal from the CSS MSD.

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- (10) A Mood Lighting System (MLS) Operational Program Software (OPS) removal from the CSCP mass storage

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B. This procedure applies to these core components:

- (1) Cabin Area Control Panel (CACP)
- (2) Cabin System Control Panel (CSCP)
- (3) Cabin System Management Unit (CSMU)

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- (4) Mood Lighting System (MLS) / Enhanced Lighting System

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- (5) Overhead Electronics Unit (OEU)
- (6) Passenger Address/Cabin Interphone Controller (PA/CI)
- (7) Speaker Drive Module (SDM)
- (8) Zone Management Unit (ZMU)

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C. Phase I loading installs software into the mass storage unit.

- (1) The Cabin System Control Panels (CSCPs) that have a Mass Memory Card (MMC) do not do a data installation from the CSCP disk drive to the CSCP mass storage (Phase I load) of CSS Operational Program Software (OPS).
- (2) CSS with MLS does both a Configuration Database (CDB) and Lighting Database (LDB) installation and removal.

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- (3) CSS with MLS does data installation from the CSCP disk drive to the CSCP mass storage (Phase I load) of MLS Operational Program Software (OPS) and MLS OPS removal from mass storage.
- D. Phase II loading installs software into the LRUs from the mass storage unit.
 - (1) The Cabin System Control Panels (CSCPs) that have a Mass Memory Card (MMC) do not do Phase II load of the CSCP Operational Program Software (OPS).

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- E. Phase I stages the software to the CSS mass storage device (MSD), which is part of the CSCP LRU.
- F. Phase II loads software from the CSS MSD to the applicable LRU using the CSCP.

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- G. The tables below show the approximate data transfer times (in minutes) for components that use the CSCP for software installation.
 - (1) Data transfer times can be different from those given in the tables. Data transfers can fail, and failure of the data transfer will increase the total time necessary for software installation.
 - (2) If a system has more than one of a given component, the time given remains the same.
 - (3) This table is for cabin service system (CSS).

Table 201/23-39-00-993-802

COMPONENT	LOAD TIME
PAC	10 MIN.
CIC	10 MIN.
CSCP	16 MIN.
CACPs	10 MIN.
CSMU	3 MIN.
ZMU	3 MIN.
SDMs	3 MIN.
OEUs	3 MIN.
ALCs	5–10 MIN.
LFs	5–10 MIN.
CDB	8 MIN.

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TASK 23-39-00-700-802

2. Operational Program Software and Database Verification Test

A. General

- (1) This task makes sure that the correct operational program software and configuration database is installed in the applicable LRU.
- (2) The Cabin System Control Panel (CSCP) is necessary to do this task.

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B. References

Reference	Title
23-39-16-000-803	Mass Memory Card (MMC) Removal (P/B 201)
23-39-16-400-801	Mass Memory Card (MMC) Installation (P/B 201)

C. Location Zones

Zone	Area
231	Passenger Compartment, Left - Section 43

D. Verification Test for Operational Program Software (OPS) and Database

SUBTASK 23-39-00-700-004

- (1) For CACP, CSCP, CSMU, OEU, PA/CI, SDM, and ZMU;

Do the software and database verification test from the CSCP:

- (a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN CONFIGURATION
- 3) CONFIGURATION CHECK
- 4) The applicable LRU

NOTE: If the LRU has more than one installation, select an individual LRU or a group of LRUs and then touch CONTINUE.

If the LRU has more than one installation, you can select LRU SUMMARY. The CSCP will show the number of LRUs in the configuration database and the number of LRUs that respond.

- (b) Make sure the part numbers shown on the CSCP are correct.

NOTE: Make sure you know the correct part numbers when you look at the part numbers on the CSCP. For the LRU to be an approved installation, the correct software must be installed.

- (c) If the software part number is incorrect, do one of the following:

- 1) For all LRUs except the CSCP with MMC, do this task: Operational Program Software Installation (Phase II), TASK 23-39-00-400-808.
- 2) For the CSCP with MMC, do these tasks: Mass Memory Card (MMC) Removal, TASK 23-39-16-000-803 and Mass Memory Card (MMC) Installation, TASK 23-39-16-400-801.

- (d) If the database part number is incorrect, do this task:

- 1) Configuration Database and Lighting Database Installation (Phase II), TASK 23-39-00-400-811.

SUBTASK 23-39-00-700-006

- (2) FOR ALC AND LF;

Do the software and database verification test from the CSCP:

- (a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN CONFIGURATION
- 3) CONFIGURATION CHECK

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4) NEXT PAGE

5) The applicable LRU

NOTE: The CSCP will show the number of LRUs in the configuration database and the number of LRUs that respond.

6) CONTINUE

(b) Make sure the part numbers shown on the CSCP are correct.

NOTE: Make sure you know the correct part numbers when you look at the part numbers on the CSCP. For the LRU to be an approved installation, the correct software must be installed.

(c) If the software part number is incorrect, do this task: Operational Program Software Installation (Phase II), TASK 23-39-00-400-808.

(d) If the database part number is incorrect, do this task: Configuration Database and Lighting Database Installation (Phase II), TASK 23-39-00-400-811.

————— END OF TASK —————

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TASK 23-39-00-700-804

3. Operational Program Software and Database Verification Test

A. General

(1) This task makes sure that the correct operational program software and configuration database is installed in the applicable LRU.

(2) The Cabin System Control Panel (CSCP) is necessary to do this task.

B. Location Zones

Zone	Area

221	Passenger Compartment, Left - Section 41

231	Passenger Compartment, Left - Section 43

C. Verification Test for Operational Program Software (OPS) and Database

SUBTASK 23-39-00-700-007

(1) For CACP, CSCP, CSMU, OEU, PA/CI, SDM, and ZMU;

Do the software and database verification test from the CSCP:

(a) Touch these selections on the CSCP:

1) CABIN MAINTENANCE

2) CABIN CONFIGURATION

3) CONFIGURATION CHECK

4) The applicable LRU

NOTE: If the LRU has more than one installation, select an individual LRU or a group of LRUs and then touch CONTINUE.

If the LRU has more than one installation, you can select CSS CONFIGURATION ALL. The CSCP will show the number of LRUs in the configuration database and the number of LRUs that respond.

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- (b) Make sure the part numbers shown on the CSCP are correct.

NOTE: Make sure you know the correct part numbers when you look at the part numbers on the CSCP. For the LRU to be an approved installation, the correct software must be installed.

- (c) If the software part number is incorrect, do this task: Operational Program Software Installation (Phase II), TASK 23-39-00-470-801.
- (d) If the database part number is incorrect, do this task:
- 1) Configuration Database and Lighting Database Installation (Phase II), TASK 23-39-00-400-811.

SUBTASK 23-39-00-700-008

- (2) FOR ALC AND LF;

Do the software and database verification test from the CSCP:

- (a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN CONFIGURATION
- 3) CONFIGURATION CHECK
- 4) NEXT PAGE
- 5) The applicable LRU

NOTE: The CSCP will show the number of LRUs in the configuration database and the number of LRUs that respond.

- 6) CONTINUE

- (b) Make sure the part numbers shown on the CSCP are correct.

NOTE: Make sure you know the correct part numbers when you look at the part numbers on the CSCP. For the LRU to be an approved installation, the correct software must be installed.

- (c) If the software part number is incorrect, do this task: Operational Program Software Installation (Phase II), TASK 23-39-00-470-801.
- (d) If the database part number is incorrect, do this task: Configuration Database and Lighting Database Installation (Phase II), TASK 23-39-00-400-811.

———— **END OF TASK** ————

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TASK 23-39-00-400-808

4. Operational Program Software Installation (Phase II)

A. General

- (1) This task is the Phase II installation of the operational program software for the applicable LRU.
- (2) The Cabin System Control Panel (CSCP) is necessary to do this task.

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B. References

Reference	Title
23-39-16-000-803	Mass Memory Card (MMC) Removal (P/B 201)
23-39-16-400-801	Mass Memory Card (MMC) Installation (P/B 201)

C. Location Zones

Zone	Area
231	Passenger Compartment, Left - Section 43

D. Installation Procedure

SUBTASK 23-39-00-420-022

- (1) For CACP, CSCP (without MMC), CSMU, OEU, PA/CI, PIIC, SDM, and ZMU;

Do these steps to install the operational program software from the CSCP:

- (a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN CONFIGURATION
- 3) SOFTWARE MANAGEMENT
- 4) OPERATIONAL PROGRAM SOFTWARE INSTALLATION

NOTE: If any CMS power buses or circuit breakers are OFF, they will be shown on the CSCP. Make sure that the applicable power buses and circuit breakers are ON before you continue. Then touch CONTINUE SELECTION on the CSCP.

- 5) The applicable LRU
- 6) The applicable hardware part number, if necessary
- 7) The applicable software part number, if necessary

NOTE: Make sure you know the correct software part number to be installed before you select the software part number on the CSCP. For the LRU to be an approved installation, the correct software must be installed.

- a) If the correct software part number does not show on the CSCP, do one of the following:

- <1> If the CSCP has a MMC, do these tasks: Mass Memory Card (MMC) Removal, TASK 23-39-16-000-803 and Mass Memory Card (MMC) Installation, TASK 23-39-16-400-801.
- <2> If the CSCP has no MMC, do this task: Phase I Data Installation From the CSCP Disk Drive to the CSCP Mass Storage, TASK 23-39-00-400-812.

- 8) INSTALL

- (b) Make sure that the CSCP shows NO FAULTS when the installation is completed.

- 1) If a maintenance message shows on the CSCP, refer to the applicable maintenance message index in the Fault Isolation Manual (FIM).

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- (c) For the software that you installed, do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-802.

NOTE: Use SAVE ALL and PRINT ALL only after you completed all software and database verification tests. After using SAVE ALL or PRINT ALL, the CSCP may not respond to commands. If the CSCP does not respond to commands, then reset the CSCP.

SUBTASK 23-39-00-420-027

- (2) For ALC and LF;

Do these steps to install the operational program software from the CSCP:

- (a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN CONFIGURATION
- 3) SOFTWARE MANAGEMENT
- 4) OPERATIONAL PROGRAM SOFTWARE INSTALLATION

NOTE: If any CMS power buses or circuit breakers are OFF, they will be shown on the CSCP. Make sure that the applicable power buses and circuit breakers are ON before you continue. Then touch CONTINUE SELECTION on the CSCP.

- 5) NEXT PAGE
- 6) The applicable LRU
- 7) Find the applicable hardware part number, if necessary
- 8) Select the applicable software part number, if necessary

NOTE: Make sure you know the correct software part number to be installed before you select the software part number on the CSCP. For the LRU to be an approved installation, the correct software must be installed.

- a) If the correct software part number does not show on the CSCP, do this task:
Phase I Data Installation From the CSCP Disk Drive to the CSCP Mass Storage, TASK 23-39-00-400-812.

- 9) INSTALL

- (b) Make sure that the CSCP shows NO FAULTS when the installation is completed.

- 1) If a maintenance message shows on the CSCP, refer to the applicable maintenance message index in the Fault Isolation Manual (FIM).

- (c) For the software that you installed, do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-802.

NOTE: Use SAVE ALL and PRINT ALL only after you completed all software and database verification tests. After using SAVE ALL or PRINT ALL, the CSCP may not respond to commands. If the CSCP does not respond to commands, then reset the CSCP.

————— END OF TASK —————

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TASK 23-39-00-470-801

5. Operational Program Software Installation (Phase II)

A. General

- (1) This task is the Phase II installation of the operational program software for the applicable LRU.
- (2) There are three ways to perform a Phase II operational program software installation.
 - (a) Operational program software can be installed by connecting the maintenance laptop to the J4 RJ45 jack on the CCP.
 - (b) Operational program software can be installed by using the CSCP.
 - (c) Operational program software can be installed by using the MAT.

B. Tools/Equipment

Reference	Description
STD-9080	Cable - Ethernet (Cat 5E, RJ-45 Connectors)

C. Location Zones

Zone	Area
221	Passenger Compartment, Left - Section 41
231	Passenger Compartment, Left - Section 43

D. Phase II Installation using the Maintenance Laptop

SUBTASK 23-39-00-420-030

- (1) Remove the front shroud from the CCP:
 - (a) Push a small allen wrench (less than 1.5 mm) in the auto-lock pin holes to release the auto-lock pins that attach the front shroud to the CCP.

NOTE: The auto-lock pins are released when you push the wrench. If you use the 1.5 mm wrench to turn the auto-lock pin, you will change the adjustment of the front shroud to the CCP.
 - (b) Remove the front shroud.

SUBTASK 23-39-00-420-049

- (2) Turn on the maintenance laptop and logon with the appropriate user name and password.

NOTE: Make sure that the maintenance laptop's battery is fully charged or is connected to external power.

SUBTASK 23-39-00-420-035

- (3) Connect one end of the RJ-45 Ethernet cable, STD-9080 to the maintenance laptop and the other end to the CSCP's J4 RJ45 port.

SUBTASK 23-39-00-420-036

- (4) If necessary, select the CSS maintenance icon on the maintenance laptop.

SUBTASK 23-39-00-420-037

- (5) Touch the INSTALL CCP OPERATIONAL PROGRAM SOFTWARE button.

SUBTASK 23-39-00-420-038

- (6) If necessary, select the applicable hardware part number.

SUBTASK 23-39-00-420-039

- (7) If necessary, select the applicable software part number.

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SUBTASK 23-39-00-420-040

- (8) If the correct software part number does not show on the CSCP, do the following task Stage Software on the CSS Mass Storage Device (Phase I), TASK 23-39-00-470-802.

SUBTASK 23-39-00-420-041

- (9) Touch the INSTALL button.

NOTE: The CCP OPS INSTALLATION COMPLETE screen should briefly display before the panel reboots.

NOTE: Phase II data installation performed at the Maintenance Laptop and MAT does not update the DATA INSTALLATION FAULTS screen or report. The DATA INSTALLATION FAULTS screen displays the faults from the last time OPS or databases were installed using the CSCP.

SUBTASK 23-39-00-420-043

- (10) For the software that you installed, do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-804.

NOTE: Use SAVE ALL and PRINT ALL only after you completed all software and database verification tests. After using SAVE ALL or PRINT ALL, the CSCP may not respond to commands. If the CSCP does not respond to commands, then reset the CSCP.

E. Phase II Installation using the CSCP

SUBTASK 23-39-00-420-032

- (1) For CACP, CSCP, CSMU, OEU, PA/CI, PIIC, SDM, and ZMU;

Do these steps to install the operational program software from the CSCP:

NOTE: Performing a Phase II installation of the operational program software to the CACP using the CSCP, can take significantly longer than if directly connected to the CACP using the maintenance laptop.

- (a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN CONFIGURATION
- 3) SOFTWARE MANAGEMENT
- 4) OPERATIONAL PROGRAM SOFTWARE INSTALLATION

NOTE: If any CMS power buses or circuit breakers are OFF, they will be shown on the CSCP. Make sure that the applicable power buses and circuit breakers are ON before you continue. Then touch CONTINUE SELECTION on the CSCP.

- 5) The applicable LRU

NOTE: The OPS should be loaded to the CSS LRUs in this order: CCP (CSCP & CACP), CSMU, PA/CI, ZMU, OEU and SDM.

NOTE: If the OPERATION PROGRAM SOFTWARE INSTALLATION IS OPERATING screen shows, the CCP OPS is already in the CCP (CACPs) local storage.

NOTE: If the SELECTED CCP OPS NOT IN LOCAL STORAGE screen shows, the CCP OPS is not in the CCP (CACPs) storage.

Selecting the CONTINUE INSTALLATION button will send the selected OPS to CCPs (CACPs) which do not have that OPS in their local storage.

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Selecting the LIMITED INSTALLATION button will load OPS only to those CCPs (CSCP/CACPs) which have OPS in their local storage.

- 6) The applicable hardware part number, if necessary
- 7) The applicable software part number, if necessary

NOTE: Make sure you know the correct software part number to be installed before you select the software part number on the CSCP. For the LRU to be an approved installation, the correct software must be installed.

- a) If the correct software part number does not show on the CSCP, do the following task Stage Software on the CSS Mass Storage Device (Phase I), TASK 23-39-00-470-802.

8) INSTALL

- (b) Make sure that the CSCP shows NO FAULTS when the installation is completed.
 - 1) If a maintenance message shows on the CSCP, refer to the applicable maintenance message index in the Fault Isolation Manual (FIM).
- (c) For the software that you installed, do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-804.

NOTE: Use SAVE ALL and PRINT ALL only after you completed all software and database verification tests. After using SAVE ALL or PRINT ALL, the CSCP may not respond to commands. If the CSCP does not respond to commands, then reset the CSCP.

SUBTASK 23-39-00-420-033

- (2) For ALC and LF;

Do these steps to install the operational program software from the CSCP:

- (a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN CONFIGURATION
- 3) SOFTWARE MANAGEMENT
- 4) OPERATIONAL PROGRAM SOFTWARE INSTALLATION

NOTE: If any CMS power buses or circuit breakers are OFF, they will be shown on the CSCP. Make sure that the applicable power buses and circuit breakers are ON before you continue. Then touch CONTINUE SELECTION on the CSCP.

- 5) NEXT PAGE
- 6) The applicable LRU
- 7) Find the applicable hardware part number, if necessary
- 8) Select the applicable software part number, if necessary

NOTE: Make sure you know the correct software part number to be installed before you select the software part number on the CSCP. For the LRU to be an approved installation, the correct software must be installed.

- a) If the correct software part number does not show on the CSCP, do this task: Stage Software on the CSS Mass Storage Device (Phase I), TASK 23-39-00-470-802.

9) INSTALL

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- (b) Make sure that the CSCP shows NO FAULTS when the installation is completed.
 - 1) If a maintenance message shows on the CSCP, refer to the applicable maintenance message index in the Fault Isolation Manual (FIM).
 - (c) For the software that you installed, do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-804.
- NOTE: Use SAVE ALL and PRINT ALL only after you completed all software and database verification tests. After using SAVE ALL or PRINT ALL, the CSCP may not respond to commands. If the CSCP does not respond to commands, then reset the CSCP.

F. Phase II Installation using the MAT

SUBTASK 23-39-00-420-034

- (1) Touch the following buttons on the MAIN screen of the MAT:
 - (a) CSS
 - (b) CABIN SERVICES SYSTEM
 - (c) INSTALL CCP OPERATIONAL PROGRAM SOFTWARE

SUBTASK 23-39-00-420-044

- (2) Select the applicable hardware part number to install.

SUBTASK 23-39-00-420-045

- (3) Select the applicable software part number to install.
 - (a) If the correct software part number does not show up, do this task: Stage Software on the CSS Mass Storage Device (Phase I), TASK 23-39-00-470-802.

SUBTASK 23-39-00-420-046

- (4) Touch the INSTALL button.

NOTE: The CCP OPS INSTALLATION COMPLETE screen should display briefly before the panel reboots.

NOTE: Phase II data installation performed at the Maintenance Laptop and MAT does not update the DATA INSTALLATION FAULTS screen or report. The DATA INSTALLATION FAULTS screen displays the faults from the last time OPS or databases were installed using the CSCP.

SUBTASK 23-39-00-420-048

- (5) For the software that you installed, do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-804.

NOTE: Use SAVE ALL and PRINT ALL only after you completed all software and database verification tests. After using SAVE ALL or PRINT ALL, the CSCP may not respond to commands. If the CSCP does not respond to commands, then reset the CSCP.

————— END OF TASK —————

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ARO ALL; AIRPLANES WITH CABIN SERVICES SYSTEM AND WITH MOOD LIGHTING SYSTEM

TASK 23-39-00-400-811

6. Configuration Database and Lighting Database Installation (Phase II)

A. General

- (1) This task is the installation of the configuration and lighting database.
- (2) The Cabin System Control Panel (CSCP) is necessary to do this task.

B. Location Zones

Zone	Area

ARO ALL

231	Passenger Compartment, Left - Section 43

ARO ALL; AIRPLANES WITH CABIN SERVICES SYSTEM AND WITH MOOD LIGHTING SYSTEM

C. Installation Procedure

SUBTASK 23-39-00-420-028

- (1) Touch these selections on the CSCP to install the database:

- (a) CABIN MAINTENANCE
- (b) CABIN CONFIGURATION
- (c) DATABASE INSTALLATION

NOTE: If any CMS power buses and circuit breakers are OFF, they will be shown on the CSCP. Make sure that the applicable power buses and circuit breakers are ON before you continue. Then touch CONTINUE SELECTION on the CSCP.

NOTE: The part numbers of the currently installed configuration database and lighting database will show on the CSCP.

NOTE: To install a different configuration or lighting database, touch MORE SELECTIONS to see other database part numbers in the CSCP mass storage. Make sure that you know the correct database part number before you continue the installation. To be an approved installation, the correct database must be installed.

NOTE: You must select both a configuration database and a lighting database in order to perform a database installation. If there are no lighting databases in mass storage, you may install only the configuration database.

ARO 001-015 PRE SB 777-23-0369

- 1) If the correct database part number does not show on the CSCP, do this task: Phase I Data Installation From the CSCP Disk Drive to the CSCP Mass Storage, TASK 23-39-00-400-812.

ARO 016-999; ARO 001-015 POST SB 777-23-0369

- 2) If the correct database part number does not show on the CSCP, do this task: Stage Software on the CSS Mass Storage Device (Phase I), TASK 23-39-00-470-802.

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CAUTION

DO NOT TOUCH THE STOP INSTALLATION SELECTION ON THE CSCP. IF YOU TOUCH THE STOP INSTALLATION SELECTION ON THE CSCP, THE SYSTEM MAY NOT OPERATE CORRECTLY.



CAUTION

DO NOT TOUCH ANY BUTTONS ON THE TELEPHONES OR THE PASSENGER CONTROLS DURING INSTALLATION. IF YOU TOUCH ANY BUTTONS, THE SYSTEM MAY NOT OPERATE CORRECTLY.

(d) INSTALL

NOTE: If you have selected a database different than what is currently installed, then the CSCP will show a message. Touch CONTINUE INSTALLATION if you have made the correct selection.

SUBTASK 23-39-00-860-035

- (2) Make sure that the CSCP shows NO FAULTS when the installation is completed.
 - (a) If a maintenance message shows on the CSCP, refer to the applicable maintenance message index in the Fault Isolation Manual (FIM).

————— END OF TASK —————

ARO 001-015 PRE SB 777-23-0369

TASK 23-39-00-400-812

7. Phase I Data Installation From the CSCP Disk Drive to the CSCP Mass Storage

A. General

- (1) This task is the Phase I installation of the Configuration Database (CDB), Lighting Database (LDB), and MLS Operational Program Software (OPS).
- (2) The Cabin System Control Panel (CSCP) is necessary for this task.
- (3) To install the Configuration Database and Lighting Database from the CSCP mass memory to the LRUs, do this task: Configuration Database and Lighting Database Installation (Phase II), TASK 23-39-00-400-811.

B. Location Zones

Zone	Area
231	Passenger Compartment, Left - Section 43

C. Installation Procedure

SUBTASK 23-39-00-420-029

- (1) Install data from the CSCP disk drive:
 - (a) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE
 - 2) CABIN CONFIGURATION
 - 3) SOFTWARE MANAGEMENT
 - 4) INSTALL DATA FROM FLOPPY DISK DRIVE
 - (b) Do the instructions that show on the CSCP.

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ARO 001-015 PRE SB 777-23-0369 (Continued)

- (c) Make sure that the CSCP shows INSTALLATION COMPLETE when all of the data has been installed.
- (d) Remove the diskette.
- (e) Touch these selections on the CSCP:
 - 1) CABIN CONFIGURATION
 - 2) SOFTWARE MANAGEMENT
 - 3) SOFTWARE IN MASS STORAGE
- (f) Verify on the screen that the software was installed in mass storage.

———— **END OF TASK** ————

ARO 016-999; ARO 001-015 POST SB 777-23-0369

TASK 23-39-00-470-802

8. Stage Software on the CSS Mass Storage Device (Phase I)

A. General

- (1) This task includes the steps to stage software on the CSS Mass Storage Device (MSD).
- (2) There are four ways to stage software on the CSS MSD.
 - (a) Software can be staged directly by connecting the maintenance laptop (ML) to the CCP's RJ45 port.
NOTE: Uncrated software is required to stage directly to the CSS MSD.
 - (b) Software can be staged indirectly by connecting the maintenance laptop (ML) to the ONS's RJ45 port on the P18 panel.
NOTE: Crated software is required to stage software to the CSS MSD using the ONS Maintenance application on the ML connected to the ONS's RJ45 port.
 - (c) Software can be staged indirectly using a USB device connected to the MAT.
NOTE: Crated software is required to stage software to the CSS MSD using the ONS application on the MAT.
 - (d) Software can be staged directly using the Cabin Services System (CSS) application on the MAT.
NOTE: Uncrated software is required to stage directly to the CSS MSD using the CSS application.

B. Tools/Equipment

Reference	Description
STD-9080	Cable - Ethernet (Cat 5E, RJ-45 Connectors)

C. Location Zones

Zone	Area
221	Passenger Compartment, Left - Section 41
231	Passenger Compartment, Left - Section 43

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ARO 016-999; ARO 001-015 POST SB 777-23-0369 (Continued)

D. Stage Software on the CSS MSD via the ML/CSS

SUBTASK 23-39-00-400-001

- (1) Turn on the maintenance laptop and logon with the appropriate user name and password.

NOTE: Make sure that the maintenance laptop's battery is fully charged or is connected to external power.

SUBTASK 23-39-00-470-010

- (2) Connect one end of the RJ-45 Ethernet cable, STD-9080 to the maintenance laptop and the other end to the CSCP's J4 RJ45 port.

SUBTASK 23-39-00-470-011

- (3) If necessary, select the CSS maintenance icon on the maintenance laptop.
 - (a) Make sure that the DATA AND TRANSFER INSTALLATION screen shows.

SUBTASK 23-39-00-470-012

- (4) Touch the following buttons:
 - (a) TRANSFER SOFTWARE TO CCP LOCAL STORAGE
 - (b) BROWSE

SUBTASK 23-39-00-470-013

- (5) Navigate to the uncrated part folder path.

SUBTASK 23-39-00-470-014

- (6) Select all files in the part folder.

SUBTASK 23-39-00-470-025

- (7) Touch the OPEN button.

SUBTASK 23-39-00-470-015

- (8) Select one or multiple checkboxes

SUBTASK 23-39-00-470-016

- (9) Touch the START button.

SUBTASK 23-39-00-470-017

- (10) Make sure each part shows "Yes" under the "Transferred" column.

E. Stage Software on the CSS MSD via the ML/ONS

SUBTASK 23-39-00-400-002

- (1) Turn on the maintenance laptop and logon with the appropriate user name and password.

NOTE: Make sure that the maintenance laptop's battery is fully charged or is connected to external power.

SUBTASK 23-39-00-470-018

- (2) Connect one end of the RJ-45 Ethernet cable, STD-9080 to the maintenance laptop and the other end to the ONS's RJ45 port on the P18 panel.

SUBTASK 23-39-00-470-019

- (3) If necessary, select the ONS maintenance icon on the maintenance laptop.
 - (a) Make sure that the ONBOARD NETWORK SYSTEM screen shows.

SUBTASK 23-39-00-470-020

- (4) Touch the following buttons:

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- (a) EXTENDED MAINTENANCE
- (b) MASS STORAGE DEVICE
- (c) CSS MASS STORAGE
- (d) ADD
- (e) BROWSE

SUBTASK 23-39-00-470-021

- (5) Navigate to the crated part folder path.

SUBTASK 23-39-00-470-022

- (6) Select the crated part file (*.zip).

SUBTASK 23-39-00-470-023

- (7) Touch the OPEN button.

SUBTASK 23-39-00-470-024

- (8) Make sure that the STATUS shows SUCCESS.

F. Stage Software on the CSS MSD via the MAT/ONS USB

SUBTASK 23-39-00-470-004

- (1) Touch the following buttons:
 - (a) ONS
 - (b) ONBOARD NETWORK SYSTEM
 - (c) EXTENDED MAINTENANCE

ARO 011-013 POST SB 777-46-0066 AND POST SB 777-23-0369

- (d) MSD

ARO 016-999; ARO 014, 015 POST SB 777-23-0369

- (e) MASS STORAGE DEVICE

ARO 016-999; ARO 001-015 POST SB 777-23-0369

SUBTASK 23-39-00-470-005

- (2) Select the CSS MSD radio button.

SUBTASK 23-39-00-470-006

- (3) Touch the following buttons:
 - (a) ADD
 - (b) BROWSE

SUBTASK 23-39-00-470-007

- (4) Navigate to the file location of the applicable loadable software part.
 - (a) Select the file.
 - (b) Touch the OPEN button.

SUBTASK 23-39-00-470-008

- (5) Make sure that the STATUS shows SUCCESS.

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G. Stage Software on the CSS MSD via the MAT/CSSL

SUBTASK 23-39-00-470-026

- (1) Touch the following buttons:
 - (a) CSS
 - (b) CABIN SERVICES SYSTEM
 - (c) TRANSFER SOFTWARE TO CCP LOCAL STORAGE
 - (d) BROWSE

SUBTASK 23-39-00-470-027

- (2) Navigate to the uncrated part folder path.

SUBTASK 23-39-00-470-028

- (3) Select all files in the part folder.

SUBTASK 23-39-00-470-029

- (4) Touch the OPEN button.

SUBTASK 23-39-00-470-030

- (5) Select one or multiple checkboxes

SUBTASK 23-39-00-470-031

- (6) Touch the START button.

SUBTASK 23-39-00-470-032

- (7) Make sure each part shows "Yes" under the "Transferred" column.

————— END OF TASK —————

ARO ALL

TASK 23-39-00-000-808

9. Operational Program Software Removal from the CSCP Mass Storage

A. General

- (1) This task is the removal of the operational program software from the CSCP mass storage.
- (2) The Cabin System Control Panel (CSCP) is necessary for this task.
- (3) This procedure applies to these LRUs:
 - (a) Area Lighting Control (ALC)
 - (b) Lighting Fixture (LF)

B. Location Zones

Zone	Area
231	Passenger Compartment, Left - Section 43

C. Removal Procedure

SUBTASK 23-39-00-020-009

- (1) To remove software from the CSCP mass storage, do these steps:
 - (a) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE
 - 2) CABIN CONFIGURATION

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- 3) SOFTWARE MANAGEMENT
- 4) DISK MAINTENANCE
- 5) OPERATIONAL PROGRAM S/W DELETION
- 6) The applicable LRU
- 7) The applicable part number
- 8) DELETE
- 9) CONTINUE DELETION

————— **END OF TASK** —————

ARO 016-999; ARO 001-015 POST SB 777-23-0369

TASK 23-39-00-070-801

10. Remove Software on the CSS Mass Storage Device

A. General

- (1) This task includes the steps to remove operational program software parts from the CSS MSD.
- (2) There are four ways to remove software on the CSS MSD.
 - (a) Software can be removed using the CSCP.
 - (b) Software can be removed by connecting the maintenance laptop to the J4 RJ45 jack on the CCP.
 - (c) Software can be removed using the MAT via CSSL.
 - (d) Software can be removed using the MAT via ONSL.

B. Tools/Equipment

Reference	Description
STD-9080	Cable - Ethernet (Cat 5E, RJ-45 Connectors)

C. Location Zones

Zone	Area
221	Passenger Compartment, Left - Section 41
231	Passenger Compartment, Left - Section 43

D. Removing Software Parts from the CSS MSD using the CSCP

SUBTASK 23-39-00-000-001

- (1) Do these steps to remove software from the CSS MSD:
 - (a) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE
 - 2) CABIN CONFIGURATION
 - 3) SOFTWARE MANAGEMENT
 - 4) MASS STORAGE MANAGEMENT
 - 5) The applicable part number
 - 6) DELETE
 - 7) CONTINUE DELETION.

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ARO 016-999; ARO 001-015 POST SB 777-23-0369 (Continued)

E. Removing Software Parts from the CSS MSD using the Maintenance Laptop via CSS

SUBTASK 23-39-00-000-002

(1) Remove the front shroud from the CCP:

- (a) Push a small allen wrench (less than 1.5 mm) in the auto-lock pin holes to release the auto-lock pins that attach the front shroud to the CCP.

NOTE: The auto-lock pins are released when you push the wrench. If you use the 1.5 mm wrench to turn the auto-lock pin, you will change the adjustment of the front shroud to the CCP.

- (b) Remove the front shroud.

SUBTASK 23-39-00-410-001

(2) Turn on the maintenance laptop and logon with the appropriate user name and password.

NOTE: Make sure that the maintenance laptop's battery is fully charged or is connected to external power.

SUBTASK 23-39-00-420-050

(3) Connect one end of the RJ-45 Ethernet cable, STD-9080 to the maintenance laptop and the other end to the CSCP's J4 RJ45 port.

SUBTASK 23-39-00-470-009

(4) If necessary, select the CSS maintenance icon on the maintenance laptop.

SUBTASK 23-39-00-860-036

(5) Touch the following buttons:

- (a) DELETE SOFTWARE IN CCP LOCAL STORAGE
- (b) The applicable software part number
- (c) DELETE
- (d) CONTINUE DELETE.

F. Removing Software Parts from the CSS MSD using the MAT via CSSL

SUBTASK 23-39-00-860-037

(1) Do the following steps to remove software from the CSCP mass storage:

- (a) Touch these selections on the MAT:
 - 1) CSS
 - 2) CABIN SERVICES SYSTEM
 - 3) DELETE SOFTWARE IN CCP LOCAL STORAGE
 - 4) The applicable software part number
 - 5) DELETE
 - 6) CONTINUE DELETION.

G. Removing Software Parts from the CSS MSD using the MAT via ONSL

SUBTASK 23-39-00-860-038

(1) Do the following steps to remove software from the CSCP mass storage:

- (a) Touch these selections on the MAT:
 - 1) ONS
 - 2) ONBOARD NETWORK SYSTEM

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ARO 016-999; ARO 001-015 POST SB 777-23-0369 (Continued)

- 3) EXTENDED MAINTENANCE

ARO 011-013 POST SB 777-46-0066 AND POST SB 777-23-0369

- 4) MSD

ARO 016-999; ARO 014, 015 POST SB 777-23-0369

- 5) MASS STORAGE DEVICE

ARO 016-999; ARO 001-015 POST SB 777-23-0369

- 6) The CSS MSD radio button
7) The applicable software part number
8) DELETE
9) CONTINUE.

————— **END OF TASK** —————

ARO 001-015 PRE SB 777-23-0369

TASK 23-39-00-000-802

11. Configuration Database Removal from the CSCP Mass Storage

A. General

- (1) This task is the removal of the Configuration Database (CDB) and Lighting Database (LDB) from the CSCP mass storage.
(2) The Cabin System Control Panel (CSCP) is necessary for this task.

B. Location Zones

Zone	Area
231	Passenger Compartment, Left - Section 43

C. Removal Procedure

SUBTASK 23-39-00-020-002

- (1) Remove a database from the CSCP mass storage:
(a) Touch these selections on the CSCP:
1) CABIN MAINTENANCE
2) CABIN CONFIGURATION
3) SOFTWARE MANAGEMENT

ARO 001-015 PRE SB 777-23-0369; AIRPLANES WITH MOOD LIGHTING SYSTEM

- 4) DISK MAINTENANCE
5) DATABASE DELETION

ARO 001-015 PRE SB 777-23-0369

- 6) The applicable part number
7) DELETE
8) CONTINUE DELETION

————— **END OF TASK** —————

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TASK 23-39-00-070-802

12. Configuration Database Removal from the CSS Mass Storage

A. General

- (1) This task is the removal of the Configuration Database (CDB) from the CSS MSD.

B. Location Zones

Zone	Area

221	Passenger Compartment, Left - Section 41

231	Passenger Compartment, Left - Section 43

C. Removal Procedure

SUBTASK 23-39-00-070-002

- (1) Do these steps to remove a database from the CSS MSD:

- (a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN CONFIGURATION
- 3) SOFTWARE MANAGEMENT
- 4) SOFTWARE IN MASS STORAGE
- 5) The applicable configuration database (CDB)
- 6) DELETE
- 7) CONTINUE DELETION

———— **END OF TASK** ————

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PASSENGER ADDRESS/CABIN INTERPHONE CONTROLLER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the passenger address/cabin interphone controller (PA/CI)
- (2) An installation of the PA/CI.

B. The PA/CI is on the E1 electronics equipment rack, shelf No. 4, in the main equipment center.

TASK 23-39-03-000-801

2. Passenger Address/Cabin Interphone Controller (PA/CI) Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
20-10-01-000-801	E/E Box Removal (P/B 401)
20-41-01-000-803	ESDS Handling for Metal Encased Unit Removal (P/B 201)

B. **Location Zones**

Zone	Area
117	Main Equipment Center, Left

C. **Access Panels**

Number	Name/Location
117AL	Main Equipment Center Access Door

D. **Removal Procedure**

SUBTASK 23-39-03-860-001

- (1) Open these circuit breakers and install safety tags:

Standby Power Management Panel, P310

Row	Col	Number	Name
E	7	C23653	CAB INTPH ZMU 1 & 3
E	8	C23654	CAB INTPH ZMU 2 & 4
F	6	C23632	PAX ADRS CTRL PRI
F	7	C23633	PAX ADRS CTRL SEC
F	8	C23637	PA DIR ACCESS
F	12	C23638	CAB INTPH PRI
F	13	C23639	CAB INTPH SEC

SUBTASK 23-39-03-010-001

- (2) Open this access panel to get access to the main equipment center:

Number	Name/Location
117AL	Main Equipment Center Access Door

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SUBTASK 23-39-03-910-001



DO NOT TOUCH THE PA/CI CONTROLLER BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PA/CI CONTROLLER.

- (3) Before you touch the PA/CI controller [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-41-01-000-803.

SUBTASK 23-39-03-020-001

- (4) To remove the PA/CI controller [1], do this task: E/E Box Removal, TASK 20-10-01-000-801.

————— **END OF TASK** —————

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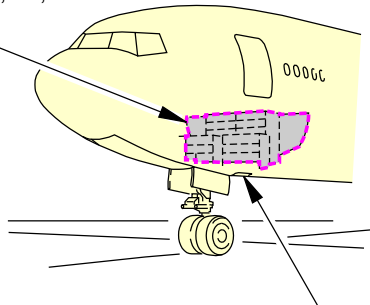
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ELECTRONIC EQUIPMENT
RACKS, E1, E2

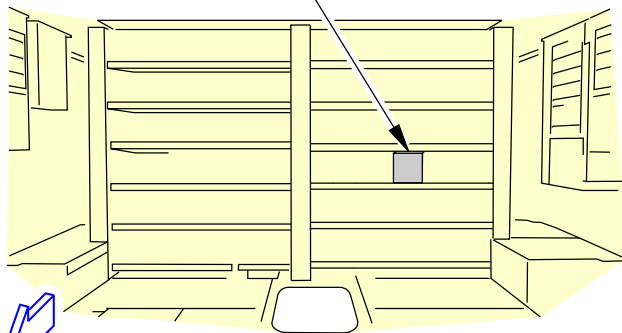
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ELECTRICAL/ELECTRONICS (E/E)
ACCESS DOOR, 117AL

PASSENGER ADDRESS/CABIN
INTERPHONE CONTROLLER (E1-4)

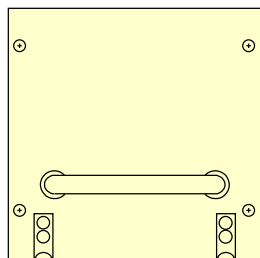
B



FWD

ELECTRONIC EQUIPMENT RACKS, E1, E2

A



[1] PASSENGER ADDRESS/CABIN
INTERPHONE CONTROLLER

B

C23536 S0006407278_V2

Passenger Address/Cabin Interphone Installation
Figure 401/23-39-03-990-802

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TASK 23-39-03-400-801

3. Passenger Address/Cabin Interphone Controller (PA/CI) Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
20-10-01-400-801	E/E Box Installation (P/B 401)
20-41-01-400-803	ESDS Handling for Metal Encased Unit Installation (P/B 201)
23-39-00-700-802	Operational Program Software and Database Verification Test (P/B 201)
23-39-00-700-804	Operational Program Software and Database Verification Test (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Controller	23-39-03-01-009	ARO ALL
		25-17-01-32-025	ARO ALL

C. Location Zones

Zone	Area
117	Main Equipment Center, Left

D. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

E. Installation Procedure

SUBTASK 23-39-03-860-002

- (1) Make sure that these circuit breakers are open and have safety tags:

Standby Power Management Panel, P310

Row	Col	Number	Name
E	7	C23653	CAB INTPH ZMU 1 & 3
E	8	C23654	CAB INTPH ZMU 2 & 4
F	6	C23632	PAX ADRS CTRL PRI
F	7	C23633	PAX ADRS CTRL SEC
F	8	C23637	PA DIR ACCESS
F	12	C23638	CAB INTPH PRI
F	13	C23639	CAB INTPH SEC

SUBTASK 23-39-03-910-002

 CAUTION	DO NOT TOUCH THE PA/CI CONTROLLER BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PA/CI CONTROLLER.

- (2) Before you touch the PA/CI controller [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-41-01-400-803.

SUBTASK 23-39-03-420-001

- (3) To install the PA/CI controller [1], do this task: E/E Box Installation, TASK 20-10-01-400-801.

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SUBTASK 23-39-03-410-001

- (4) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-39-03-860-003

- (5) Remove the safety tags and close these circuit breakers:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C23653	CAB INTPH ZMU 1 & 3
E	8	C23654	CAB INTPH ZMU 2 & 4
F	6	C23632	PAX ADRS CTRL PRI
F	7	C23633	PAX ADRS CTRL SEC
F	8	C23637	PA DIR ACCESS
F	12	C23638	CAB INTPH PRI
F	13	C23639	CAB INTPH SEC

F. Installation Test

SUBTASK 23-39-03-740-001

- (1) Do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-802 or Operational Program Software and Database Verification Test, TASK 23-39-00-700-804.

————— END OF TASK —————

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ZONE MANAGEMENT UNIT - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
 - (1) The removal of a zone management unit (ZMU)
 - (2) The installation of a ZMU.
- B. The ZMU is above the cabin ceiling on the lattice rail on the right side of the center stow bin. Four screws attach the ZMU to the adapter assembly. You must remove the inboard ceiling panel to get access to a ZMU.
- C. These removal and installation tasks are the same for all ZMUs.

TASK 23-39-04-000-801

2. Zone Management Unit (ZMU) Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

<u>Reference</u>	<u>Title</u>
20-41-01-000-802	Conductive Dust Cap and Connector Cover Installation (P/B 201)
25-21-06-000-801	Main Ceiling Panel - Removal (P/B 401)

B. Location Zones

<u>Zone</u>	<u>Area</u>
224	Area Above Passenger Compartment Ceiling, Right - Section 41
234	Area Above Passenger Compartment Ceiling, Right - Section 43
244	Area Above Passenger Compartment Ceiling, Right - Section 44
254	Area Above Passenger Compartment Ceiling, Right - Section 46

C. Removal Procedure

SUBTASK 23-39-04-860-005

- (1) Open these circuit breakers and install safety tags:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C23653	CAB INTPH ZMU 1 & 3
E	8	C23654	CAB INTPH ZMU 2 & 4
F	8	C23637	PA DIR ACCESS

SUBTASK 23-39-04-860-008

- (2) For the ZMU [1] in zone 1,
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>
F	1	C23415	ZONE MGMT UNIT 1

SUBTASK 23-39-04-860-009

- (3) For the ZMU [1] in zone 2,

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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>
E	25	C23417	ZONE MGMT UNIT 2

SUBTASK 23-39-04-860-010

- (4) For the ZMU [1] in zone 3,

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>
H	4	C23419	ZONE MGMT UNIT 3

SUBTASK 23-39-04-860-017

- (5) For the ZMU [1] in zone 4,

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	23	C23463	ZONE MGMT UNIT 4

SUBTASK 23-39-04-010-001

- (6) To get access to the ZMU [1], do this task: Main Ceiling Panel - Removal, TASK 25-21-06-000-801.

SUBTASK 23-39-04-020-002

- (7) Remove the ZMU [1] from the adapter assembly:



CAUTION

DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (a) Disconnect the electrical connectors [4] and [6] from the ZMU [1].
- (b) Do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-41-01-000-802.
- (c) Remove the screws [2] and washers [3] that attach the ZMU [1] to the adapter assembly [8].
- (d) Remove the ZMU [1].

————— **END OF TASK** —————

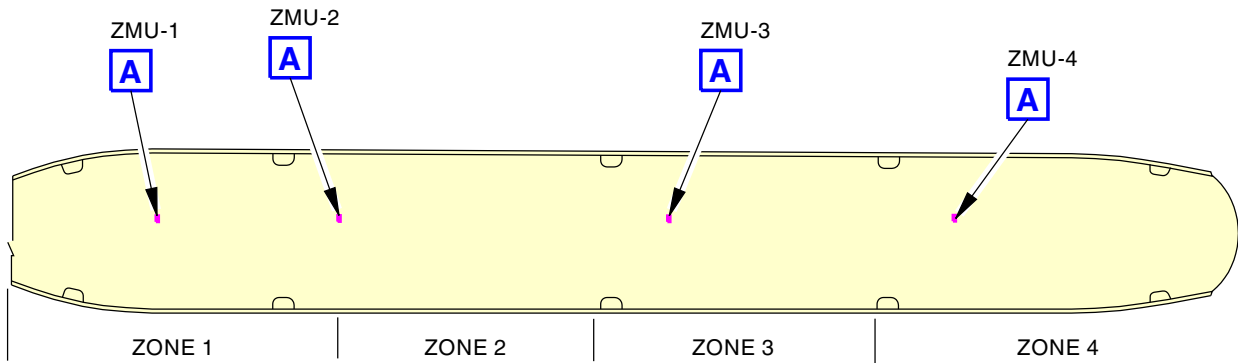
EFFECTIVITY
ARO ALL

23-39-04

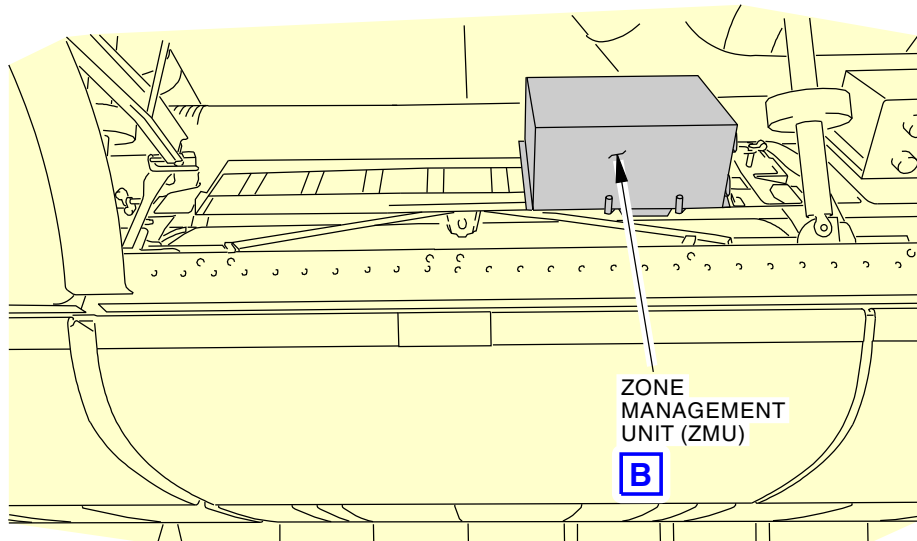
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ZONE MANAGEMENT UNIT LOCATIONS



(EXAMPLE)

A

L34353 S0006407286_V2

Zone Management Unit Installation
Figure 401/23-39-04-990-802 (Sheet 1 of 2)

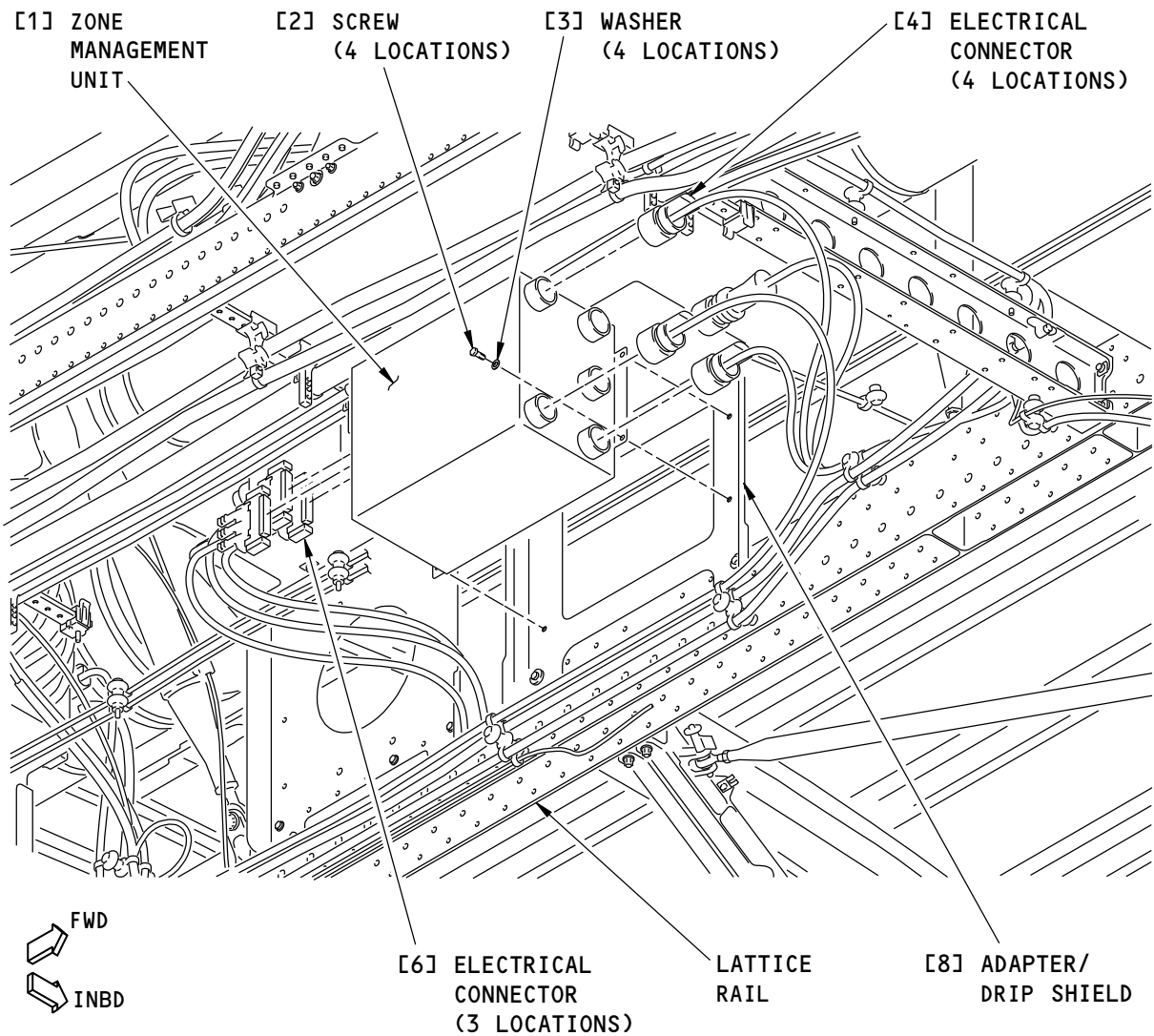
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ZONE MANAGEMENT UNIT (ZMU)

B

1353481 S0000241515_V1

**Zone Management Unit Installation
Figure 401/23-39-04-990-802 (Sheet 2 of 2)**

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TASK 23-39-04-400-801

3. Zone Management Unit (ZMU) Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
20-41-01-400-802	Conductive Dust Cap and Connector Cover Removal (P/B 201)
23-39-00-400-811	Configuration Database and Lighting Database Installation (Phase II) (P/B 201)
23-39-00-700-802	Operational Program Software and Database Verification Test (P/B 201)
23-39-00-700-804	Operational Program Software and Database Verification Test (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-21-06-400-801	Main Ceiling Panel - Installation (P/B 401)

B. Location Zones

Zone	Area
224	Area Above Passenger Compartment Ceiling, Right - Section 41
234	Area Above Passenger Compartment Ceiling, Right - Section 43
244	Area Above Passenger Compartment Ceiling, Right - Section 44
254	Area Above Passenger Compartment Ceiling, Right - Section 46

C. Installation Procedure

SUBTASK 23-39-04-860-006

- (1) Make sure that these circuit breakers are open and have safety tags:

Standby Power Management Panel, P310

Row	Col	Number	Name
E	7	C23653	CAB INTPH ZMU 1 & 3
E	8	C23654	CAB INTPH ZMU 2 & 4
F	8	C23637	PA DIR ACCESS

SUBTASK 23-39-04-860-011

- (2) For the ZMU [1] in zone 1,

Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
F	1	C23415	ZONE MGMT UNIT 1

SUBTASK 23-39-04-860-012

- (3) For the ZMU [1] in zone 2,

Make sure that this circuit breaker is open and has safety tag:

Right Power Management Panel, P210

Row	Col	Number	Name
E	25	C23417	ZONE MGMT UNIT 2

SUBTASK 23-39-04-860-013

- (4) For the ZMU [1] in zone 3,

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Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	4	C23419	ZONE MGMT UNIT 3

SUBTASK 23-39-04-860-018

- (5) For the ZMU [1] in zone 4,

Make sure that this circuit breaker is open and has safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	23	C23463	ZONE MGMT UNIT 4

SUBTASK 23-39-04-420-002

- (6) Install the ZMU [1] on the adapter assembly:



CAUTION

DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (a) Do this task: Conductive Dust Cap and Connector Cover Removal, TASK 20-41-01-400-802.
- (b) Examine the electrical connectors [4] and [6] for bent or broken pins, dirt, and damage.
- (c) Put the ZMU [1] on the adapter assembly [8].
- (d) Install the screws [2] and washers [3] that attach the ZMU [1] to the adapter assembly.
- (e) Connect the electrical connectors.

SUBTASK 23-39-04-410-001

- (7) Do this task: Main Ceiling Panel - Installation, TASK 25-21-06-400-801.

SUBTASK 23-39-04-860-007

- (8) Remove the safety tags and close these circuit breakers:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C23653	CAB INTPH ZMU 1 & 3
E	8	C23654	CAB INTPH ZMU 2 & 4
F	8	C23637	PA DIR ACCESS

SUBTASK 23-39-04-860-014

- (9) For the ZMU [1] in zone 1,

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>
F	1	C23415	ZONE MGMT UNIT 1

SUBTASK 23-39-04-860-015

- (10) For the ZMU [1] in zone 2,

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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>
E	25	C23417	ZONE MGMT UNIT 2

SUBTASK 23-39-04-860-016

- (11) For the ZMU [1] in zone 3,

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>
H	4	C23419	ZONE MGMT UNIT 3

SUBTASK 23-39-04-860-019

- (12) For the ZMU [1] in zone 4,

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	23	C23463	ZONE MGMT UNIT 4

D. Installation Test

SUBTASK 23-39-04-860-004

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-39-04-740-003

- (2) Do this task: Configuration Database and Lighting Database Installation (Phase II), TASK 23-39-00-400-811.

SUBTASK 23-39-04-740-001

- (3) Do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-802 or Operational Program Software and Database Verification Test, TASK 23-39-00-700-804.

SUBTASK 23-39-04-740-002

- (4) Do the ZMU installation test:
- (a) Touch these selections on the Cabin System Control Panel (CSCP):
 - 1) CABIN MAINTENANCE
 - 2) CABIN TESTS
 - 3) START QUICK TEST
 - 4) CONTINUE TEST
 - (b) Remove one of the applicable ZMU [1] attendant handsets from its cradle.
 - (c) Make sure that you hear a dial tone.
 - (d) Put the handset back in its cradle.

————— END OF TASK —————

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CABIN SYSTEM MANAGEMENT UNIT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the cabin system management unit (CSMU)
- (2) An installation of the CSMU.

B. The CSMU is on the E1 electronics equipment rack, shelf No. 4, in the main equipment center.

TASK 23-39-11-000-801

2. Cabin System Management Unit (CSMU) Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
20-10-01-000-801	E/E Box Removal (P/B 401)

B. **Location Zones**

Zone	Area
117	Main Equipment Center, Left

C. **Access Panels**

Number	Name/Location
117AL	Main Equipment Center Access Door

D. **Removal Procedure**

SUBTASK 23-39-11-010-002

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-39-11-860-001

- (2) 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>
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-11-020-001

 CAUTION	DO NOT TOUCH THE CONDUCTOR PINS OR OTHER CONDUCTORS ON THE CSMU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CSMU.

- (3) To remove the CSMU [1], do this task: E/E Box Removal, TASK 20-10-01-000-801.

———— **END OF TASK** ————

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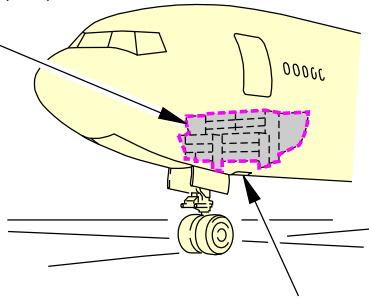
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BOEING
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ELECTRONIC
EQUIPMENT
RACKS, E1, E2

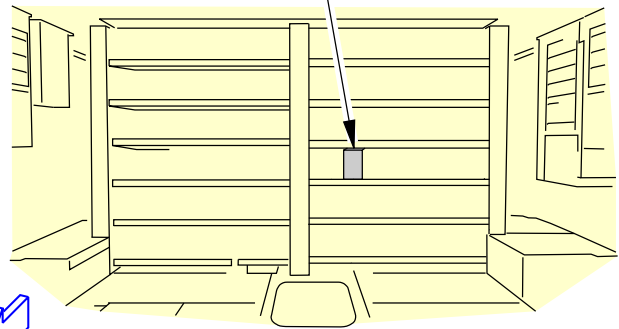
A



ELECTRICAL/ELECTRONICS (E/E)
ACCESS DOOR, 117AL

CABIN SYSTEM
MANAGEMENT UNIT (E1-4)

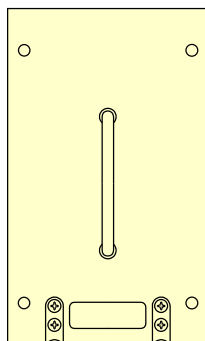
B



FWD

ELECTRONIC EQUIPMENT RACKS, E1, E2

A



[1] CABIN SYSTEM MANAGEMENT UNIT

B

C23579 S0006407293_V2

Cabin System Management Unit Installation
Figure 401/23-39-11-990-802

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TASK 23-39-11-400-801

3. Cabin System Management Unit (CSMU) Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
20-10-01-400-801	E/E Box Installation (P/B 401)
23-39-00-700-802	Operational Program Software and Database Verification Test (P/B 201)
23-39-00-700-804	Operational Program Software and Database Verification Test (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	CSMU	23-39-11-01-009	ARO ALL
		25-17-01-32-030	ARO ALL

C. Location Zones

Zone	Area
117	Main Equipment Center, Left

D. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

E. Installation Procedure

SUBTASK 23-39-11-860-002

- (1) Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-11-420-001



CAUTION

DO NOT TOUCH THE CONDUCTOR PINS OR OTHER CONDUCTORS ON THE CSMU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CSMU.

- (2) To install the CSMU [1], do this task: E/E Box Installation, TASK 20-10-01-400-801.

SUBTASK 23-39-11-860-003

- (3) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

Row	Col	Number	Name
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-11-410-002

- (4) Close this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

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F. Installation Test

SUBTASK 23-39-11-740-001

- (1) Do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-802 or Operational Program Software and Database Verification Test, TASK 23-39-00-700-804.

————— **END OF TASK** —————

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CABIN CONTROL PANEL (CCP) - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

ARO 001-015 PRE SB 777-23-0369

- (1) A removal of the mass memory card (MMC) from the CCP
- (2) An installation of the MMC into the CCP
- (3) A removal of the floppy disk drive (FDD) from the CCP
- (4) An installation of the FDD into the CCP

ARO ALL

- (5) A replacement of the CCP backlight
- (6) A cleaning of the CCP touchscreen.

B. The CCP may be installed into a Cabin System Control Panel (CSCP) or a Cabin Area Control Panel (CACP).

ARO 001-015 PRE SB 777-23-0369

- (1) A CSCP installation contains a CCP and a MMC 85. The CSCP installation also has a FDD, which is installed to the left of the CCP monitor.
- (2) A CACP installation contains a CCP and a MMC 20.
- (3) The MMC and FDD are inside the CCP and all three units are line replaceable units (LRUs).

ARO ALL

- (4) The CCP includes a Display Status indicator that is visible through a hole in the shroud. The green LED provides an indication that the display is not fully operational. The LED provides an indication of two distinct conditions.
 - (a) The Liquid Crystal Display will not function if the temperature is below zero degrees centigrade. The display is disabled below zero degrees centigrade. The Display Status Indicator LED will remain on until the display operating temperature is above zero degrees centigrade.

ARO 001-015 PRE SB 777-23-0369

- (b) While the CCP is operating, the Liquid Crystal Display is equally illuminated even if one of the two backlight bulbs has failed. The Display Status Indicator LED comes on when a single backlight bulb has failed. The LED indicates that a backlight bulb must be replaced. If the bulb is not replaced before the second bulb fails then the condition cannot be diagnosed on the airplane and the CCP must be removed. If one bulb must be replaced, both bulbs should be replaced at the same time. The Display Status Indicator LED supplies the indications per the table below:

Table 201/23-39-16-993-806 LED Status

CONDITION	EXPECTED RESULT
Both bulbs ON in BRIGHT MODE	GREEN LED not on
Both bulbs not ON	GREEN LED not on
One bulb ON in DIM MODE, one bulb out	GREEN LED not on
Both bulbs ON in DIM MODE	GREEN LED not on

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ARO 001-015 PRE SB 777-23-0369 (Continued)

Table 201/23-39-16-993-806 LED Status (Continued)

CONDITION	EXPECTED RESULT
One bulb ON in BRIGHT MODE, one bulb out	GREEN LED is on

- (c) If one of the two backlight bulbs has failed then the display illumination is not equal. The Display Status Indicator LED function is not used to indicate that a single backlight has failed. The Display Status Indicator LED is only used to indicate that the unit is too cold to operate.

ARO ALL

- C. The CACP is on a closet or partition wall near the door. The CSCP is in the purser station or is on a closet or partition wall near the door.

ARO 001-015 PRE SB 777-23-0369

TASK 23-39-16-000-803

2. **Mass Memory Card (MMC) Removal**

(Figure 23-39-16-990-806, Figure 201)

A. **General**

- (1) The mass memory card (MMC) is in the cabin control panel (CCP).

B. **References**

Reference	Title
23-39-16-990-806	Figure: Cabin Control Panel (CCP) Installation (P/B 401)

C. **Location Zones**

Zone	Area
200	Upper Half of Fuselage

D. **Removal Procedure**

SUBTASK 23-39-16-860-007

- (1) For a CCP installed as a CSCP:

Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-16-860-008

- (2) For a CCP installed as a CACP:

Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

Row	Col	Number	Name
D	9	C23444	AREA CONTROL PANELS

SUBTASK 23-39-16-020-003

- (3) Remove the front shroud [1] from the CCP [6]:

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ARO 001-015 PRE SB 777-23-0369 (Continued)

- (a) Push a small allen wrench (less than 1.5 mm) in the auto-lock pin holes to release the auto-lock pins that attach the front shroud [1] to the CCP [6].

NOTE: The auto-lock pins are released when you push the wrench. If you use the 1.5 mm wrench to turn the auto-lock pin, you will change the adjustment of the front shroud [1] to the CCP [6].

- (b) Remove the front shroud [1].

SUBTASK 23-39-16-020-004

- (4) Remove the electrical connectors:

- (a) Loosen the screws [2] on the electrical connector [3].



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CCP. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CCP.

- (b) Disconnect the two electrical connectors from the CCP [6].

SUBTASK 23-39-16-010-001

- (5) Loosen the captive fasteners [7] that hold the MMC [8] to the CCP [6].

SUBTASK 23-39-16-020-005

- (6) Remove the MMC [8] from the CCP [6].

————— END OF TASK —————

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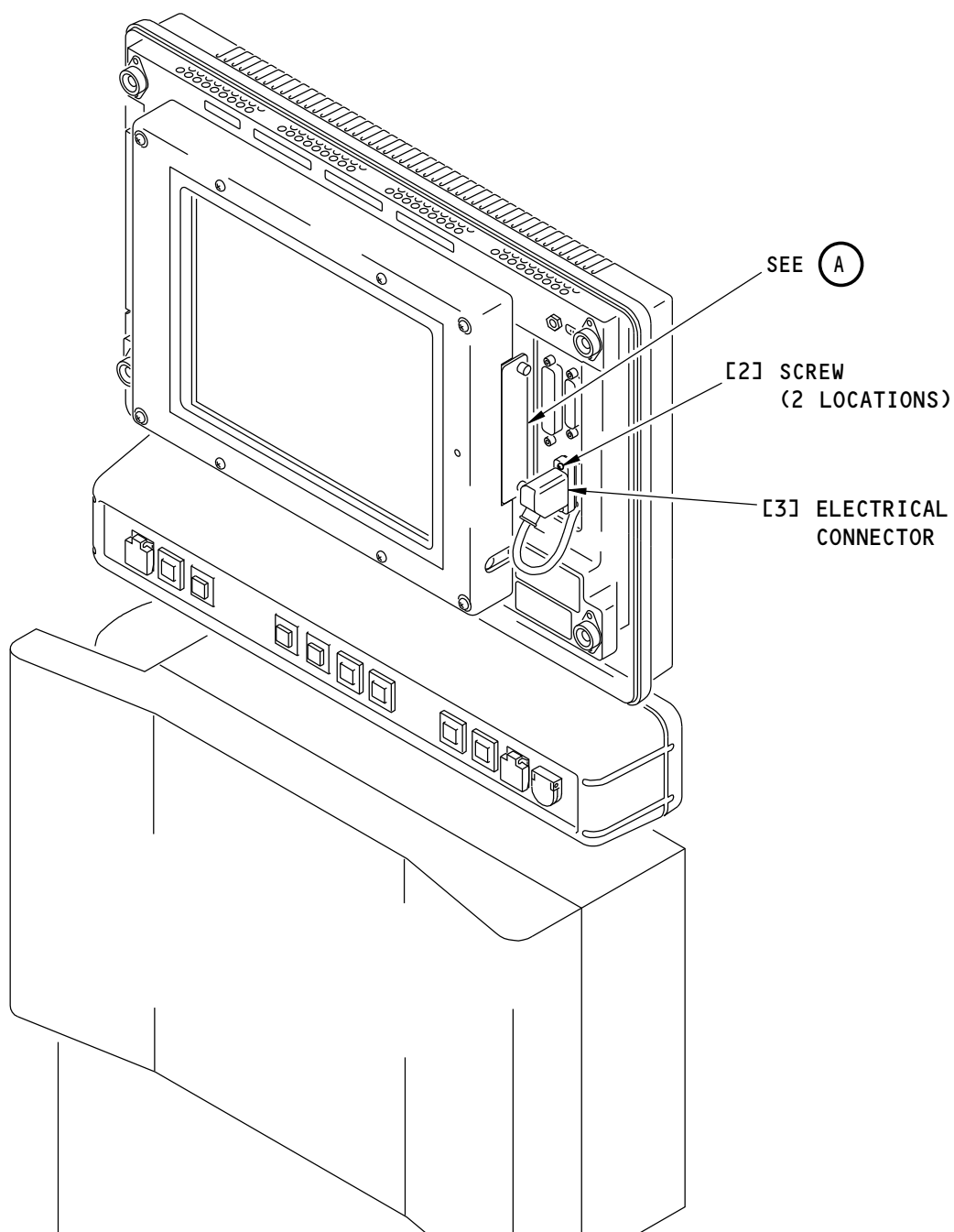
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CABIN CONTROL PANEL (CCP) FRONT SHROUD REMOVED
(EXAMPLE)

G74183 S0006407386_V1

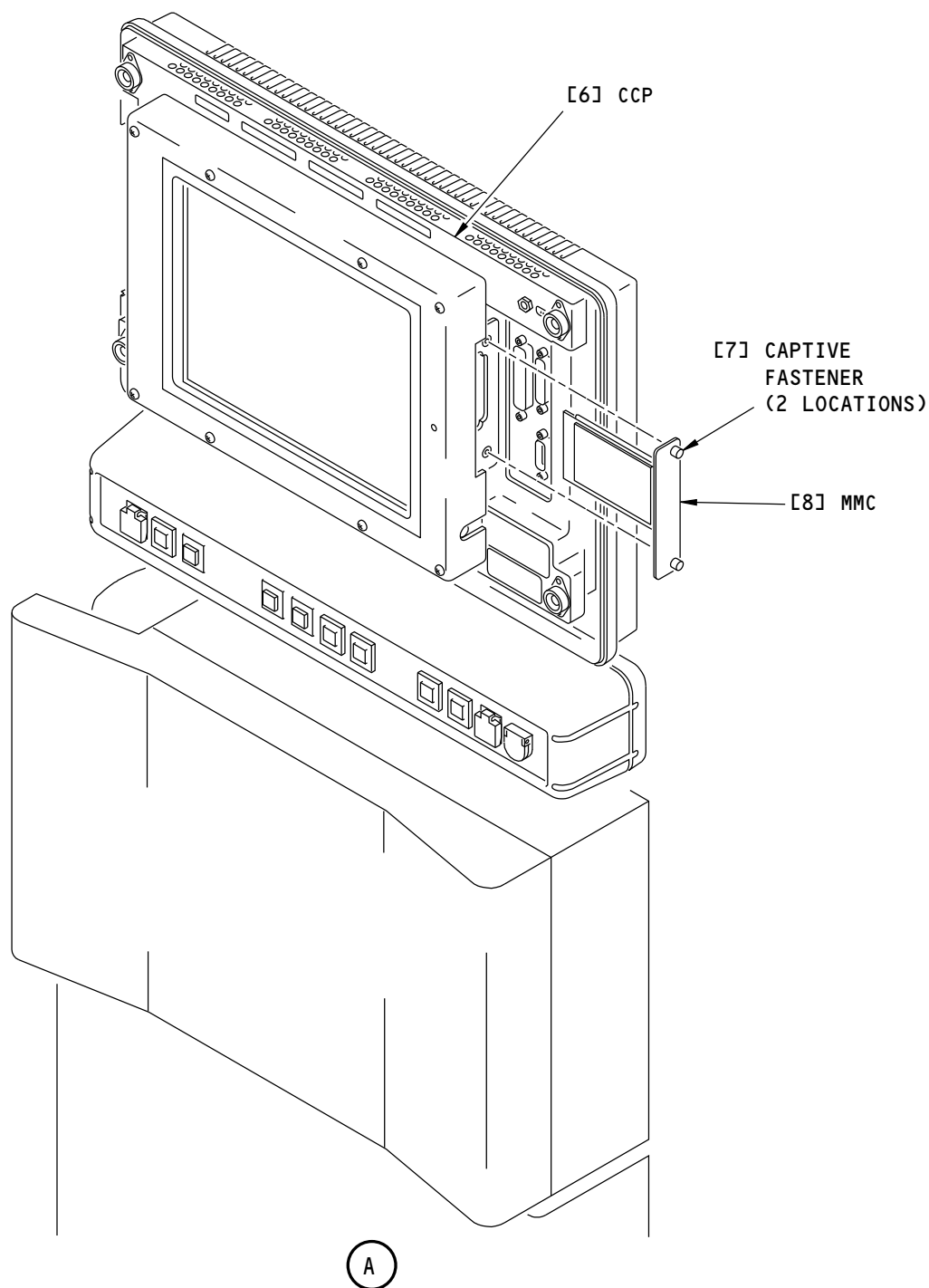
Mass Memory Card (MMC) Installation
Figure 201/23-39-16-990-802 (Sheet 1 of 2)

EFFECTIVITY
ARO 001-015 PRE SB 777-23-0369

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G74186 S0006407387_V1

**Mass Memory Card (MMC) Installation
Figure 201/23-39-16-990-802 (Sheet 2 of 2)**

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ARO 001-015 PRE SB 777-23-0369

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ARO 001-015 PRE SB 777-23-0369 (Continued)

TASK 23-39-16-400-801

3. **Mass Memory Card (MMC) Installation**

(Figure 23-39-16-990-806, Figure 201)

A. General

- (1) If you replace the mass memory card (MMC) in a Cabin System Control Panel (CSCP), you must do a phase I installation of the configuration database.
- (2) If you replace the MMC in a Cabin Area Control Panel (CACP), you must do a phase II installation of the CACP operational program software and the configuration database. You use the CSCP to install the CACP operational program software and to install the configuration database.
- (3) The part number of the MMC for a CACP is different than the part number of the MMC for a CSCP. Make sure the replacement MMC has the correct part number.

B. References

Reference	Title
23-39-00-400-808	Operational Program Software Installation (Phase II) (P/B 201)
23-39-00-400-811	Configuration Database and Lighting Database Installation (Phase II) (P/B 201)
23-39-00-400-812	Phase I Data Installation From the CSCP Disk Drive to the CSCP Mass Storage (P/B 201)
23-39-00-700-802	Operational Program Software and Database Verification Test (P/B 201)
23-39-16-990-806	Figure: Cabin Control Panel (CCP) Installation (P/B 401)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Installation Procedure

SUBTASK 23-39-16-860-009

- (1) For a CCP installed as a CSCP:

Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-16-860-010

- (2) For a CCP installed as a CACP:

Make sure that this circuit breaker is open and has safety tag:

Right Power Management Panel, P210

Row	Col	Number	Name
D	9	C23444	AREA CONTROL PANELS

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ARO 001-015 PRE SB 777-23-0369 (Continued)

SUBTASK 23-39-16-210-001



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CCP [6] OR THE MMC [8]. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CCP [6] OR MMC [8].

- (3) Examine the electrical connectors on the CCP [6] and MMC [8] for bent or broken pins, dirt, foreign objects and damage.

SUBTASK 23-39-16-420-003

- (4) Install the MMC [8] into the CCP [6].

SUBTASK 23-39-16-410-001

- (5) Tighten the captive fasteners [7] that hold the MMC [8] to the CCP [6].

SUBTASK 23-39-16-420-004

- (6) Install the electrical connectors:
- (a) Connect the electrical connectors to the CCP [6].
 - (b) Tighten the screws on the electrical connectors.

SUBTASK 23-39-16-420-005

- (7) Install the CCP front shroud [1]:
- (a) Put the front shroud [1] in position in front of the CCP [6].
 - (b) Engage the auto-lock pins on the front shroud [1] with the CCP [6].
 - (c) Adjust the auto-lock pins with a 1.5 mm allen wrench if it is necessary.
- NOTE: Turn the wrench clockwise to loosen the shroud, and counterclockwise to tighten the shroud.

SUBTASK 23-39-16-860-011

- (8) For a CCP installed as a CSCP:

Do these steps:

- (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>
A	16	C23400	CAB SYS MGMT UNIT

- (b) Do a configuration check of the CSCP. To do the configuration check, do this task: Operational Program Software and Database Verification Test, TASK 23-39-00-700-802.
- 1) Make sure the configuration database part number is correct.
 - a) If the configuration database part number is incorrect, do this task: Phase I Data Installation From the CSCP Disk Drive to the CSCP Mass Storage, TASK 23-39-00-400-812.
 - (c) Do this task: Configuration Database and Lighting Database Installation (Phase II), TASK 23-39-00-400-811.

SUBTASK 23-39-16-860-012

- (9) For a CCP installed as a CACP:

Do these steps:

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ARO 001-015 PRE SB 777-23-0369 (Continued)

- (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>
D	9	C23444	AREA CONTROL PANELS

- (b) Install the CACP operational program software. To install it, do this task: Operational Program Software Installation (Phase II), TASK 23-39-00-400-808.
- (c) Do this task: Configuration Database and Lighting Database Installation (Phase II), TASK 23-39-00-400-811.

E. Installation Test

SUBTASK 23-39-16-740-002

- (1) Use the Cabin System Control Panel (CSCP) to do the installation test:

- (a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN TESTS
- 3) START ALL TEST
- 4) CONTINUE TEST

- (b) Make sure that there is no failure for the CCP.

NOTE: Approximately 2 minutes are necessary to complete the ALL TEST. If there is no failure, the CSCP will show NO FAULTs or the CONTROLLERS selection on the ALL TEST FAULTS REVIEW menu will be gray.

————— END OF TASK —————

TASK 23-39-16-000-804

4. Floppy Disk Drive (FDD) Removal

(Figure 23-39-16-990-806, Figure 202)

A. General

- (1) The floppy disk drive (FDD) is in the cabin control panel (CCP). The CCP must be removed to get access to the FDD.

B. References

<u>Reference</u>	<u>Title</u>
23-39-16-990-806	Figure: Cabin Control Panel (CCP) Installation (P/B 401)

C. Location Zones

<u>Zone</u>	<u>Area</u>
200	Upper Half of Fuselage

D. Removal Procedure

SUBTASK 23-39-16-860-013

- (1) 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>
A	16	C23400	CAB SYS MGMT UNIT

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ARO 001-015 PRE SB 777-23-0369 (Continued)

SUBTASK 23-39-16-020-006

- (2) Remove the front shroud [1] from the CCP [6]:
- (a) Push a small allen wrench (less than 1.5 mm) in the auto-lock pin holes to release the auto-lock pins that attach the front shroud [1] to the CCP [6].
NOTE: The auto-lock pins are released when you push the wrench. If you use the 1.5 mm wrench to turn the auto-lock pin, you will change the adjustment of the shroud [1] to the CCP [6].
 - (b) Remove the front shroud [1].

SUBTASK 23-39-16-020-007



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CCP [6]. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CCP [6].

- (3) Remove the FDD:
- (a) Loosen the screws [2] on the electrical connector [3].
 - (b) Disconnect the electrical connector [3] from the CCP [6].
 - (c) While you hold the CCP [6], remove the screws [9] and washers [10] that attach the CCP [6] to the rear shroud.
 - (d) Remove the CCP [6].
 - (e) Put protective covers on the electrical connectors.
 - (f) Loosen the captive fasteners [4] that hold the FFD [5] to the CCP [6].
 - (g) Remove the FFD [5].

———— **END OF TASK** ————

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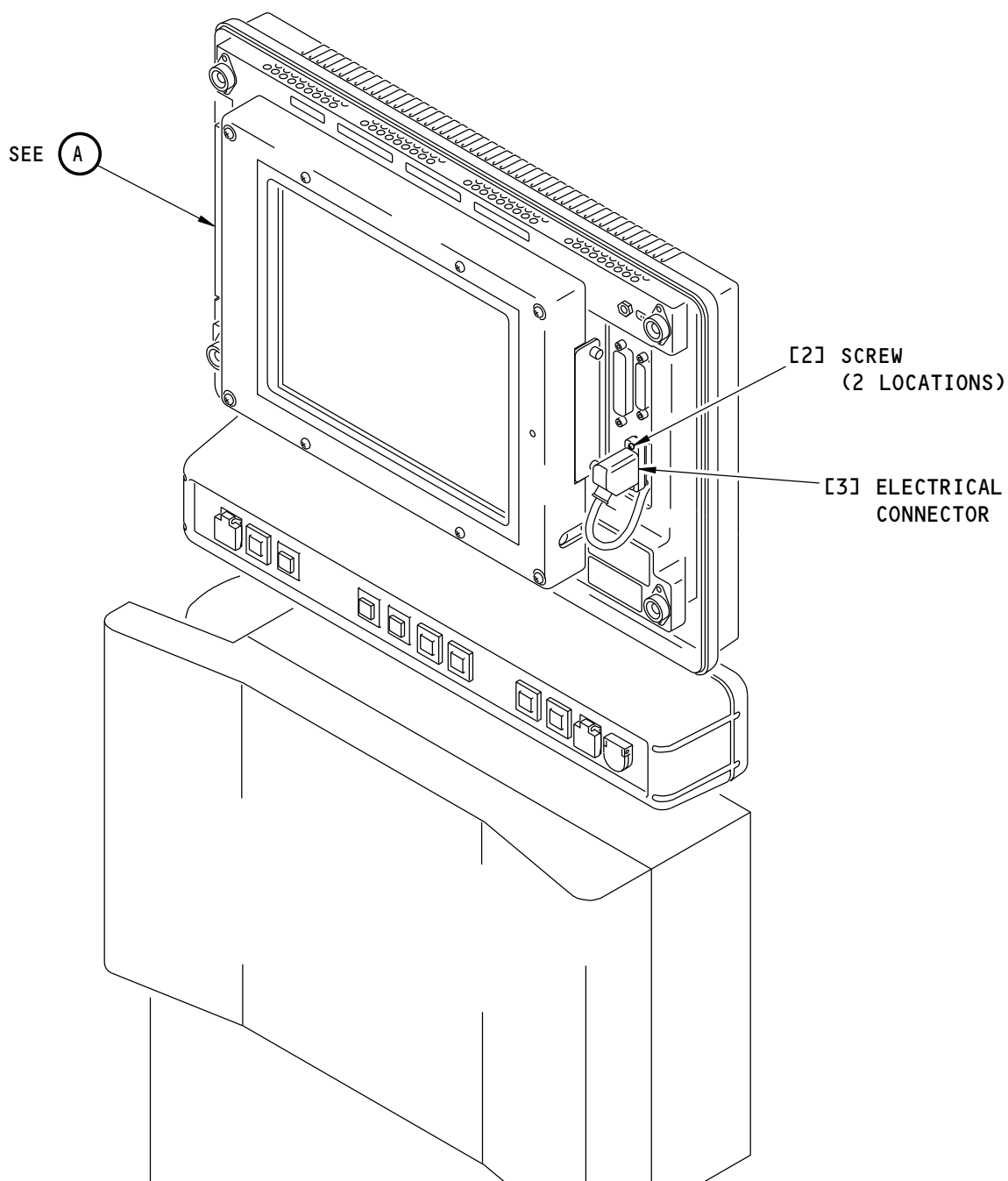
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CABIN CONTROL PANEL (CCP) FRONT SHROUD REMOVED
(EXAMPLE)

G74187 S0006407390_V1

Floppy Disk Drive (FDD) Installation
Figure 202/23-39-16-990-803 (Sheet 1 of 2)

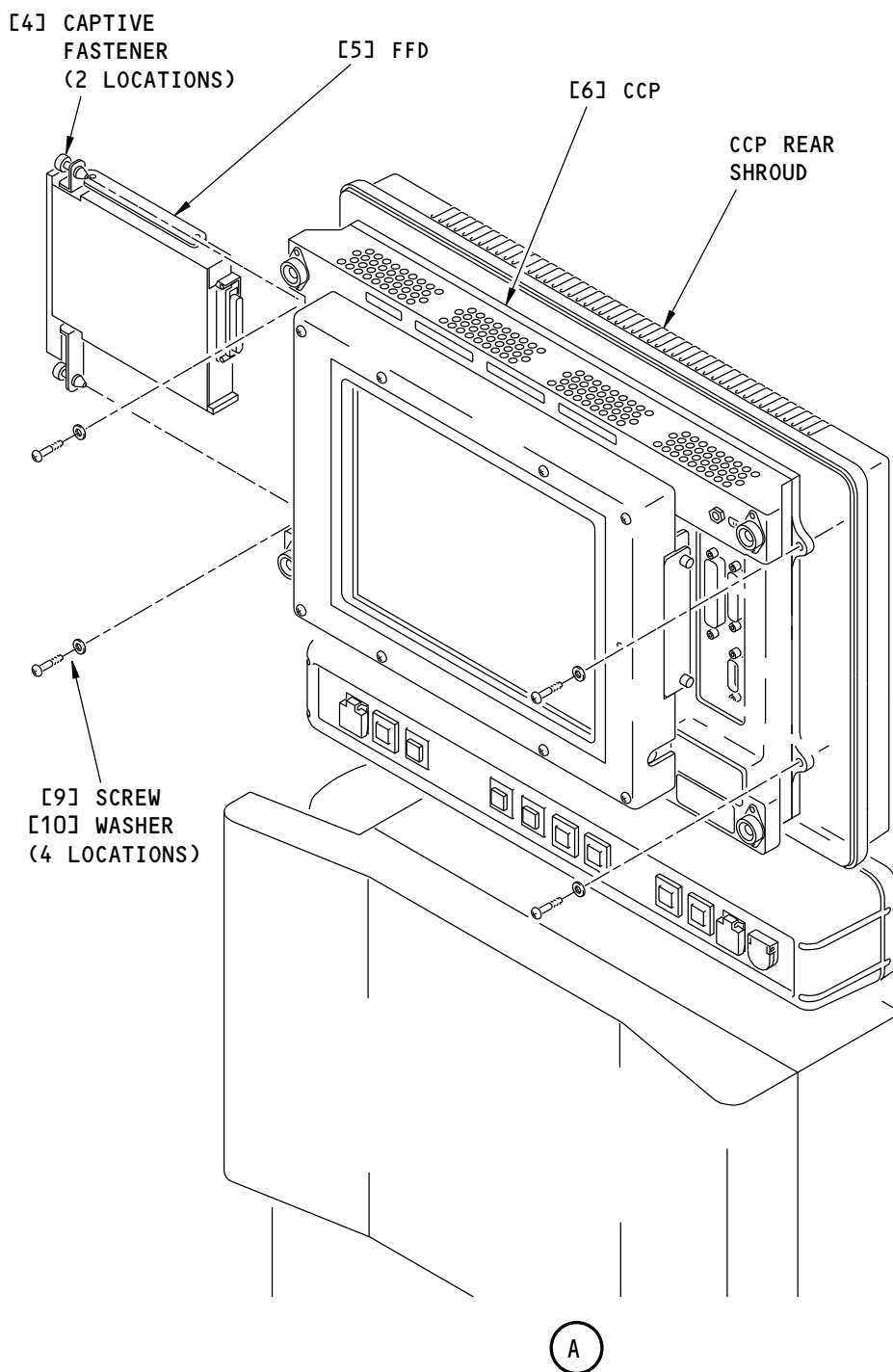
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G74192 S0006407391_V1

**Floppy Disk Drive (FDD) Installation
Figure 202/23-39-16-990-803 (Sheet 2 of 2)**

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ARO 001-015 PRE SB 777-23-0369 (Continued)

TASK 23-39-16-400-802

5. Floppy Disk Drive (FDD) Installation

(Figure 23-39-16-990-806, Figure 202)

A. References

Reference	Title
23-39-16-990-806	Figure: Cabin Control Panel (CCP) Installation (P/B 401)

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Installation Procedure

SUBTASK 23-39-16-860-014

- (1) Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-16-210-002

- (2) Examine the electrical connectors on the CCP [6] and FFD [5] for bent or broken pins, dirt, foreign objects and damage.

SUBTASK 23-39-16-420-006



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CCP. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CCP.

- (3) Install the FFD [5]:
- (a) Put the FFD [5] into the CCP [6].
 - (b) Tighten the captive fasteners [4] that hold the FFD [5] to the CCP [6].
 - (c) While you hold the CCP [6] in its position, install the screws [9] and washers [10] that attach the CCP [6] to the rear shroud.
 - (d) Remove the protective covers from the electrical connectors.
 - (e) Connect the electrical connector [3] to the CCP [6].
 - (f) Tighten the screws [2] on the electrical connector [3].

SUBTASK 23-39-16-420-007

- (4) Install the front shroud [1] on the CCP [6]:
- (a) To install the front shroud [1], engage the auto-lock pins with the floating inserts on the CCP [6].
 - (b) Adjust the auto-lock pins with a 1.5 mm allen wrench if it is necessary.
- NOTE: Turn the wrench clockwise to loosen the shroud, and counterclockwise to tighten the shroud.

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SUBTASK 23-39-16-860-015

- (5) 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>
A	16	C23400	CAB SYS MGMT UNIT

D. Installation Test

SUBTASK 23-39-16-740-003

- (1) Use the Cabin System Control Panel (CSCP) to do the installation test:

- (a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN TESTS
- 3) START ALL TEST
- 4) CONTINUE TEST

- (b) Make sure that there is no failure for the CCP.

NOTE: Approximately 2 minutes are necessary to complete the ALL TEST. If there is no failure, the CSCP will show NO FAULTs or the CONTROLLERS selection on the ALL TEST FAULTS REVIEW menu will be gray.

ARO ALL

————— END OF TASK —————

TASK 23-39-16-960-801

6. Backlight Replacement

(Figure 23-39-16-990-806 or Figure 23-39-16-990-807, Figure 203, Figure 204)

A. General

- (1) AIRPLANES WITH CCP 285W0863-1;

The CCP has two backlights in it: one at the top of the screen and one at the bottom. To replace the backlight at the bottom of the screen, you must remove the electrical ribbon cable.

- (2) AIRPLANES WITH CCP 285W0863-2 THRU -999;

The CCP has two backlights in it: the two fluorescent bulbs are packaged together in a single cartridge assembly located at the top of the screen. To replace the backlights, you must remove the touchscreen assembly from the CCP chassis [29] which remains attached to the rear shroud.

B. References

<u>Reference</u>	<u>Title</u>
23-39-16-990-806	Figure: Cabin Control Panel (CCP) Installation (P/B 401)
23-39-16-990-807	Figure: Cabin Control Panel (CCP) Installation (P/B 401)

C. Location Zones

<u>Zone</u>	<u>Area</u>
200	Upper Half of Fuselage

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D. Replacement Procedure

SUBTASK 23-39-16-860-016

- (1) For a CCP installed as a CSCP:

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>
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-16-860-017

- (2) For a CCP installed as a CACP:

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>
D	9	C23444	AREA CONTROL PANELS

SUBTASK 23-39-16-020-008

- (3) Remove the front shroud [1] from the CCP [6]:

- (a) Push a small allen wrench (less than 1.5 mm) in the auto-lock pin holes to release the auto-lock pins that attach the front shroud [1] to the CCP [6].

NOTE: The auto-lock pins are released when you push the wrench. If you use the 1.5 mm wrench to turn the auto-lock pin, you will change the adjustment of the shroud [1] to the CCP [6].

- (b) Remove the front shroud [1].

SUBTASK 23-39-16-020-009

- (4) To remove the touchscreen, do these steps:



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CCP CHASSIS [29] OR TOUCHSCREEN [21]. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CCP CHASSIS [29] OR TOUCHSCREEN [21].

- (a) Connect an ESD wrist strap to the ground wire connector E1 on the touchscreen assembly [21].



CAUTION

THE TOUCHSCREEN [21] IS HELD ONLY BY THE ELECTRICAL CONNECTORS AFTER YOU LOOSEN THE SCREWS. DO NOT LET THE TOUCHSCREEN [21] FALL TO THE GROUND.

- (b) Loosen the captive screws [22] that connect the touchscreen [21] to the CCP chassis [29].

NOTE: Before you remove the touchscreen assembly [21], find a clean and dry horizontal surface to hold the touchscreen assembly [21].

- (c) Pull to remove the touchscreen [21] from the CCP chassis [29].
(d) Put the touchscreen assembly [21] on a clean and dry horizontal surface with the screen facing down.

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DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE TOUCHSCREEN [21]. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE TOUCHSCREEN [21].

- (e) Make sure the ESD wrist strap is connected to the ground wire connector E1.

NOTE: Keep the ESD wrist strap connected to the ground wire connector E1 until you replace the touchscreen assembly [21] onto the CCP chassis [29].

SUBTASK 23-39-16-020-010

- (5) AIRPLANES WITH CCP 285W0863-1;

To remove the backlight, do these steps:

- (a) Unlock the two ejector latches [24] on the ribbon cable connector.
- (b) Disconnect the ribbon cable [23].
- (c) Disconnect the electrical connector [27] to the backlight.
- (d) Loosen the fasteners [26] that hold the backlight covers [25], [28] to the touchscreen [21].
- (e) Remove the backlight covers [25], [28].
- (f) Remove the backlight electrical connector [27] and electrical wire from the backlight covers [25], [28].
- (g) Carefully remove the backlight from the touchscreen [21].

SUBTASK 23-39-16-020-011

- (6) AIRPLANES WITH CCP 285W0863-2 THRU -999;

To remove the backlight, do these steps:

- (a) Disconnect the three electrical connectors [30] and [32] to the backlight cartridge [31].
NOTE: The backlight cartridge is held in place by a spring loaded latch.
- (b) Use a small tool to press down the latch to release the backlight cartridge assembly [31].
- (c) Carefully grasp the three electrical wire leads near the backlight cartridge assembly [31].
- (d) Gently pull on the electrical wire leads to remove the backlight cartridge assembly [31].
- (e) Remove the backlight cartridge assembly [31] from the touchscreen assembly [21].

SUBTASK 23-39-16-420-008

- (7) AIRPLANES WITH CCP 285W0863-1;

To install the backlight, do these steps:

- (a) Carefully put the backlight in its mounted position in the touchscreen [21].
- (b) Put the backlight electrical connector [27] and electrical wire through the slot in the backlight cover [25], [28].
- (c) Install the backlight covers [25], [28].
- (d) Tighten the captive fasteners [26] that hold the backlight covers [25], [28].
- (e) Connect the electrical connector [27] from the backlight to the touchscreen [21].
- (f) Connect the connector on the ribbon cable [23].
- (g) Lock the two ejector latches [24] that hold the ribbon cable connector.

SUBTASK 23-39-16-420-011

- (8) AIRPLANES WITH CCP 285W0863-2 THRU -999;

To install the backlight, do these steps:

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CAUTION

THE BACKLIGHTS ARE FRAGILE AND THE BACKLIGHT CARTRIDGE CAN EASILY BE DEFORMED MAKING IT DIFFICULT TO INSTALL. AVOID MECHANICALLY SHOCKING OR BENDING THE BACKLIGHT CARTRIDGE.

- (a) Position the backlight cartridge [31], with the end opposite the electrical wire leads at the entrance to the slot in the touchscreen assembly [21].
- (b) Carefully install the backlight cartridge [31] into the slot.
 - 1) Make sure the backlight cartridge [31] is in line with the slot to avoid bending the backlight cartridge [31].
- (c) Push the backlight cartridge [31] into the slot until you feel some initial resistance. Then push the backlight cartridge [31] in with slightly more force until the backlight cartridge [31] stops.
- (d) Connect the gray electrical wire lead from the backlight cartridge [31] to the electrical connector [30] on the touchscreen assembly [21].
- (e) Connect each of the white electrical wire leads from the backlight cartridge [31] to either of the electrical connectors [32] on the touchscreen assembly [21].

SUBTASK 23-39-16-420-009

- (9) To install the touchscreen, do these steps:
 - (a) Connect an ESD wrist strap to the ground wire connector E2.
 - (b) Put the touchscreen [21] in position on the CCP chassis [29].
 - 1) Make sure the guide pins align with the guides.
 - (c) Push the touchscreen [21] into its seated position.
 - 1) Make sure the electrical connector seats correctly.
 - (d) Tighten the captive screws [22] that hold the touchscreen [21] to the CCP chassis [29].
 - (e) Disconnect the ESD wrist strap from ground wire connector E2.

SUBTASK 23-39-16-420-010

- (10) Install the front shroud [1] on the CCP [6]:
 - (a) To install the front shroud [1], engage the auto-lock pins with the floating inserts on the CCP [6].
 - (b) Adjust the auto-lock pins with a 1.5 mm allen wrench if it is necessary.

NOTE: Turn the wrench clockwise to loosen the shroud, and counterclockwise to tighten the shroud.

SUBTASK 23-39-16-860-018

- (11) For a CCP installed as a CSCP:

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>
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-16-860-019

- (12) For a CCP installed as a CACP:

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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>
D	9	C23444	AREA CONTROL PANELS

E. Installation Test

SUBTASK 23-39-16-710-001

- (1) Make sure that the Main Menu shows on the CCP [1].

———— **END OF TASK** ————

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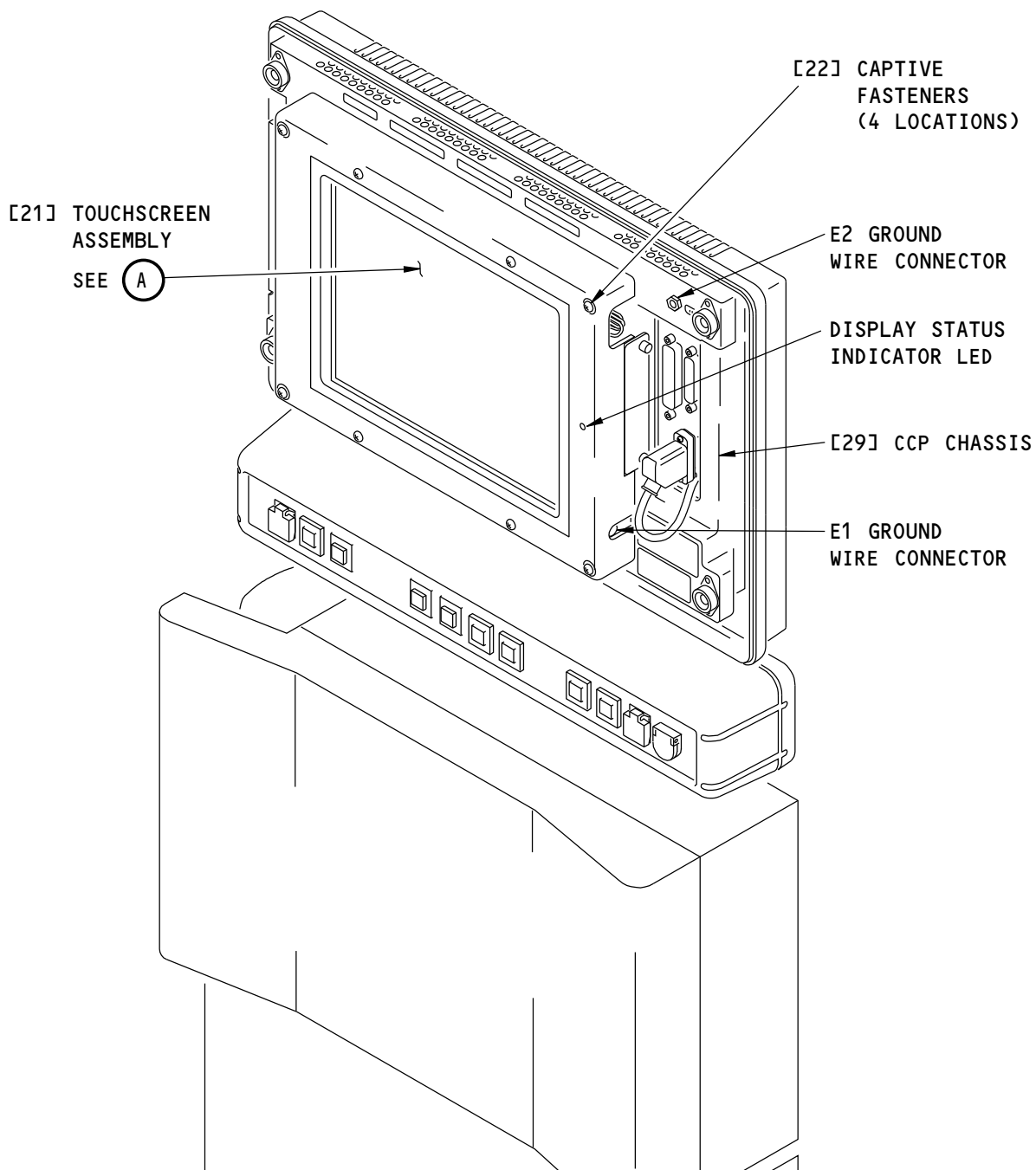
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CABIN CONTROL PANEL (CCP) FRONT SHROUD REMOVED
(EXAMPLE)

K44602 S0006407394_V1

Touchscreen Backlight Installation
Figure 203/23-39-16-990-804 (Sheet 1 of 2)

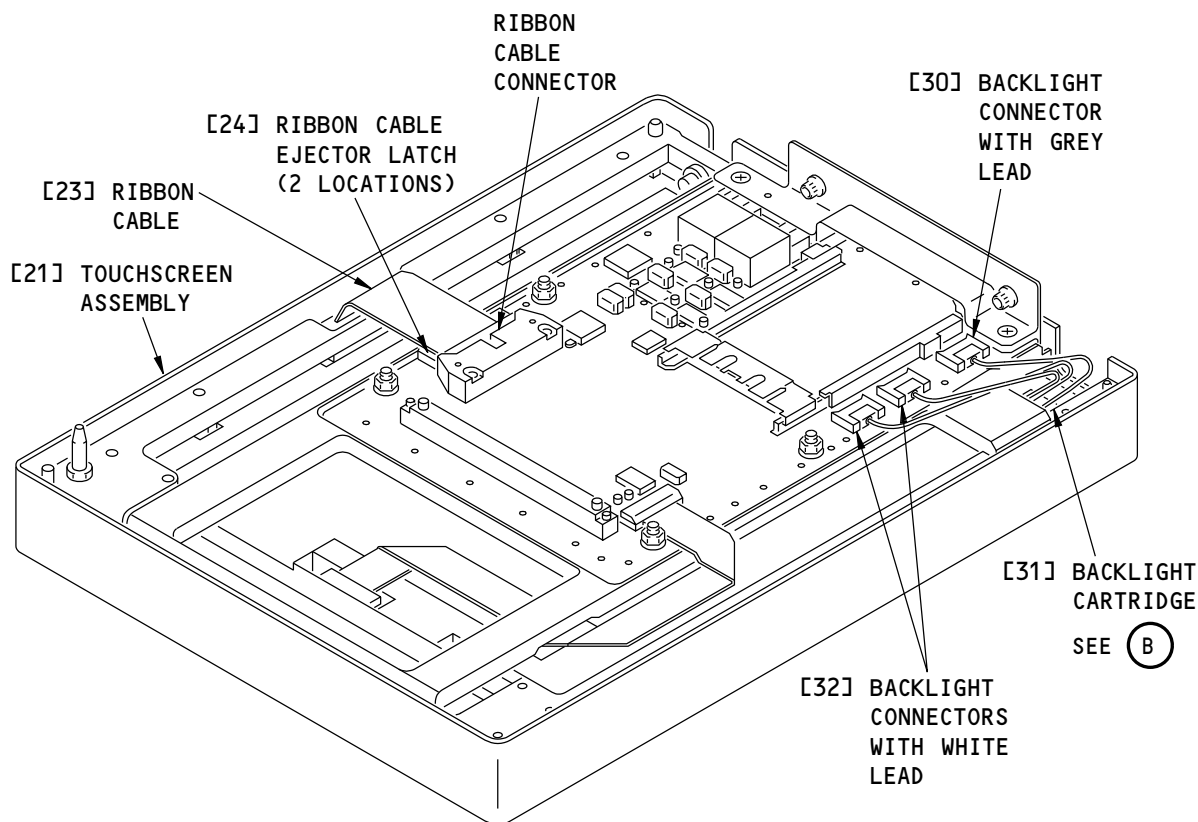
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23-39-16

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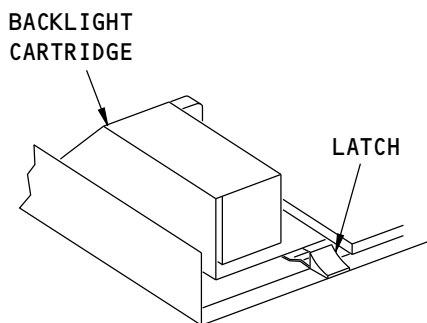
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REAR SURFACE OF TOUCHSCREEN

(A)



BACKLIGHT CARTRIDGE

(B)

K44778 S0006407395_V1

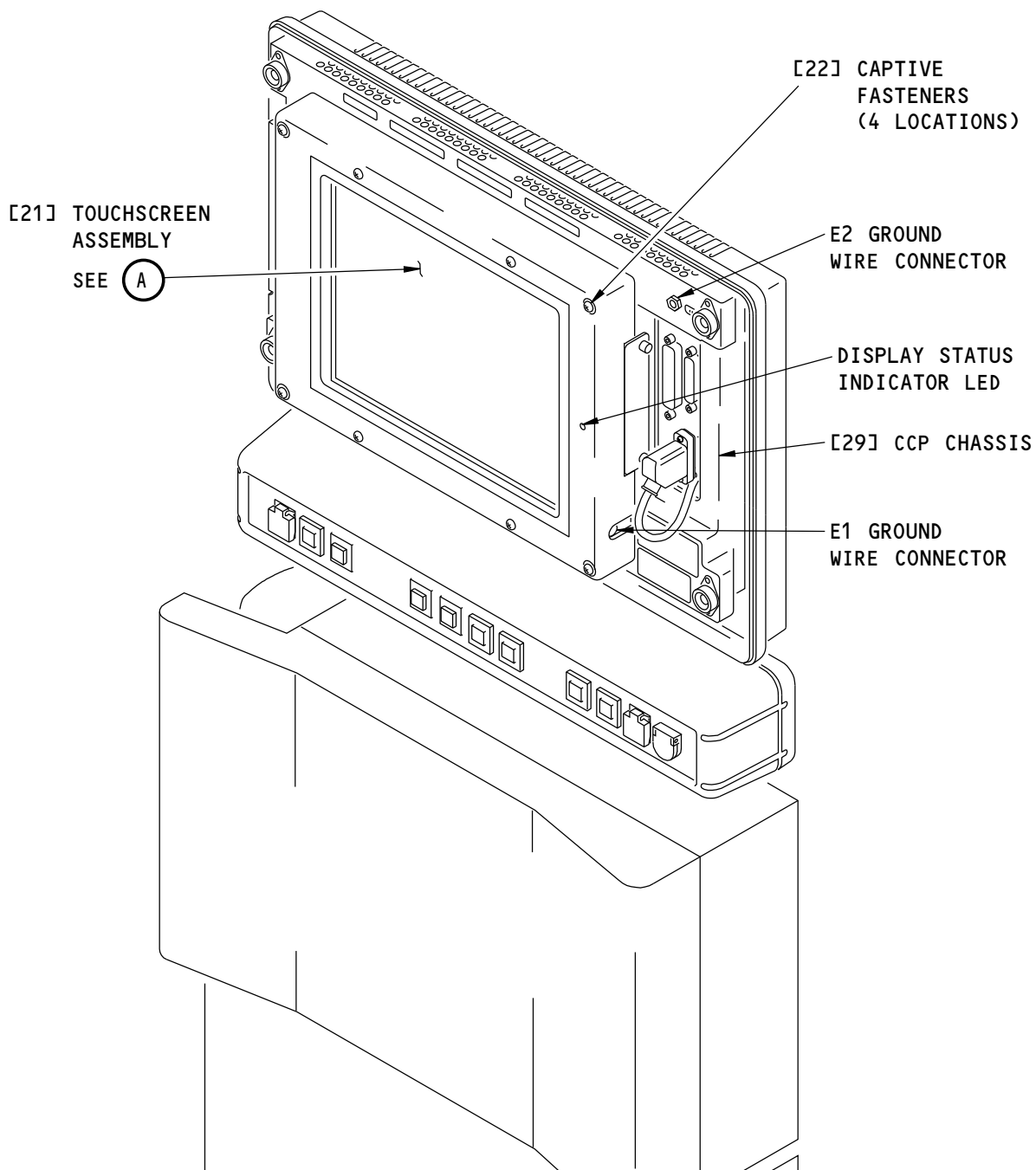
**Touchscreen Backlight Installation
Figure 203/23-39-16-990-804 (Sheet 2 of 2)**

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**CABIN CONTROL PANEL (CCP) FRONT SHROUD REMOVED
(EXAMPLE)**

G74727 S0006407396_V1

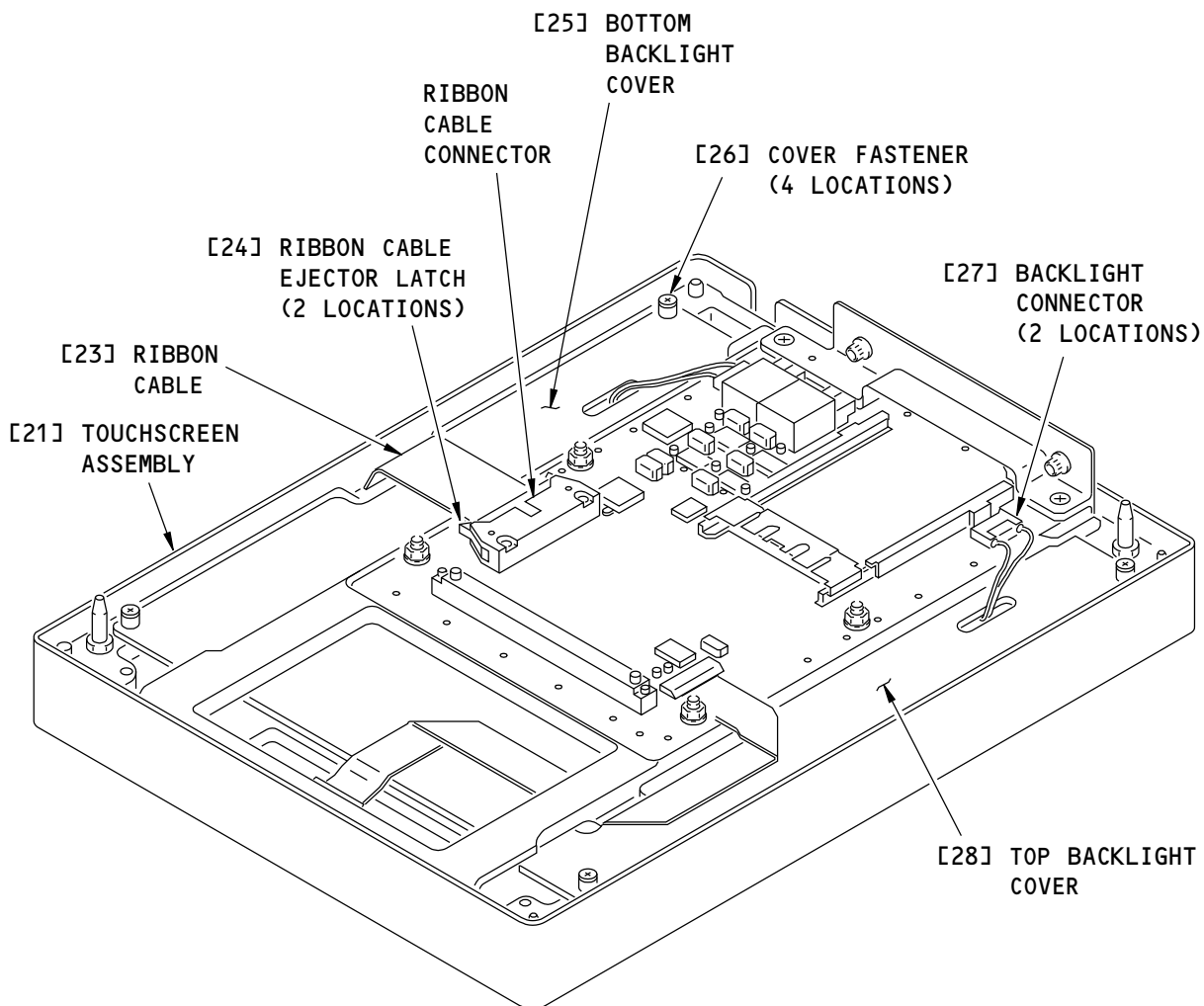
**Touchscreen Backlight Installation
Figure 204/23-39-16-990-805 (Sheet 1 of 2)**

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REAR SURFACE OF TOUCHSCREEN

(A)

G76004 S0006407397_V1

**Touchscreen Backlight Installation
Figure 204/23-39-16-990-805 (Sheet 2 of 2)**

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TASK 23-39-16-100-801

7. Touchscreen Cleaning

A. Consumable Materials

Reference	Description	Specification
B01057	Cleaner - Glass, Standard Household	
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A
G00268	Brush - Soft Bristle, Paint	

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Procedure

SUBTASK 23-39-16-040-001

(1) Deactivate the touchscreen:

(a) Touch these selections from the MAIN MENU on the Cabin System Control Panel (CSCP) or the Cabin Attendant Control Panel (CACP):

- 1) CABIN CONTROLS
- 2) DISPLAY CONTROLS
- 3) PANEL LOCKOUT

NOTE: The touchscreen will be deactivated for 30 seconds so that you can clean the touchscreen.

SUBTASK 23-39-16-100-001



CAUTION

DO NOT USE ABRASIVE MATERIALS WHEN YOU CLEAN THE TOUCHSCREEN. THE TOUCHSCREEN IS A SOFT SURFACE AND ABRASIVE MATERIAL WILL CAUSE SCRATCHES IN THE TOUCHSCREEN.

(2) Clean dirt and lint from the touchscreen with a clean, soft, natural-bristle brush, G00268.

SUBTASK 23-39-16-100-003



CAUTION

DO NOT CLEAN THE TOUCHSCREEN WITH A DRY CLOTH. A DRY CLOTH WILL CAUSE SCRATCHES.

(3) Clean grease, oil and contamination from the touchscreen with a cotton wiper, G00034 and glass cleaner, B01057.

(a) Apply the glass cleaner, B01057 to the cotton wiper, G00034.



CAUTION

DO NOT USE EXCESSIVE FORCE WHEN YOU WIPE THE TOUCHSCREEN. USE OF EXCESSIVE FORCE WILL DAMAGE THE TOUCHSCREEN.



CAUTION

DO NOT USE A DRY CLOTH TO TRY TO REMOVE ANY REMAINING FILM. A DRY CLOTH WILL CAUSE DAMAGE.

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(CAUTION PRECEDES)



DO NOT CONTINUE TO WIPE THE TOUCHSCREEN AFTER THE TOUCHSCREEN OR THE COTTON WIPER, G00034 IS DRY. IF YOU CONTINUE TO WIPE THE TOUCHSCREEN IT WILL CAUSE DAMAGE.

- (b) Lightly wipe the touchscreen in a straight linear pattern, top to bottom motion, start at one side of the screen and move to the other side.
 - 1) After every two wipes use another clean section of cotton wiper, G00034 with more glass cleaner, B01057 applied.
 - 2) Replace the cotton wiper, G00034 when all of the clean areas are used.
- (c) Allow the touchscreen to air dry.
- (d) If some residual film or streaks remain on the touchscreen after you clean the touchscreen, clean the touchscreen again.

NOTE: Minor streaks or residual film is acceptable. Light streaking is not likely to be noticeable when the display is on.

NOTE: After you clean the touchscreen, the anti-reflective optical coating may have a slight variation in color, depending upon the light conditions and viewing angle. This variation is acceptable.

————— **END OF TASK** —————

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CABIN CONTROL PANEL (CCP)

1. General

- A. This procedure has these tasks:
- (1) A removal of the Cabin Control Panel (CCP)
 - (2) An installation of the CCP.

TASK 23-39-16-000-805

2. Cabin Control Panel (CCP) Removal

Figure 401 or Figure 402

A. Location Zones

<u>Zone</u>	<u>Area</u>
200	Upper Half of Fuselage

B. Removal Procedure

SUBTASK 23-39-16-860-031

- (1) For a CCP installed as a CSCP:
- 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>
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-16-860-032

- (2) For a CCP installed as a CACP:
- 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>
D	9	C23444	AREA CONTROL PANELS

SUBTASK 23-39-16-020-012

- (3) Remove the front shroud [1] from the CCP [6]:
- (a) Push a small allen wrench (less than 1.5 mm) in the auto-lock pin holes to release the auto-lock pins that attach the front shroud [1] to the CCP [6].
NOTE: The auto-lock pins are released when you push the wrench. If you use the 1.5 mm wrench to turn the auto-lock pin, you will change the adjustment of the front shroud [1] to the CCP [6].
 - (b) Remove the front shroud [1].

ARO 001-015 PRE SB 777-23-0369

SUBTASK 23-39-16-020-013

 CAUTION	DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CCP. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CCP.

- (4) Remove the CCP [6]:
- (a) Loosen the screws [2] on the electrical connector [3].

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ARO 001-015 PRE SB 777-23-0369 (Continued)

- (b) Disconnect the two electrical connectors from the CCP [6].
- (c) Loosen the captive fasteners [7] that hold the MMC [8] to the CCP [6].
- (d) Remove the MMC [8].
 - 1) Retain the MMC [8] for installation into the replacement CCP.
- (e) While you hold the CCP [6], remove the screws [9] and washers [10] that attach the CCP [6] to the rear shroud.
- (f) Remove the CCP [6].
- (g) Put protective covers on the electrical connectors.
- (h) For a CCP installed as a CSCP:
Do these steps to remove the FDD:
 - 1) Loosen the captive fasteners [4] that hold the FDD [5] to the CCP [6].
 - 2) Remove the FDD [5].
 - 3) Retain the FDD [5] for installation into the replacement CCP.

ARO 016-999; ARO 001-015 POST SB 777-23-0369

SUBTASK 23-39-16-020-014



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CCP. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CCP.

- (5) Remove the CCP [6]:
 - (a) Loosen the screws [2] on the electrical connector [3].
 - (b) Disconnect the two electrical connectors from the CCP [6].
 - (c) While you hold the CCP [6], remove the screws [9] that attach the CCP [6] to the rear shroud.
 - (d) Remove the CCP [6].
 - (e) Put protective covers on the electrical connectors.

————— **END OF TASK** —————

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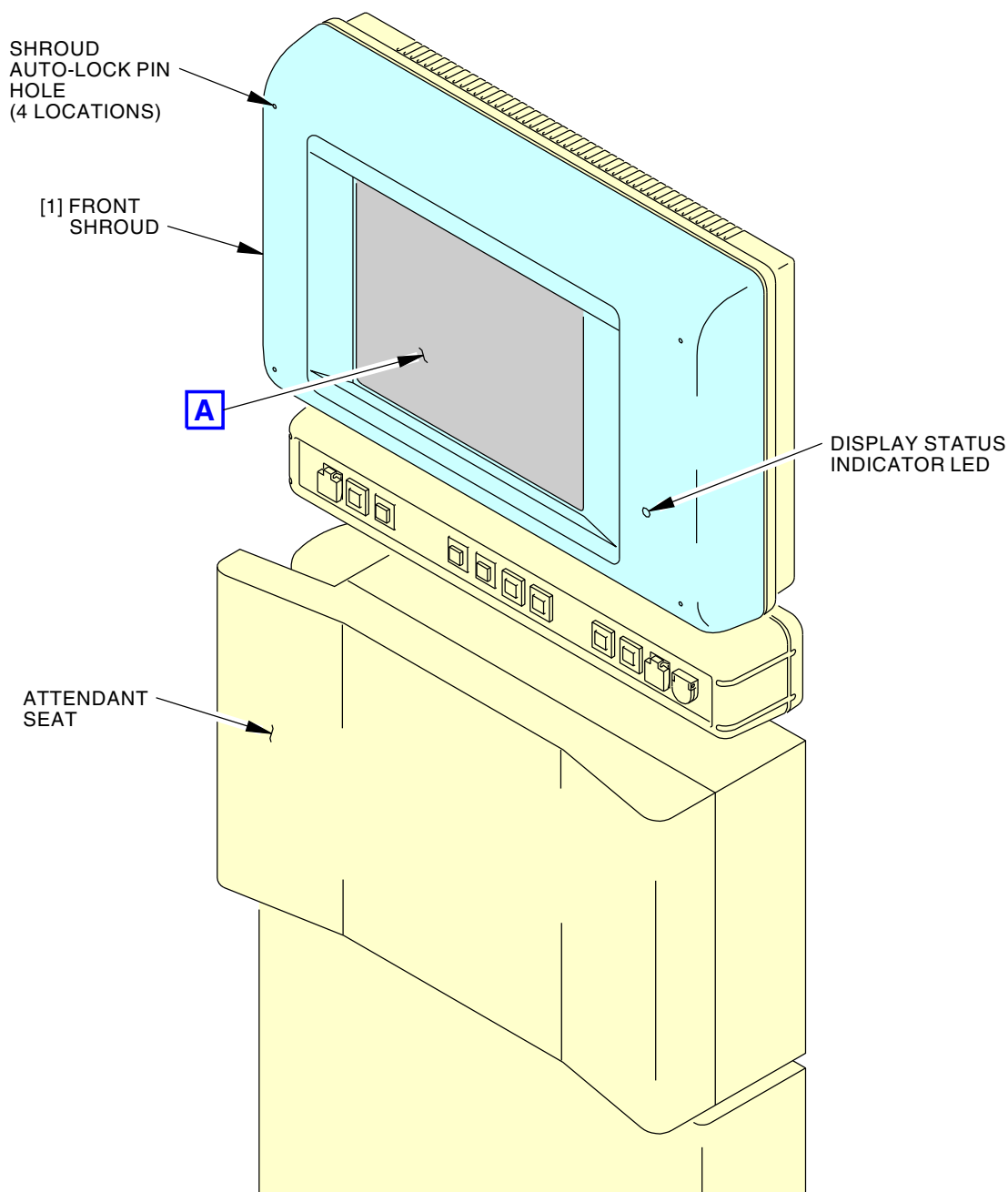
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ATTENDANT SEAT
(EXAMPLE)

G71966 S0006407381_V2

Cabin Control Panel (CCP) Installation
Figure 401/23-39-16-990-806 (Sheet 1 of 3)

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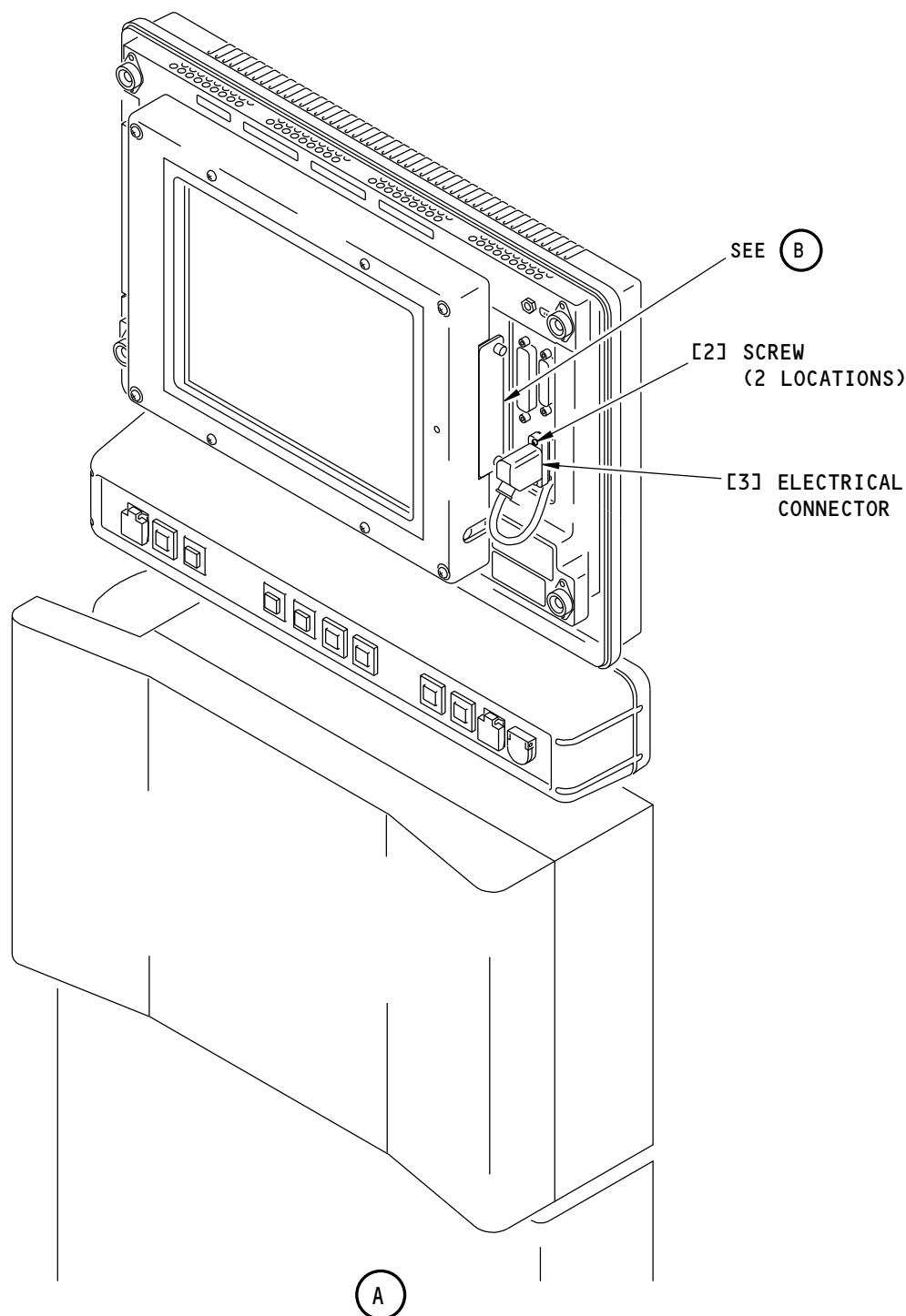
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G73841 S0006407382_V1

Cabin Control Panel (CCP) Installation
Figure 401/23-39-16-990-806 (Sheet 2 of 3)

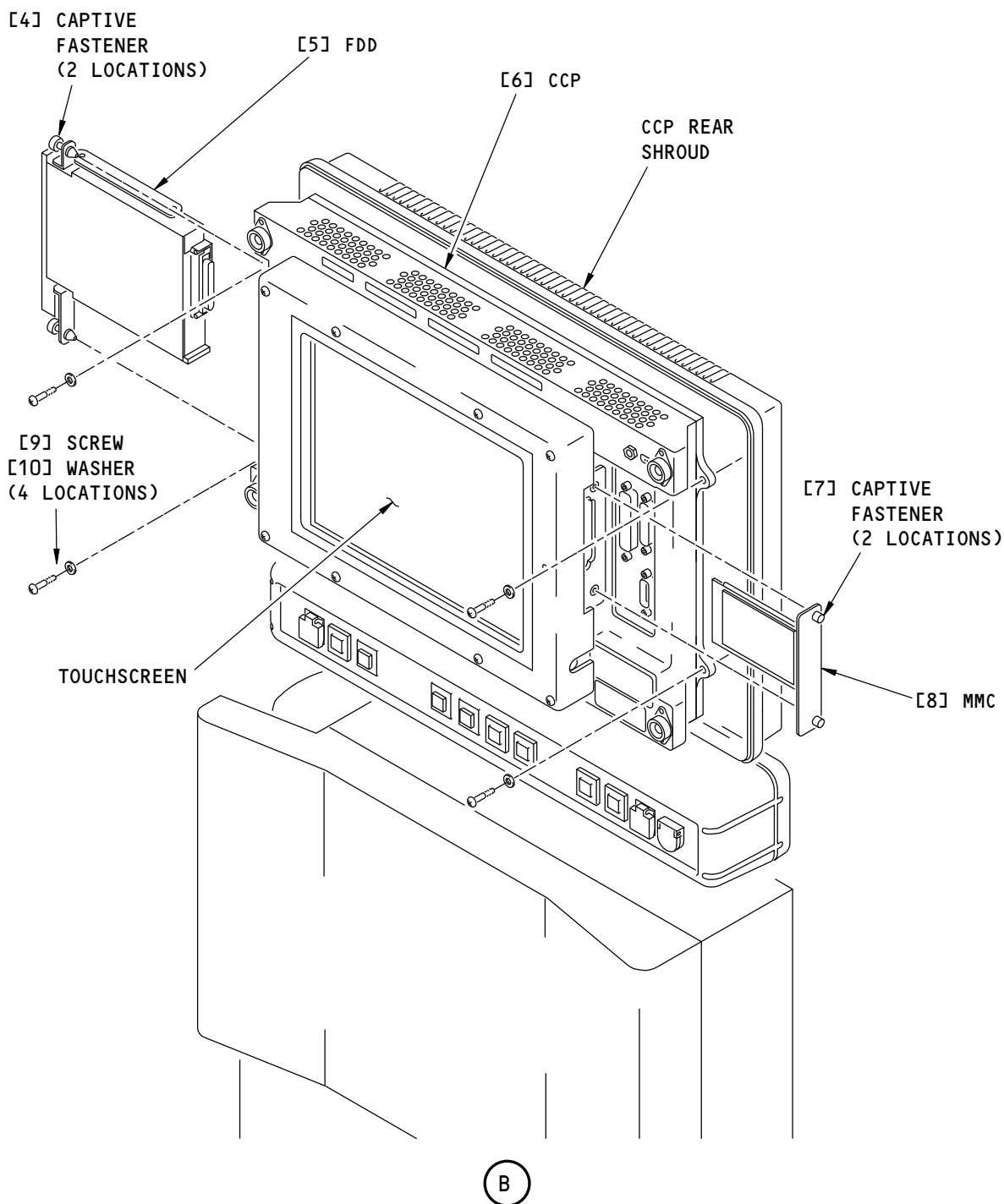
EFFECTIVITY
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G73864 S0006407383_V1

**Cabin Control Panel (CCP) Installation
Figure 401/23-39-16-990-806 (Sheet 3 of 3)**

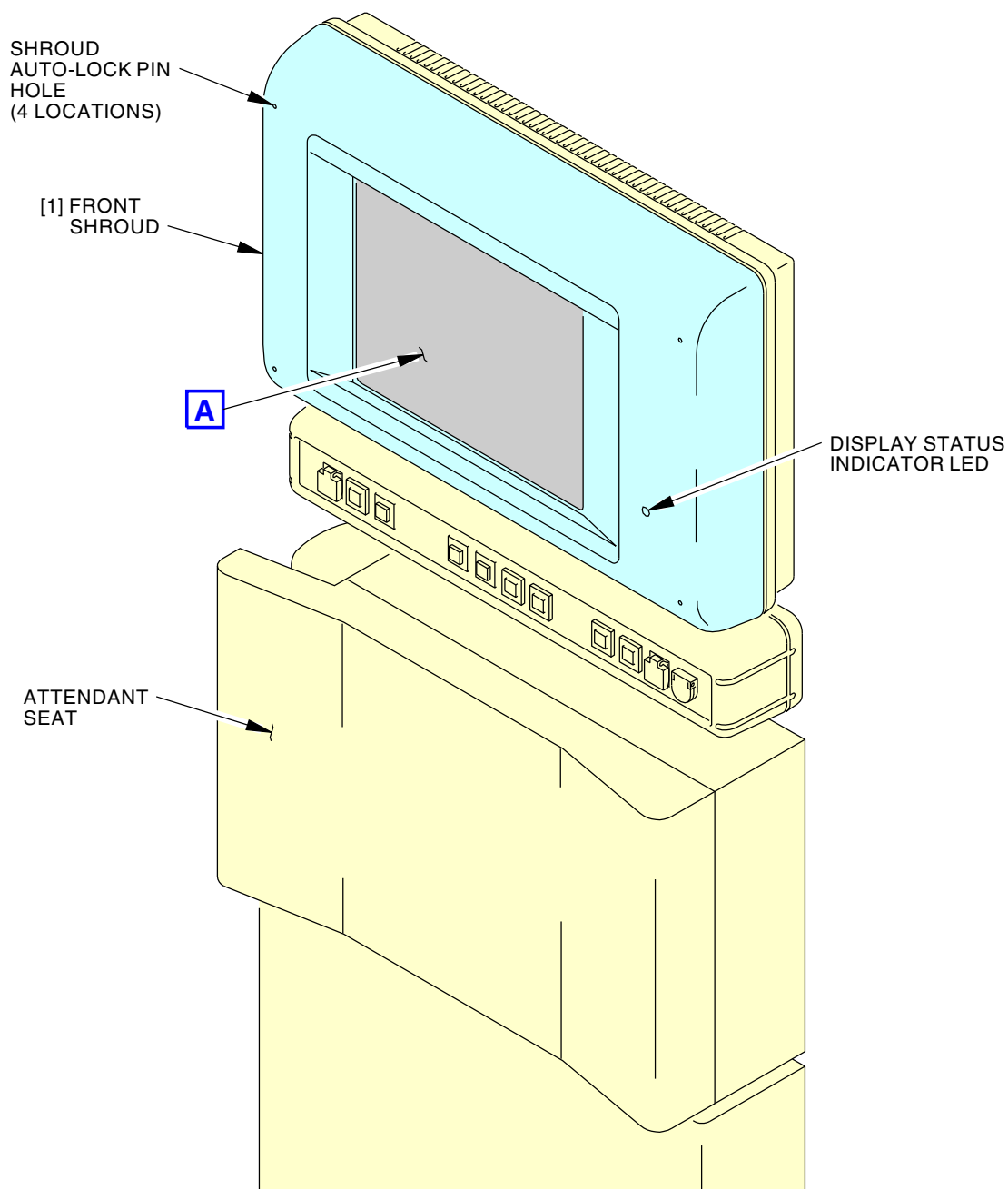
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**ATTENDANT SEAT
(EXAMPLE)**

G71966 S0006407381_V2

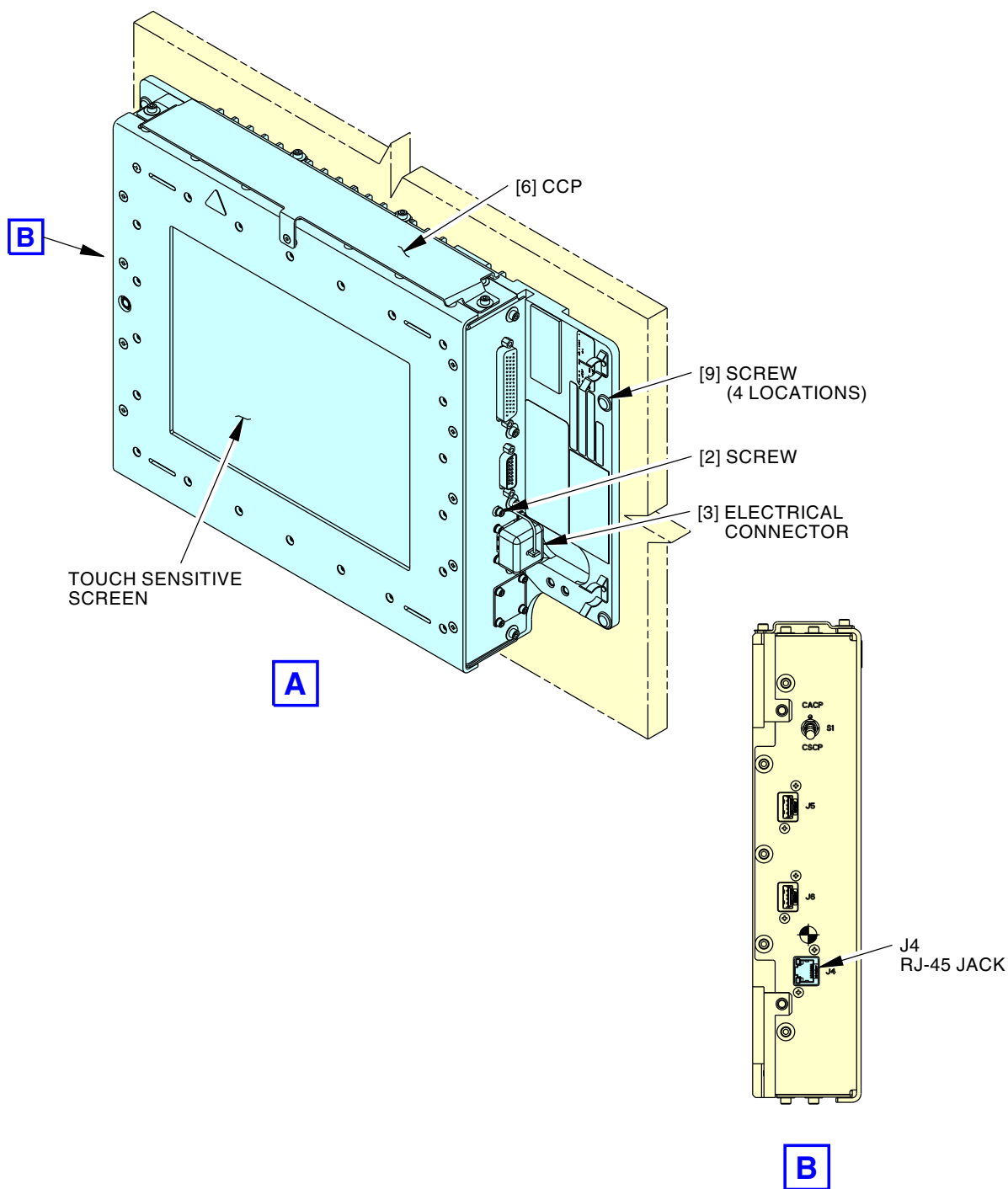
**Cabin Control Panel (CCP) Installation
Figure 402/23-39-16-990-807 (Sheet 1 of 2)**

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ARO 016-999; ARO 001-015 POST SB 777-23-0369

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2561007 S0000611535_V1

**Cabin Control Panel (CCP) Installation
Figure 402/23-39-16-990-807 (Sheet 2 of 2)**

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TASK 23-39-16-400-804

3. Cabin Control Panel (CCP) Installation

Figure 401 or Figure 402

A. Location Zones

Zone	Area
200	Upper Half of Fuselage

B. Installation Procedure

SUBTASK 23-39-16-860-034

- (1) For a CCP installed as a CSCP:

Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-16-860-035

- (2) For a CCP installed as a CACP:

Make sure that this circuit breaker is open and has safety tag:

Right Power Management Panel, P210

Row	Col	Number	Name
D	9	C23444	AREA CONTROL PANELS

ARO 001-015 PRE SB 777-23-0369

SUBTASK 23-39-16-420-012

- (3) Install the CCP [6]:



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CCP. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CCP.

- Remove the protective covers from the electrical connectors.
- Examine the electrical connectors for bent or broken pins, dirt, and damage.
- For a CCP installed as a CSCP:

Do these steps to install the FDD [5]:

 - Remove the FDD cover plate from the CCP [6].
 - Install the FDD cover plate on the FDD slot on the CCP [6] you removed.
 - Install the FDD [5] into the CCP [6].
 - Tighten the captive fasteners [4] that hold the FDD [5] to the CCP [6].
- While you hold the CCP [6] in its position, install the screws [9] and washers [10] that attach the CCP [6] to the rear shroud.
- Install the MMC [8] into the CCP [6].
 - Tighten the captive fasteners [7] that hold the MMC [8] to the CCP [6].
- Connect the electrical connectors to the CCP [6].
- Tighten the screws [2] on the electrical connector [3].

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SUBTASK 23-39-16-860-040

(4) Install the CCP [6]:



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CCP. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CCP.

- (a) Remove the protective covers from the electrical connectors.
- (b) Examine the electrical connectors for bent or broken pins, dirt, and damage.
- (c) For a CCP installed as a CSCP:
- (d) While you hold the CCP [6] in its position, install the screws [9] that attach the CCP [6] to the rear shroud.
- (e) Connect the electrical connectors to the CCP [6].
- (f) Tighten the screws [2] on the electrical connector [3].

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SUBTASK 23-39-16-420-013

(5) Install the front shroud [1]:

- (a) Put the front shroud [1] in position in front of the CCP [6].
- (b) Engage the auto-lock pins on the front shroud [1] with the CCP [6].
- (c) Adjust the auto-lock pins with a 1.5 mm allen wrench if it is necessary.

NOTE: Turn the wrench clockwise to loosen the shroud, and counterclockwise to tighten the shroud.

SUBTASK 23-39-16-860-037

(6) For a CCP installed as a CSCP:

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>
A	16	C23400	CAB SYS MGMT UNIT

SUBTASK 23-39-16-860-038

(7) For a CCP installed as a CACP:

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>
D	9	C23444	AREA CONTROL PANELS

SUBTASK 23-39-16-860-039

(8) For a CACP installed as a CSCP:

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>
D	9	C23444	AREA CONTROL PANELS

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C. Installation Test

SUBTASK 23-39-16-740-004

(1) Use the Cabin System Control Panel (CSCP) to do the installation test:

(a) Touch these selections on the CSCP:

- 1) CABIN MAINTENANCE
- 2) CABIN TESTS
- 3) START ALL TEST
- 4) CONTINUE TEST

(b) Make sure that there is no failure for the CCP.

NOTE: Approximately 2 minutes are necessary to complete the ALL TEST. If there is no failure, the CSCP will show NO FAULTs or the CONTROLLERS selection on the ALL TEST FAULTS REVIEW menu will be gray.

NOTE: Wait 3 minutes after the test is complete before you do any other maintenance action. Most of the line replaceable units (LRUs) in the Cabin Services System (CSS) and Mood Lighting System (MLS) will go through rebooting or re-initializing process, which takes approximately 3 minutes to complete.

————— **END OF TASK** —————

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SERVICE INTERPHONE SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure gives an operational test of the service interphone system.

TASK 23-41-00-700-801

2. Service Interphone System - Operational Test

A. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Location Zones

Zone	Area
111	Radome
115	Area Outboard and Above Nose Landing Gear Wheel Well, Left
117	Main Equipment Center, Left
121	Forward Cargo Compartment, Left
123	Area Below Forward Cargo Compartment, Left
131	Area Above Wing Center Section, Left
151	Aft Cargo Compartment, Left
161	Bulk Cargo Compartment, Left
211	Flight Compartment, Left
311	Area Aft of Bulkhead, Left
313	Stabilizer Torsion Box Compartment, Left
315	APU Compartment, Left

C. Prepare for the Test

SUBTASK 23-41-00-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-41-00-860-002

- (2) Make sure the oxygen masks are in their stowage boxes at each flight crew station and the doors are closed.

SUBTASK 23-41-00-860-003

- (3) If the oxygen mask is not in its stowage box, do these steps:
- (a) Put the oxygen mask in its stowage box.
 - (b) Close the stowage box door.
 - (c) Push the RESET button on the stowage box for the oxygen mask.

D. Communication Test Between Ground Service Stations

SUBTASK 23-41-00-710-001

 WARNING	DO NOT WEAR HEADSET OR TOUCH ANY UMBILICAL CONNECTIONS TO THE AIRPLANE DURING ATMOSPHERIC ELECTRICAL DISTURBANCES. A LIGHTNING STRIKE CAN CAUSE SEVERE INJURY TO PERSONS.

- (1) Do the communication test between the ground service stations:
- (a) Set the SERV INTPH switch to the ON position on the P5 Overhead panel.

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- (b) Connect the boom microphone/headset to the SERVICE INPH jack (D23012) on the Nose Gear Electrical Service Panel (P40) at the nose wheel well.
- (c) Connect the boom microphone/headset to each of these service interphone jacks:
 - 1) D23006 Fuel Control Panel (P28 Panel)
 - 2) D23007 Forward Cargo Handling (P35 Panel)
 - 3) D23009 Wheel Well Service (P56 Panel)
 - 4) D23010 Main E/E Equipment Rack (E3)
 - 5) D23011 Adjacent to Weather Radar
 - 6) D23008 Refuel Nozzle (Right Wing)
 - 7) D23003 Inside Left Engine Nacelle
 - 8) D23003 Inside Right Engine Nacelle
 - 9) D23013 Aft Cargo Handling
 - 10) D32015 APU Compartment
 - 11) D23016 Bulk Cargo Area Access
 - 12) D23017 Forward Tail Cone
 - 13) D23018 Mid Tail Cone
 - 14) D23030 Cabin Equipment Center (CEC)
- (d) Make voice communication between those stations.
- (e) Make sure you hear the voice clearly from the boom microphone/headsets.

E. Flight Crew and Ground Crew Communication Test

SUBTASK 23-41-00-710-002

- (1) Do these steps for the captain's, first officer's, and first observer's positions:
 - (a) Set the SERV INTPH switch to the ON position.
 - (b) Connect a boom microphone/headset to the BOOM/MIC HEADSET jack on the applicable jack panel in the flight compartment.
 - (c) Push the FLT on-off volume control (LED comes on) on the applicable audio control panel (ACP) on the P8 panel.
 - (d) Turn the FLT on-off/volume control switch to the middle position.
 - (e) Push the (MIC/INT) PTT switch on the ACP to the INT position.
 - (f) Speak into the boom microphone.
 - (g) Make sure the voice is heard clearly from the ground crew headset in the nose wheel well area.
 - (h) Release the (MIC/INT) PTT switch on the ACP.
 - (i) Have the ground crew speak into the boom microphone.
 - (j) Make sure you hear the voice clearly from the headset in the flight compartment.
 - (k) Set the SERV INTPH switch on the P5 panel to the OFF position in the flight compartment.
 - (l) Push and hold the (MIC/INT) PTT switch on the ACP to the INT position.
 - (m) Speak into the boom microphone.
 - (n) Make sure the ground crew cannot hear your voice from the headset.

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- (o) Release the MIC/INT PTT switch on the ACP.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-41-00-860-004

- (1) Put the boom microphone/headset back to its usual condition:
 - (a) Disconnect the boom mic/headset from the applicable jack panel in the flight compartment.
 - (b) Disconnect the boom microphone/headset from the service interphone jack on the ground.

———— **END OF TASK** ————

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CABIN INTERPHONE SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) An operational test of the cabin interphone system
 - (2) A system test of the cabin interphone system.

TASK 23-42-00-710-801

2. Cabin Interphone System - Operational Test

A. General

- (1) This operational test gives a quick check of the Cabin Interphone System (CIS).
- (2) The Cabin System Control Panel (CSCP) is necessary to do this test.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Procedure

SUBTASK 23-42-00-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-42-00-740-001

- (2) Use the CSCP to do the CIS - Quick Test:
 - (a) Touch these selections on the CSCP:
 - 1) CABIN MAINTENANCE
 - 2) CABIN TESTS
 - 3) START QUICK TEST
 - 4) CONTINUE TEST.
 - (b) Make sure that the NO FAULTS shows on the CSCP, when the test is completed.
NOTE: Approximately 20 seconds are necessary to complete the quick test. If a failure occurs, the CSCP will show the Quick Test Fault Review menu.
 - (c) If the CSCP shows the Quick Test Fault Review menu, make sure there are no failures for the controllers.
NOTE: If there are no failures for the controllers, the line around the button becomes gray.
 - (d) If there are failures for the controllers, touch CONTROLLERS then CONTINUE to see the Quick Test Fault Results.
 - 1) Make sure that there are no failures for the Passenger Address/Cabin Interphone Controller (Cabin Interphone) or Zone Management Unit (Cabin Interphone).

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- (e) If there are failures for the cabin interphone, refer to the applicable Maintenance Message Index in the Fault Isolation Manual (FIM).

———— **END OF TASK** ————

TASK 23-42-00-730-801

3. Cabin Interphone System - System Test

A. General

- (1) The system test for the Cabin Interphone System (CIS) includes:
- (a) CIS - BITE Test
 - (b) Call Light Test
 - (c) Cabin Interphone Alternate System Test
 - (d) Cabin Alert Call Test
 - (e) Cabin Ready Call Test
 - (f) Priority Call/Boom Microphone Test

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1614	Headset - Microphone Part #: 511-50699 Supplier: 0DH85 Part #: H3310 Supplier: 71483 Part #: H3312 Supplier: 71483 Opt Part #: 460A Supplier: 79687 Opt Part #: 511-20010-2 Supplier: 0DH85
COM-8986	Communication Cable - Ground Crew Part #: 4MS-TTCOMM-1 Supplier: 0BC31 Part #: 4MS-TTCOMM-6 Supplier: 0BC31 Part #: 511-20012 Supplier: 0DH85 Part #: C31-50 Supplier: 71483

D. Location Zones

Zone	Area
200	Upper Half of Fuselage
211	Flight Compartment, Left

E. Prepare for the Test

SUBTASK 23-42-00-860-002

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

F. CIS - Bite Test

SUBTASK 23-42-00-740-002

- (1) Use the Cabin System Control Panel (CSCP) to do the CIS - BITE Test:
- (a) Touch these selections on the CSCP:

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- 1) CABIN MAINTENANCE
 - 2) CABIN TESTS
 - 3) START ALL TEST
 - 4) CONTINUE TEST.
- (b) Make sure that the NO FAULTS shows on the CSCP, when the test is completed.
- NOTE: Approximately 2 minutes are necessary to complete the test. If a failure occurs, the CSCP will show the All Test Fault Review menu.
- NOTE: Wait 3 minutes after the test is complete before you do any other maintenance action. Most of the line replaceable units (LRUs) in the Cabin Services System (CSS) and Mood Lighting System (MLS) will go through rebooting or re-initializing process, which takes approximately 3 minutes to complete.
- (c) If the CSCP shows the All Test Fault Review menu, make sure there are no failures for the controllers or handsets.
- NOTE: If there are no failures for the controllers or handsets, the line around the buttons become gray.
- (d) If there are failures for the controllers, touch CONTROLLERS then CONTINUE to see the All Test Fault Results.
- 1) Make sure that there are no failures for the Passenger Address/Cabin Interphone Controller (Cabin Interphone) or Zone Management Unit (Cabin Interphone).
- (e) If there are failures for the cabin interphone or handsets, refer to the applicable Maintenance Message Index in the Fault Isolation Manual (FIM).

G. Call Light Test

SUBTASK 23-42-00-730-001

- (1) Do the call light test.
 - (a) Remove the handset at door 1 left from its cradle.
 - (b) Push the code for ALL CALL on the handset.

NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Make sure that CAB INT is shown on the main menu of the center Control Display Unit (CDU).
 - (d) Push the line select key (LSK) adjacent to CAB INT on the center CDU.
 - (e) Make sure that the Cabin Interphone main menu and ALL CALL are shown on the center CDU.
 - (f) Make sure that CABIN CALL is shown on the EICAS display in the flight compartment.
 - (g) Make sure that the CALL light, on the CAB mic selector button, on the captain's audio control panel comes on.
 - (h) Remove the flight deck handset from the aisle stand cradle.
 - (i) Make sure the CALL light on the CAB mic selector button goes off.
 - (j) Put the flight deck handset back in its cradle.
 - (k) Do these steps from each of the other attendant handsets:
 - 1) Make sure that the pink call light(s) comes on or flashes.
 - 2) Remove the attendant handset from its cradle.
 - 3) Make sure that the call light(s) goes off.

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- 4) Put the handset back in its cradle.
- (l) Put the handset at door 1 left back in its cradle.

H. Cabin Interphone Alternate System Test

SUBTASK 23-42-00-730-002

- (1) Do the cabin interphone alternate system test:
 - (a) Remove the handset at the main attendant station from the cradle.
 - (b) Push the code for another attendant station on the handset.
NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Make sure you hear a ringback tone on the handset.
 - (d) Push the CI NORM/ALT button on the attendant switch panel to the ALT position.
 - (e) Make sure you hear a dial tone on the handset.
 - (f) Push the code for another attendant station on the handset.
 - (g) Make sure you hear a ringback tone on the handset.
 - (h) Put the handset back in its cradle.
 - (i) Push the CI NORM/ALT button on the attendant switch panel to the NORM position.

I. Cabin Alert Call Test

SUBTASK 23-42-00-730-003

- (1) Do the cabin alert call test:
 - (a) Remove the handset at door 1 left from its cradle.
 - (b) Push the code for PILOT ALERT on the handset.
NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Make sure that PILOT ALERT is shown in the Cabin Interphone main menu on the center CDU.
 - (d) Make sure the CABIN ALERT message is shown on the EICAS display in the flight compartment.
 - (e) Put the handset back in its cradle.

J. Cabin Ready Call Test

SUBTASK 23-42-00-730-004

- (1) Do the cabin ready call test:
 - (a) Remove the handset at door 1 left from its cradle.
 - (b) Push the code for CABIN READY on the handset.
NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Make sure that CABIN READY is shown on the EICAS display in the flight compartment.
NOTE: CABIN READY will go off after 60 seconds.
 - (d) Put the handset back in its cradle.

K. Priority Call/Boom Microphone Test

SUBTASK 23-42-00-730-005

- (1) Do the priority call/boom microphone test:
 - (a) Connect the headset - microphone, COM-1614 using communication cable, COM-8986, to the captain's jack panel.

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- (b) Push the CAB mic selector button two times in one second, on the captain's audio control panel.
- (c) Make sure the pink call lights come on at door 1 left and fwd galley-center.
- (d) Remove the handset at door 1 left from its cradle.
- (e) Push and hold the MIC/INT PTT switch in the MIC position on the captain's audio control panel.
- (f) Speak into the captain's headset - microphone, COM-1614.
- (g) Make sure the voice can be heard clearly on the handset.
- (h) Speak into the handset.
- (i) Make sure the voice can be heard clearly on the headset.
- (j) Put the handset back in its cradle.
- (k) Release the MIC/INT PTT switch on the captain's audio control panel.
- (l) Push the CAB mic selector button on the captain's audio control panel.
- (m) Make sure the MIC light on the CAB mic selector button goes off.
- (n) Remove the headset - microphone, COM-1614 and communication cable, COM-8986 from the captain's jack panel.

————— **END OF TASK** —————

TASK 23-42-00-710-802

4. Cabin Interphone Alternate System Test

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Prepare for the Test

NOTE: This task is for scheduled maintenance.

SUBTASK 23-42-00-860-003

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

D. Procedure

SUBTASK 23-42-00-730-007

- (1) Do the cabin interphone alternate system test:
 - (a) Remove the handset at the main attendant station from the cradle.
 - (b) Push the dial code for another attendant station on the handset.

NOTE: The dial code directory is on the back of the attendant handset.
 - (c) Make sure you hear a ringback tone on the handset.
 - (d) Push the CI NORM/ALT button on the attendant switch panel to the ALT position.
 - (e) Make sure you hear a dial tone on the handset.
 - (f) Push the dial code for another attendant station on the handset.

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- (g) Make sure you hear a ringback tone on the handset.
- (h) Put the handset back in its cradle.
- (i) Push the CI NORM/ALT button on the attendant switch panel to the NORM position.

———— **END OF TASK** ————

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FLIGHT DECK HANDSET - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the flight deck handset
 - (2) An installation of the flight deck handset.
 - (3) A removal of the flight deck handset cord.
 - (4) An installation of the flight deck handset cord.
 - (5) A removal of the flight deck handset cradle.
 - (6) An installation of the flight deck handset cradle.
 - (7) A removal of the flight deck handset cradle magnet.
 - (8) An installation of the flight deck handset cradle magnet.
- B. The flight deck handset is in the flight compartment.
- C. Handset cradles contain a magnet used to open an off-hook switch in the handset while the handset is in the cradle.
- (1) An incorrect location of the cradle magnet will cause an off-hook condition while the handset is in the cradle.

TASK 23-42-02-000-801

2. Flight Deck Handset Removal

(Figure 401)

A. **Location Zones**

Zone	Area

211	Flight Compartment, Left

B. **Removal Procedure**

SUBTASK 23-42-02-020-001

- (1) Remove the handset [1]:
 - (a) Remove the handset [1] from the cradle.
 - (b) Disconnect the handset [1] from the cord [2].

————— **END OF TASK** —————

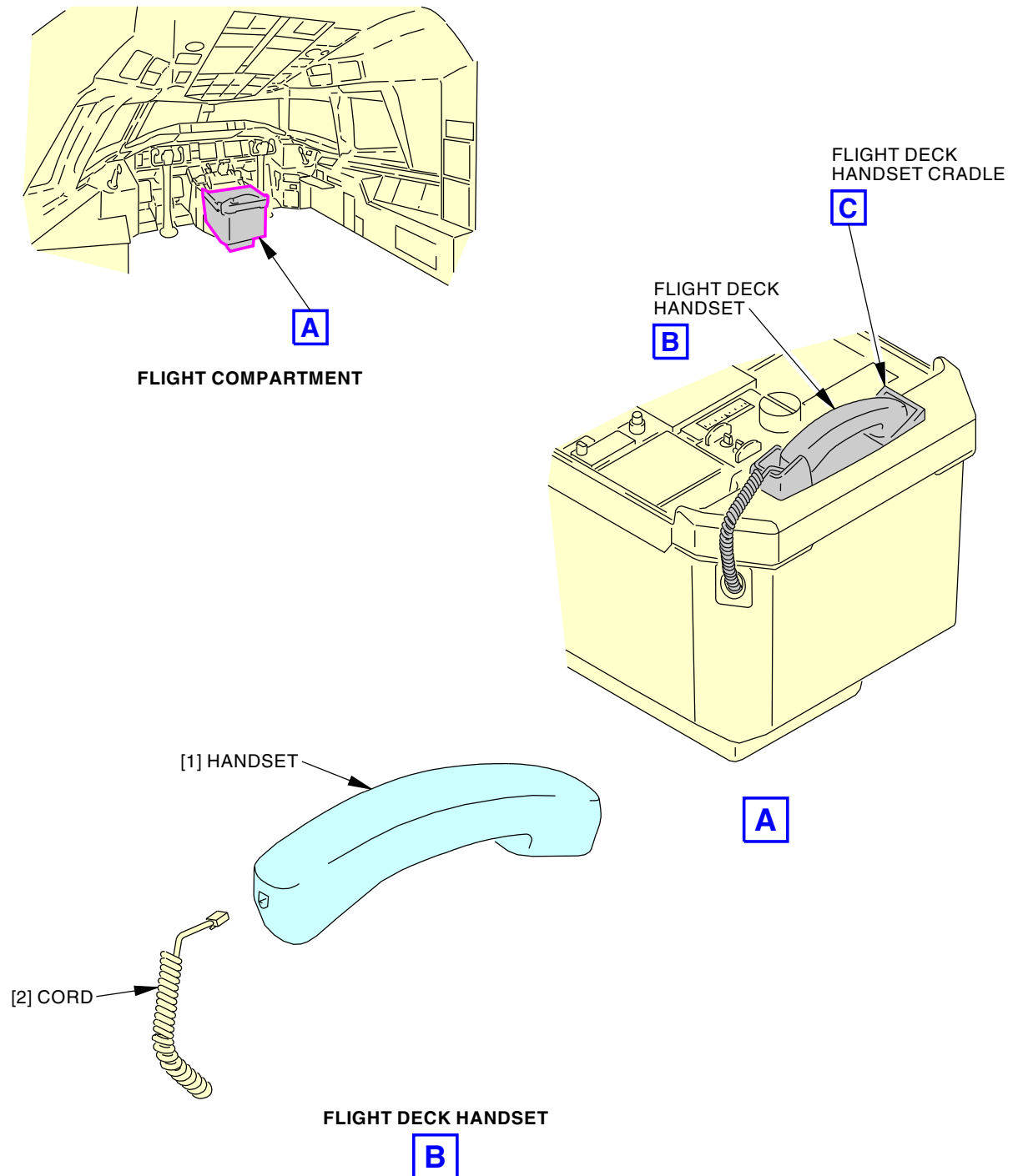
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C47065 S0006407418_V3

Flight Deck Handset/Cradle Installation
Figure 401/23-42-02-990-802 (Sheet 1 of 3)

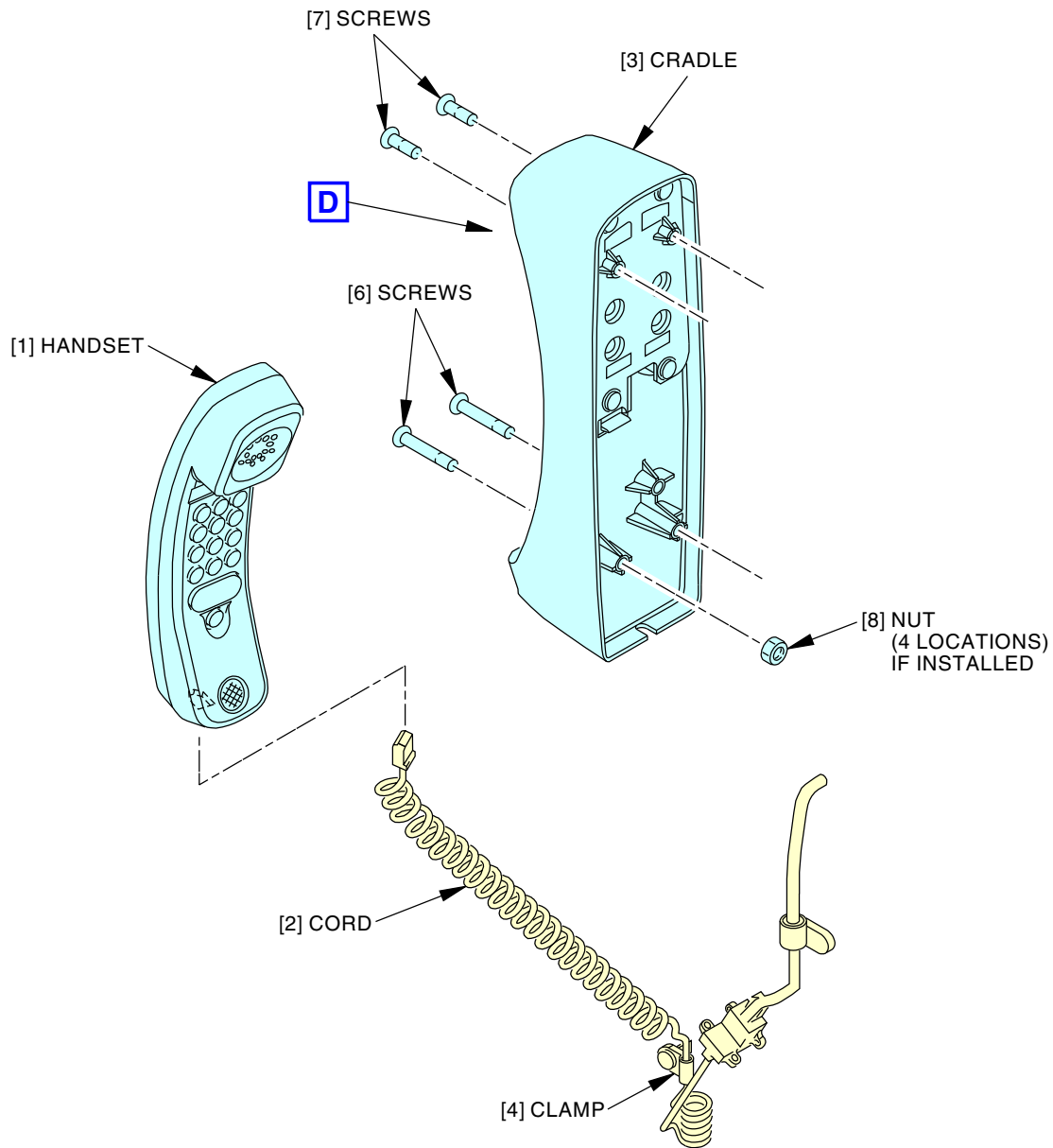
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FLIGHT DECK HANDSET CRADLE

C

385466 S0000138188_V2

**Flight Deck Handset/Cradle Installation
Figure 401/23-42-02-990-802 (Sheet 2 of 3)**

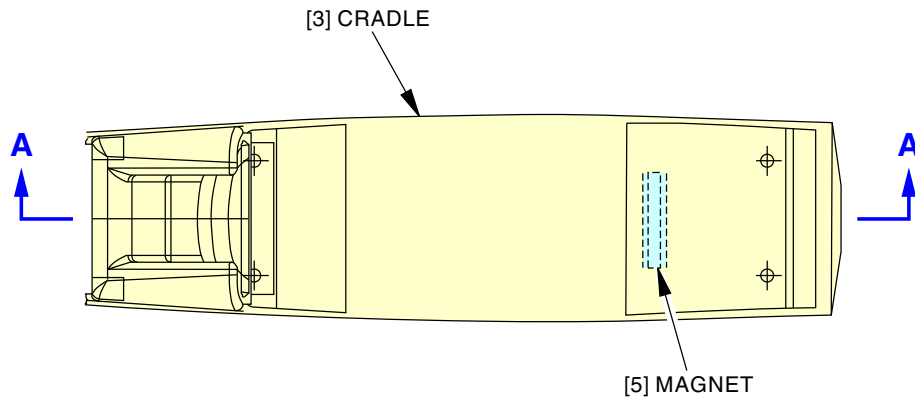
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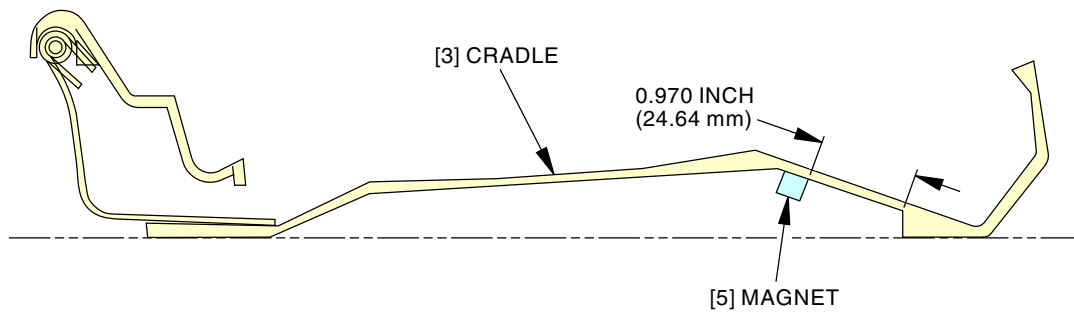
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MAGNET INSTALLATION

D



385517 S0000138189_V3

Flight Deck Handset/Cradle Installation
Figure 401/23-42-02-990-802 (Sheet 3 of 3)

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TASK 23-42-02-400-801

3. Flight Deck Handset Installation

(Figure 401)

A. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Handset	23-42-02-02-100	ARO ALL
		31-11-36-01A-070	ARO 001-013

C. Location Zones

Zone	Area
211	Flight Compartment, Left

D. Installation Procedure

SUBTASK 23-42-02-420-001

- (1) Install the handset [1]:
 - (a) Connect the cord [2] to the handset [1].
 - (b) Put the handset [1] on its cradle.

E. Installation Test

SUBTASK 23-42-02-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-42-02-710-001

- (2) Do a test of the handset [1]:
 - (a) Remove the flight deck handset [1] from its cradle.
 - 1) Make sure you can hear a dial tone.
 - (b) Push the dial code for PA ALL.

NOTE: The dial code directory is on the back of the handset [1].
 - (c) Push and hold the PTT button on the handset [1].
 - (d) Speak into the handset microphone.
 - 1) Make sure you hear your voice clearly from the cabin speakers.
 - (e) Put the handset [1] back in its cradle.

————— END OF TASK —————

TASK 23-42-02-000-802

4. Flight Deck Handset Cord Removal

(Figure 401)

A. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

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B. Removal Procedure

SUBTASK 23-42-02-020-004

- (1) Do these steps to remove the cord [2] for the handset in the flight deck:
 - (a) Gain access to the clamp [4].
 - (b) Loosen the clamp [4].
 - (c) Pull the handset cord [2] out of the clamp [4].

————— END OF TASK —————

TASK 23-42-02-400-802

5. Flight Deck Handset Cord Installation

(Figure 401)

A. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

B. Installation Procedure

SUBTASK 23-42-02-420-004

- (1) Do these steps to install the cord [2] for the handset in the flight deck:
 - (a) Put the handset cord [2] through the clamp [4].
 - (b) Tighten the clamp [4].
 - (c) Connect the handset cord [2] to the handset [1].

————— END OF TASK —————

TASK 23-42-02-000-803

6. Flight Deck Handset Cradle Removal

(Figure 401)

A. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

B. Removal Procedure

SUBTASK 23-42-02-020-002

- (1) Do these steps to remove the cradle [3]:
 - (a) Remove the nuts [8], if applicable.
 - (b) Remove the screws [6] and screws [7] from the handset cradle [3].
 - (c) Remove the handset cradle [3] from its mounting area.

————— END OF TASK —————

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TASK 23-42-02-400-803

7. Flight Deck Handset Cradle Installation

(Figure 401)

A. Location Zones

Zone	Area

211	Flight Compartment, Left

212	Flight Compartment, Right

B. Installation Procedure

SUBTASK 23-42-02-220-001

(1) Make sure that the handset cradle magnet [5] is in the correct location.

- (a) If the magnet [5] is missing or mis-aligned, do the applicable tasks: Flight Deck Handset Cradle Magnet Removal, TASK 23-42-02-000-804 or Flight Deck Handset Cradle Magnet Installation, TASK 23-42-02-400-804.

SUBTASK 23-42-02-420-002

(2) Do these steps to install the cradle [3]:

- (a) Put the handset cradle [3] on its mounting area.
- (b) Install the screws [6] and screws [7] that attach the handset cradle [3] to its mounting area.
- (c) Install the nuts [8] if applicable.

————— END OF TASK —————

TASK 23-42-02-000-804

8. Flight Deck Handset Cradle Magnet Removal

(Figure 401)

A. General

- (1) This task removes the magnet from the flight deck handset cradle.
- (2) Do this task if the magnet is not in the correct position.

B. Location Zones

Zone	Area

211	Flight Compartment, Left

212	Flight Compartment, Right

C. Removal Procedure

SUBTASK 23-42-02-010-001

(1) Do this task: Flight Deck Handset Cradle Removal, TASK 23-42-02-000-803.

SUBTASK 23-42-02-020-003

(2) Carefully remove the magnet [5] from the cradle [3].

NOTE: The magnet [5] is attached to the cradle [3] with adhesive.

————— END OF TASK —————

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TASK 23-42-02-400-804

9. Flight Deck Handset Cradle Magnet Installation

(Figure 401)

A. General

- (1) This task installs the magnet in the handset cradle.
- (2) Do this task if the magnet is missing or if the magnet is not in the correct position.

B. References

Reference	Title
20-30-91-910-801	Final Cleaning of Composites Prior to Non-structural Bonding (Series 91) (P/B 201)

C. Consumable Materials

Reference	Description	Specification
A50055	Adhesive - Two-Part, RT Cure, Urethane	BAC5010 Type 89 (BMS5-105)
B01011	Solvent - Final Cleaning Of Composites Prior To Non-Structural Bonding - Series 91	

D. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

E. Installation Procedure

SUBTASK 23-42-02-420-003

- (1) Do these steps to install the magnet [5]:
 - (a) Use Series 91 solvent, B01011 to clean the mating surfaces of the magnet [5] and the cradle [3] (TASK 20-30-91-910-801).
 - (b) Put urethane adhesive, A50055 on the mating surfaces of the magnet [5] and the cradle [3].
 - (c) Put the magnet [5] on the cradle [3].
NOTE: Make sure that you put the magnet [5] in the correct location.
 - (d) Apply more adhesive around the edges of the magnet [5].
 - (e) Let the adhesive dry.

F. Installation test

SUBTASK 23-42-02-710-002

- (1) Make sure that the magnet [5] opens the off-hook switch in the handset [1] while the handset is in the cradle [3].

————— END OF TASK —————

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CABIN ATTENDANT HANDSET - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) The removal of a cabin attendant handset
 - (2) The removal of a handset cord
 - (3) The removal of a handset cradle
 - (4) The removal of a handset cradle magnet
 - (5) The installation of a handset cradle magnet
 - (6) The installation of a handset cradle
 - (7) The installation of a handset cord
 - (8) The installation of a cabin attendant handset.
- B. A CAH is installed at each cabin attendant station. These removal and installation tasks are the same for all CAHs.
- C. Handset cradles contain a magnet used to open an off-hook switch in the handset while the handset is in the cradle.
- (1) An incorrect location of the cradle magnet will cause an off-hook condition while the handset is in the cradle.

TASK 23-42-03-000-801

2. Cabin Attendant Handset Removal

(Figure 401 or Figure 402)

A. **Location Zones**

Zone	Area
200	Upper Half of Fuselage

B. **Removal Procedure**

SUBTASK 23-42-03-020-001

- (1) Do these steps to remove the cabin attendant handset [1] in the passenger cabin:
 - (a) Remove the handset [1] from the handset cradle [2].
 - (b) Disconnect the cord [5] from the handset [1].

———— **END OF TASK** ————

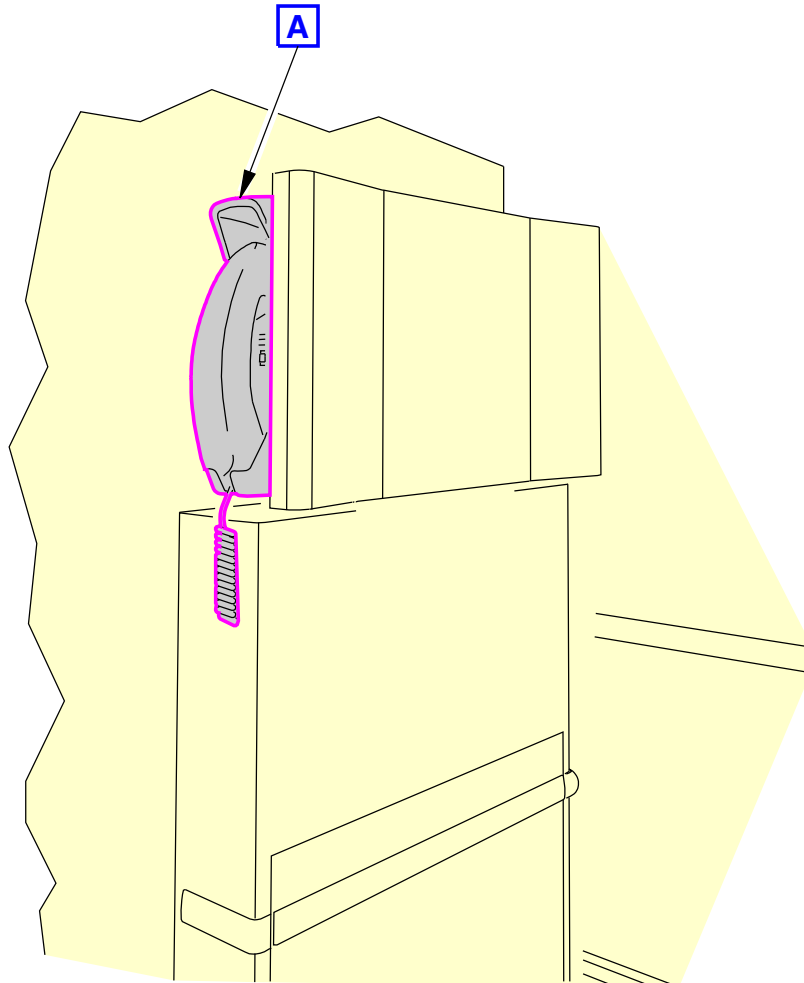
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ATTENDANT STATION

C46725 S0006407423_V2

Cabin Attendant Handset/Cradle Installation
Figure 401/23-42-03-990-802 (Sheet 1 of 4)

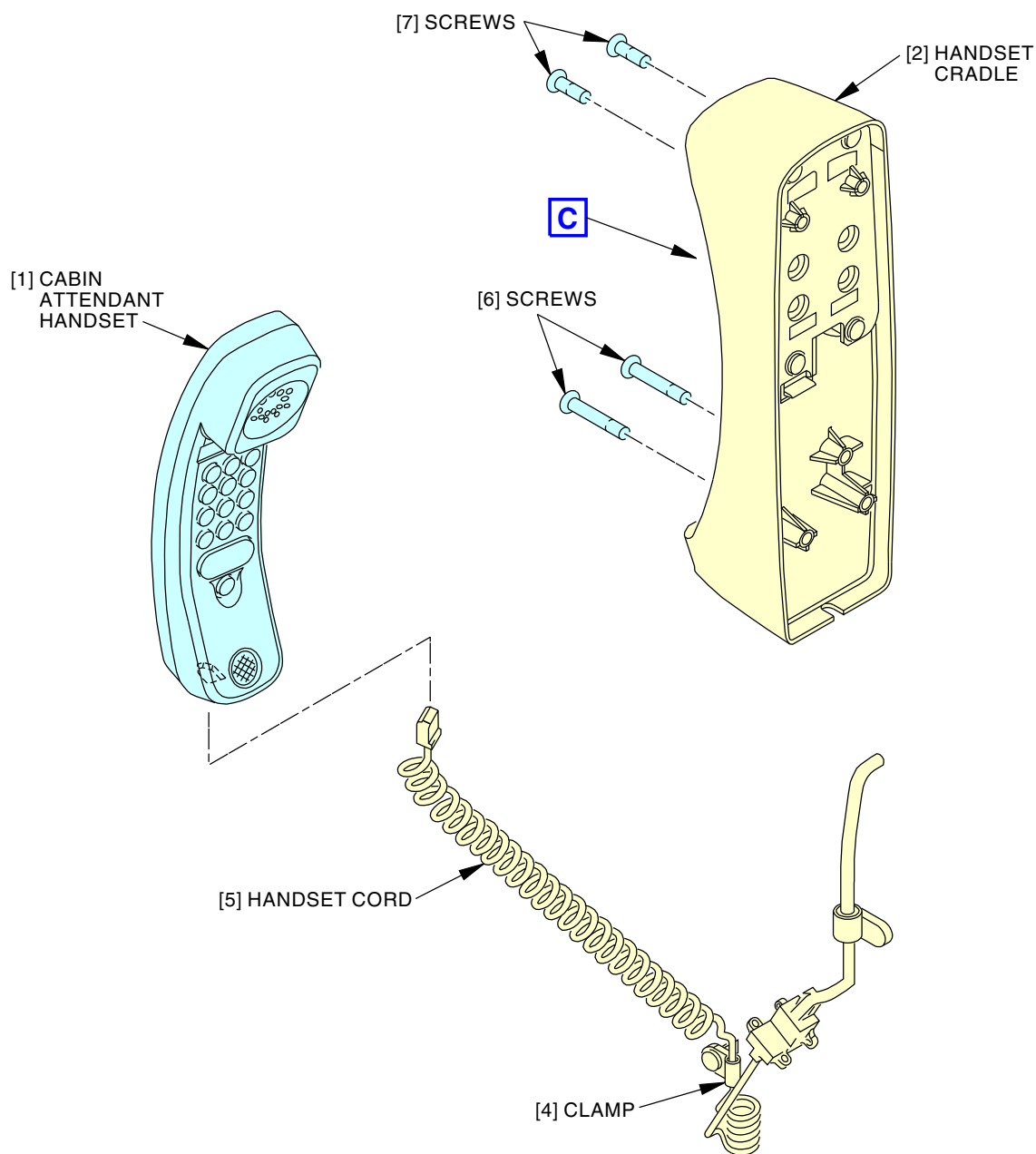
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**ATTENDANT HANDSET CRADLE
WITHOUT PA SWITCH**

A

F03687 S0006407424_V3

**Cabin Attendant Handset/Cradle Installation
Figure 401/23-42-03-990-802 (Sheet 2 of 4)**

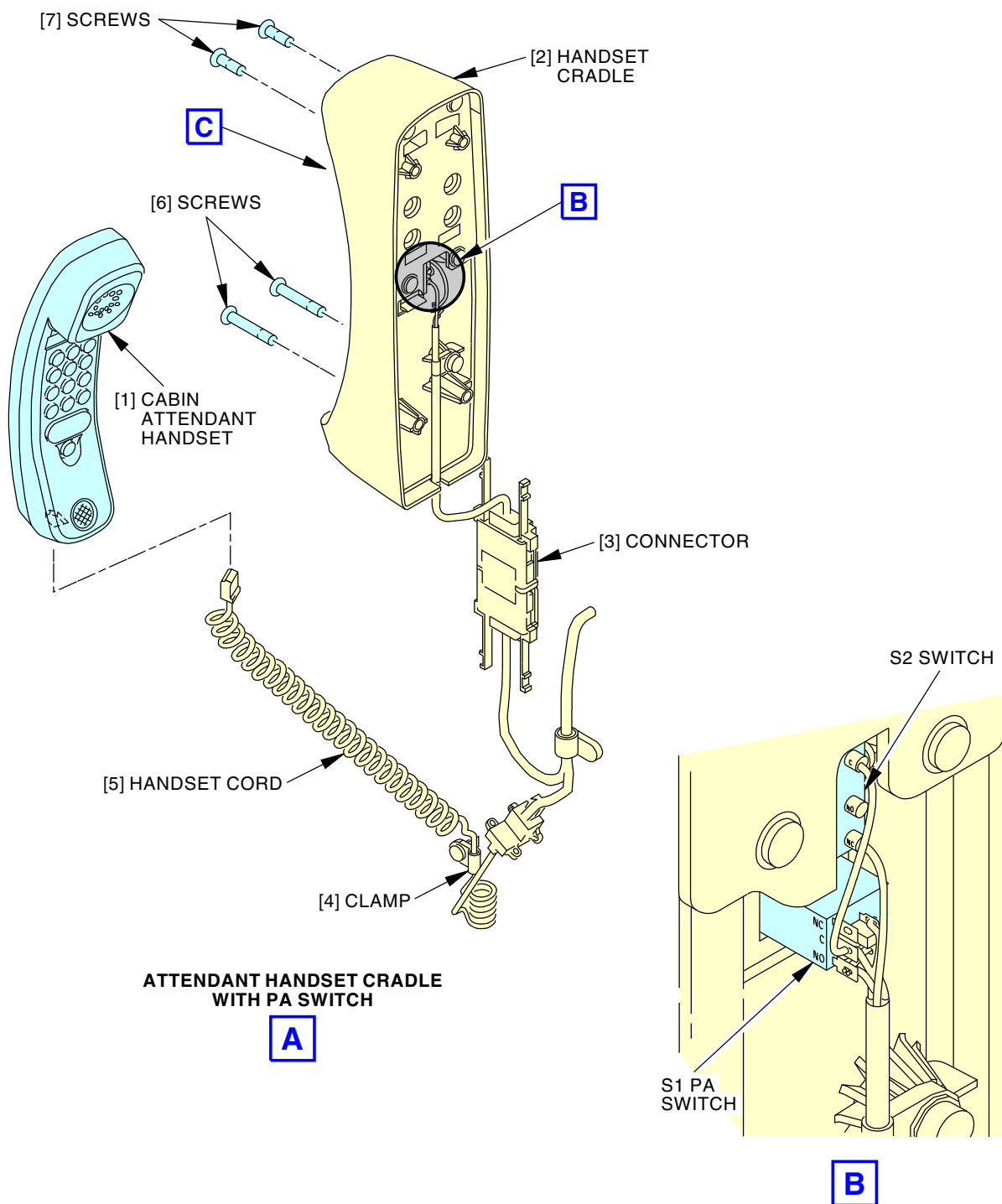
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F03689 S0006407425_V3

**Cabin Attendant Handset/Cradle Installation
Figure 401/23-42-03-990-802 (Sheet 3 of 4)**

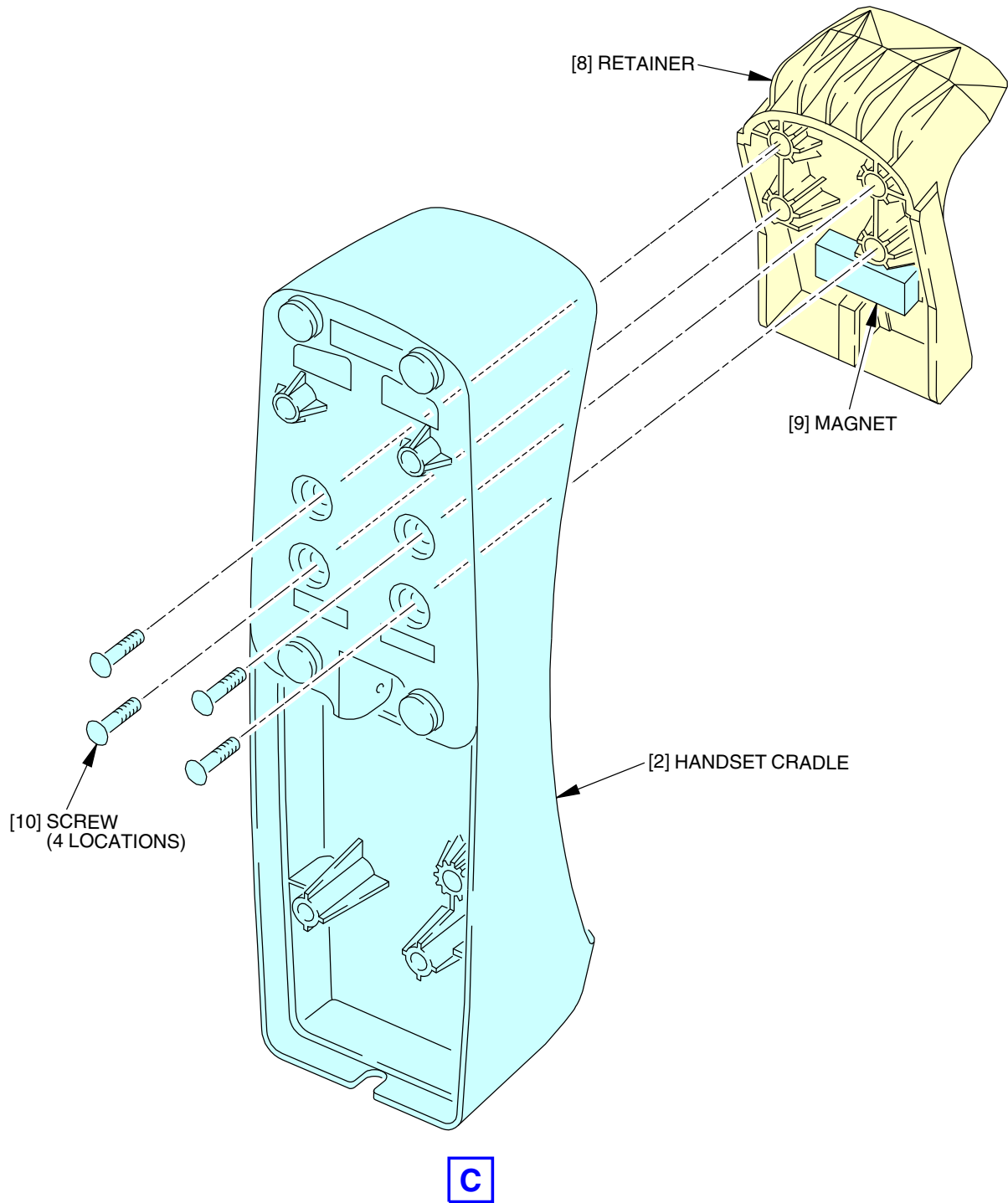
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1796842 S0000318793_V2

Cabin Attendant Handset/Cradle Installation
Figure 401/23-42-03-990-802 (Sheet 4 of 4)

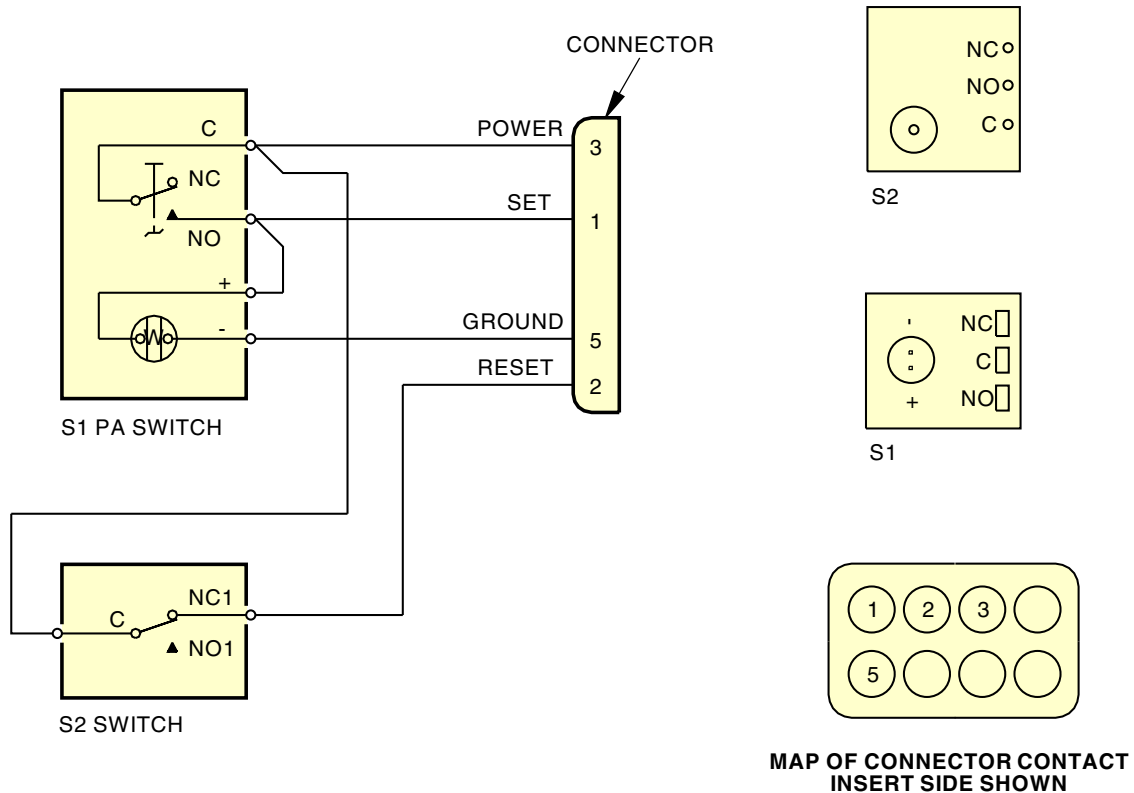
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F03691 S0006407426_V2

**Handset Cradle and PA Switch Wires Connector
Figure 402/23-42-03-990-803**

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TASK 23-42-03-000-802

3. Cabin Attendant Handset Cord Removal

(Figure 401 or Figure 402)

A. Location Zones

Zone	Area
200	Upper Half of Fuselage

B. Removal Procedure

SUBTASK 23-42-03-020-002

(1) Do these steps to remove the handset cord [5] for the cabin attendant handset in the passenger cabin:

(a) Remove the attendant seat pad to get access to the clamp [4].

(b) Loosen the clamp [4].

(c) Pull the handset cord [5] out of the clamp [4].

————— **END OF TASK** —————

TASK 23-42-03-400-802

4. Cabin Attendant Handset Cradle Removal

(Figure 401 or Figure 402)

A. Location Zones

Zone	Area
200	Upper Half of Fuselage

B. Removal Procedure

SUBTASK 23-42-03-710-003

(1) For a handset cradle [2] without a PA switch, do these steps to remove the cradle [2]:

(a) Remove the screws [6] and screws [7] from the handset cradle [2].

(b) Remove the handset cradle [2] from its mounting area.

SUBTASK 23-42-03-710-004

(2) For a handset cradle [2] with a PA switch, do these steps to remove the cradle [2]:

(a) Remove the screws [6] and screws [7] from the handset cradle [2].

(b) Pull the handset cradle [2] out to get access to the connector [3].

(c) Disconnect the PA switch connector [3].

(d) Remove the handset cradle [2].

————— **END OF TASK** —————

TASK 23-42-03-000-803

5. Cabin Attendant Handset Cradle Magnet Removal

(Figure 401 or Figure 402)

A. General

(1) This task removes the magnet from the attendant handset cradle.

(2) Do this task if the magnet is not in the correct position.

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B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Removal Procedure

SUBTASK 23-42-03-020-006

(1) Do this task: Cabin Attendant Handset Removal, TASK 23-42-03-000-801

SUBTASK 23-42-03-020-007

(2) Do the steps that follow to remove the magnet [9] from the handset cradle [2].

- (a) Remove the screws [10].
- (b) Remove the retainer [8] from the handset cradle [2].
- (c) Remove the magnet [9] from the retainer [8].

NOTE: The magnet [9] is attached to the retainer [8] with adhesive.

————— **END OF TASK** —————

TASK 23-42-03-400-805

6. Cabin Attendant Handset Cradle Magnet Installation

(Figure 401 or Figure 402)

A. General

- (1) This task installs the magnet in the handset cradle.
- (2) Do this task if the magnet is missing or if the magnet is not in the correct position.

B. References

Reference	Title
20-30-91-910-801	Final Cleaning of Composites Prior to Non-structural Bonding (Series 91) (P/B 201)

C. Consumable Materials

Reference	Description	Specification
A50055	Adhesive - Two-Part, RT Cure, Urethane	BAC5010 Type 89 (BMS5-105)
B01011	Solvent - Final Cleaning Of Composites Prior To Non-Structural Bonding - Series 91	

D. Location Zones

Zone	Area
200	Upper Half of Fuselage

E. Installation Procedure

SUBTASK 23-42-03-420-001

(1) Do these steps to install the magnet [9] :

- (a) Do the steps that follow to install the magnet [9] on the retainer [8]:
 - 1) Use Series 91 solvent, B01011 to clean the mating surfaces of the magnet [9] and the retainer [8] (Final Cleaning of Composites Prior to Non-structural Bonding (Series 91), TASK 20-30-91-910-801.
 - 2) Put urethane adhesive, A50055 on the mating surfaces of the magnet [9] and the retainer [8].

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- 3) Put the magnet [9] on the retainer [8].
NOTE: Make sure that you put the magnet [9] in the correct location.
- 4) Apply more adhesive around the edges of the magnet [9].
- 5) Let the adhesive dry.
- (b) Put the retainer [8] in its correct position in the handset cradle [2].
- (c) Install the screws [10].

————— **END OF TASK** —————

TASK 23-42-03-400-803

7. Cabin Attendant Handset Cradle Installation

(Figure 401 or Figure 402)

A. Location Zones

Zone	Area
200	Upper Half of Fuselage

B. Installation Procedure

SUBTASK 23-42-03-710-005

- (1) For a handset cradle [2] without a PA switch, do these steps to install the cradle [2]:
 - (a) Put the handset cradle [2] on its mounting area.
 - (b) Install the screws [6] and screws [7] that attach the handset cradle [2] to its mounting area.

SUBTASK 23-42-03-710-006

- (2) For a handset cradle [2] with a PA switch, do these steps to install the cradle [2]:
 - (a) Connect the PA switch connector [3].
 - (b) Put the handset cradle [2] on its mounting area.
 - (c) Install the screws [6] and [7] that attach the handset cradle [2] to its mounting area.

————— **END OF TASK** —————

TASK 23-42-03-400-804

8. Cabin Attendant Handset Cord Installation

(Figure 401 or Figure 402)

A. Location Zones

Zone	Area
200	Upper Half of Fuselage

B. Installation Procedure

SUBTASK 23-42-03-710-007

- (1) Do these steps to install the handset cord [5] for the cabin attendant handset in the passenger cabin:
 - (a) Put the handset cord [5] through the clamp [4].
 - (b) Tighten the clamp [4].
 - (c) Connect the handset cord [5] to the handset [1].
 - (d) Install the attendant seat pad.

————— **END OF TASK** —————

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TASK 23-42-03-400-801

9. **Cabin Attendant Handset Installation**

(Figure 401 or Figure 402)

A. **References**

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Handset	23-42-61-05B-030	ARO ALL

C. **Location Zones**

Zone	Area
200	Upper Half of Fuselage

D. **Installation Procedure**

SUBTASK 23-42-03-710-001

(1) Do these steps to install the cabin attendant handset [1] in the passenger cabin:

(a) Install the correct placard on the back of the handset [1].

NOTE: The placard shows the dial code directory.

(b) Connect the handset [1] to the handset cord [5].

(c) Put the handset [1] on its cradle [2].

E. **Installation Test**

SUBTASK 23-42-03-860-001

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-42-03-710-002

(2) Do a test on the handset [1]:

(a) Remove the handset [1] from its cradle [2].

1) Make sure that you hear a dial tone on the handset [1].

(b) Push the code for PA ALL on the handset [1].

NOTE: The dial code directory is on the back of the attendant handset [1].

(c) Push and hold the PTT button on the handset [1].

(d) Speak into the handset microphone.

1) Make sure that you hear your voice clearly from the speakers.

(e) Put the handset [1] back on its cradle [2].

————— **END OF TASK** —————

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GROUND CREW CALL SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure is an operational test of the ground crew call system.

TASK 23-43-00-700-801

2. Ground Crew Call System - Operational Test

A. **General**

- (1) This test makes sure that the ground crew can call the flight crew and the flight crew can call the ground crew.
- (2) To call the flight deck from the ground station, the ground crew pushes the flight deck call button on the nose gear (P40 Panel). When you push the button, these indications will occur:
 - (a) A GROUND CALL message will show on the EICAS display
 - (b) You will hear a flight deck chime
 - (c) The FLT call lights on all audio control panels (ACPs) will come on.
- (3) To call the ground station from the flight deck, the flight crew uses the flight deck handset or the Cabin Interphone Menu on the center Control Display Unit (CDU) to make a call through the cabin interphone dial code. This will cause the ground crew call horn to sound in the nose wheel well for three seconds.

B. **References**

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

C. **Location Zones**

Zone	Area
115	Area Outboard and Above Nose Landing Gear Wheel Well, Left
211	Flight Compartment, Left

D. **Prepare for the Test**

SUBTASK 23-43-00-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

E. **Procedure**

SUBTASK 23-43-00-710-001

- (1) Do a call test from the ground crew to the flight crew:
 - (a) Push the FLT DECK CALL button on the P40 panel on the nose gear strut.
 - (b) Make sure the GROUND CALL message shows on the EICAS display.
 - (c) Make sure the CALL light on the FLT microphone selector switch comes on, on all the ACPs.
 - (d) Push the FLT microphone selector switch on the captain's ACP.
 - (e) Make sure the CALL light goes off on all the ACPs.
 - (f) Make sure the GROUND CALL message does not show on the EICAS display.
 - (g) Push the FLT microphone selector switch on the captain's ACP.
 - (h) Make sure the MIC light is off on the captain's ACP.

SUBTASK 23-43-00-710-002

- (2) Do a call test from the flight crew to the ground crew:

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- (a) Remove the handset from its cradle on the aisle stand.
- (b) Push the code for GND CREW CALL on the flight deck handset.
NOTE: The dial code directory is on the back of the handset.
- (c) Make sure the call horn operates in the nose wheel well.
- (d) Put the handset back to its cradle.

———— **END OF TASK** ————

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GROUND CREW CALL HORN - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the ground crew call horn
 - (2) An installation of the ground crew call horn.

TASK 23-43-01-000-801

2. Ground Crew Call Horn Removal

(Figure 401)

A. **Location Zones**

Zone	Area
700	Landing Gear and Landing Gear Doors

B. **Removal Procedure**

SUBTASK 23-43-01-860-001

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

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	3	C23626	GND CREW HORN

SUBTASK 23-43-01-150-001

- (2) Remove the sealant around the ground crew horn assembly and mounting screw heads as necessary.

SUBTASK 23-43-01-020-001

- (3) Remove the ground crew call horn [1]:
- (a) Remove the three mounting screws [3], and washers [2] from the horn [1].
 - (b) Pull the horn [1] out until you can get access to the horn terminals.
 - (c) Remove the two nuts [5] from the horn terminals.
 - (d) Disconnect the electrical connectors from the horn terminals.
 - (e) Remove the horn [1] from the bracket assembly.

———— **END OF TASK** ————

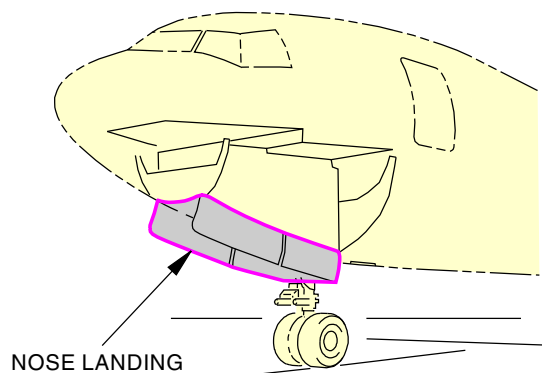
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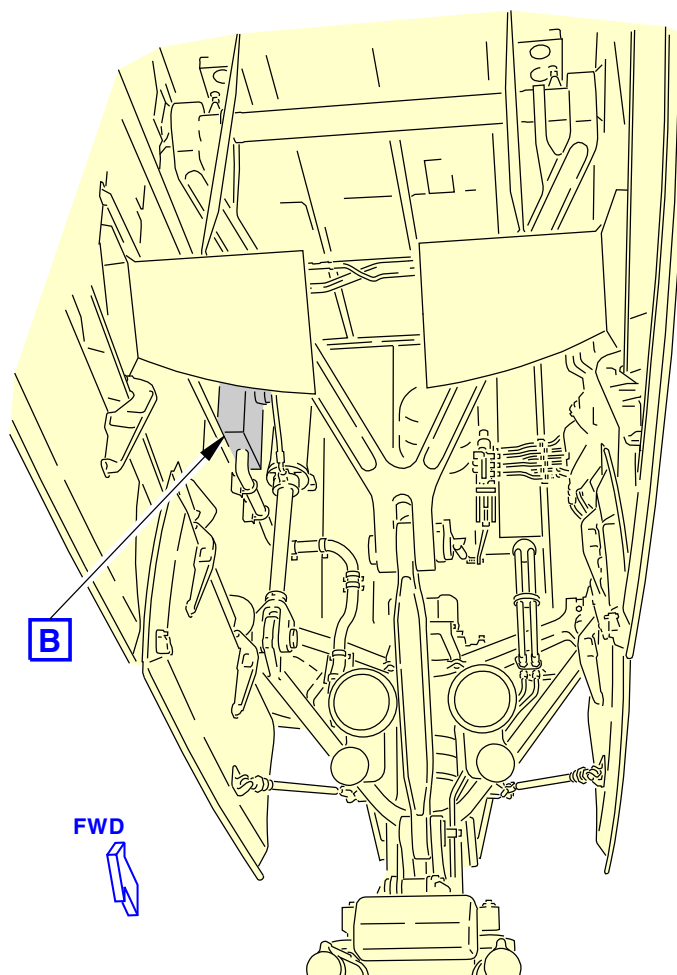
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NOSE LANDING
GEAR WHEEL WELL

A



B

FWD


NOSE LANDING GEAR WHEEL WELL

A

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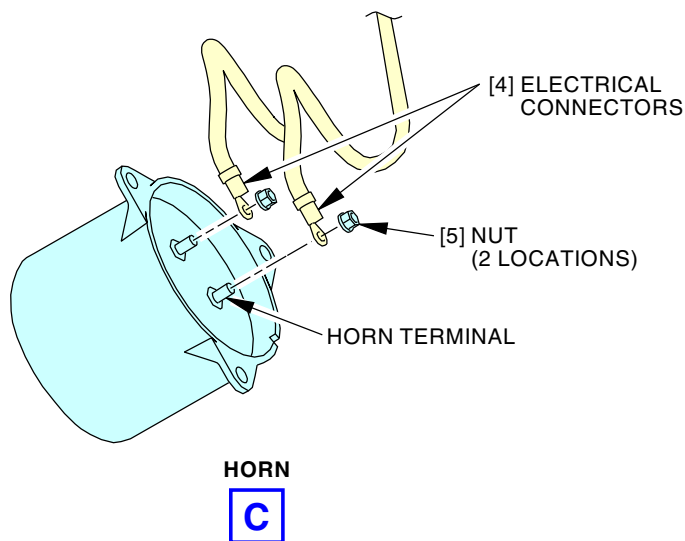
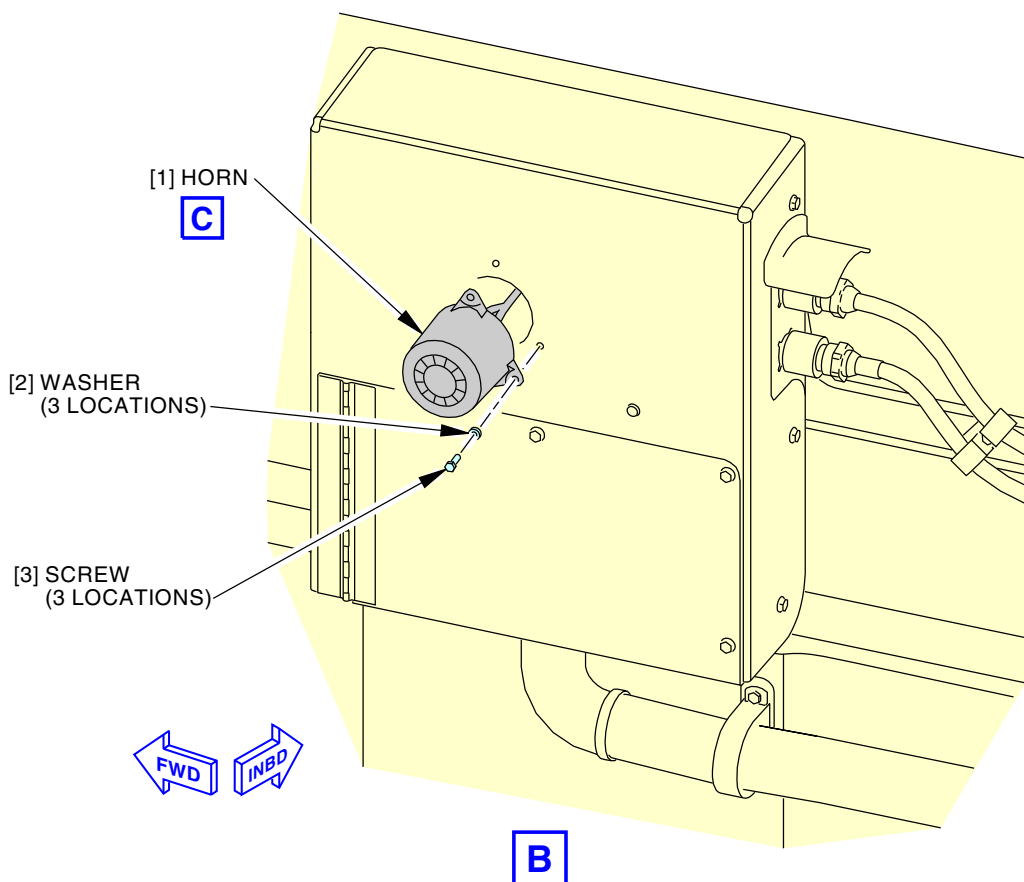
Ground Crew Call Horn Installation
Figure 401/23-43-01-990-802 (Sheet 1 of 2)

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**Ground Crew Call Horn Installation
Figure 401/23-43-01-990-802 (Sheet 2 of 2)**

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TASK 23-43-01-400-801

3. Ground Crew Call Horn Installation

(Figure 401)

A. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
51-31-01-160-801	Prepare For Sealing (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Horn	23-43-01-01-010	ARO ALL

D. Location Zones

Zone	Area
700	Landing Gear and Landing Gear Doors

E. Installation Procedure

SUBTASK 23-43-01-420-001

- (1) Install the ground crew call horn [1]:
 - (a) Connect the electrical connectors to the horn terminals.
 - (b) Install the two nuts [5] to tighten the electrical connectors to the horn terminals.
 - (c) Put the horn [1] into the bracket assembly.
 - (d) Align the horn mounting holes with the holes in the bracket assembly.
 - (e) Install the three washers [2], and screws [3] which connect the horn [1] to the bracket assembly.

SUBTASK 23-43-01-390-001

- (2) Apply sealant, A02315, around the ground crew horn assembly and mounting screw heads (TASK 51-31-01-160-801).

SUBTASK 23-43-01-860-002

- (3) Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

Row	Col	Number	Name
J	3	C23626	GND CREW HORN

SUBTASK 23-43-01-860-003

- (4) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-43-01-710-001

- (5) DO a test of the ground crew call horn [1]:

NOTE: Two persons are necessary to do this test. One in the flight compartment and one on the ground.

- (a) Remove the flight deck handset from its cradle on the aisle stand in the flight compartment.

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- (b) Push the GRN CALL buttons on the flight deck handset.

NOTE: See the directory on the back of the handset for the dial code of ground crew call.

- (c) Make sure the horn [1] operates at the nose wheel well.
- (d) Put the flight deck handset back in its cradle.

———— **END OF TASK** ————

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FLIGHT INTERPHONE SYSTEM - MAINTENANCE PRACTICES

1. General

- A. This procedure has these tasks:
- (1) Flight Interphone System Deactivation.
 - (2) Flight Interphone System Activation.

TASK 23-51-00-040-801

2. Flight Interphone System - Deactivation

A. **General**

- (1) This task removes electrical power to the Flight Interphone System..

B. **Location Zones**

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

C. **Procedure**

SUBTASK 23-51-00-860-013

- (1) Open these circuit breakers and install safety tags:

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	13	C23611	INTPH GND

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	26	C23629	INTERPHONE-F/OBS
C	25	C23628	INTERPHONE-F/O

D. **Flight Interphone System - Tryout**

NOTE: This tryout is to make sure the Flight Interphone System is in a zero energy state.

SUBTASK 23-51-00-860-014

- (1) Make sure that these circuit breakers are open and have safety tags:

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	13	C23611	INTPH GND

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	26	C23629	INTERPHONE-F/OBS
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-00-700-001

- (2) Use a maintenance access terminal (MAT) to test if the AMU has power:
 - (a) Make these selections on the MAT:

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- 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 Digital Control Audio System
 - 5) SYSTEM TEST
 - 6) Digital Control Audio System
 - 7) CONTINUE
- (b) Do the instructions that show on the MAT and then make these selections:
- 1) CONTINUE
 - 2) START TEST
- (c) Make sure that FAILED shows adjacent to TEST CONDITIONS on the MAT.

————— **END OF TASK** —————

TASK 23-51-00-440-801

3. Flight Interphone System - Activation

A. General

- (1) This task adds electrical power to the Flight Interphone System..

B. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

C. Procedure

SUBTASK 23-51-00-860-015

- (1) Remove the safety tags and close these circuit breakers:

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	13	C23611	INTPH GND

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	26	C23629	INTERPHONE-F/OBS
C	25	C23628	INTERPHONE-F/O

————— **END OF TASK** —————

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FLIGHT INTERPHONE SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure gives a system test of the flight interphone system.

TASK 23-51-00-730-801

2. Flight Interphone System - System Test

A. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1614	Headset - Microphone Part #: 511-50699 Supplier: 0DH85 Part #: H3310 Supplier: 71483 Part #: H3312 Supplier: 71483 Opt Part #: 460A Supplier: 79687 Opt Part #: 511-20010-2 Supplier: 0DH85
COM-8986	Communication Cable - Ground Crew Part #: 4MS-TTCOMM-1 Supplier: 0BC31 Part #: 4MS-TTCOMM-6 Supplier: 0BC31 Part #: 511-20012 Supplier: 0DH85 Part #: C31-50 Supplier: 71483

C. Location Zones

Zone	Area
115	Area Outboard and Above Nose Landing Gear Wheel Well, Left
117	Main Equipment Center, Left
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Prepare for the Test

SUBTASK 23-51-00-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-51-00-860-002

- (2) Make sure the SERV INTPH (ON/OFF) switch on the P5 panel is in the OFF position.

SUBTASK 23-51-00-860-008

- (3) Make sure the OBS AUDIO switch on the P8 panel is in the NORM position.

SUBTASK 23-51-00-860-009

- (4) Make sure the oxygen masks at each flight crew station are in their stowage boxes.

SUBTASK 23-51-00-860-003

- (5) Set the Audio Control Panel (ACP) at each flight crew station to these conditions:
 - (a) Push all the on-off/volume control switches (LEDs go off).

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- (b) Push the FLT microphone selector switch (MIC light comes on).
- (c) Push the FLT and SPKR on-off/volume controls (LEDs come on).
- (d) Turn the FLT and SPKR on-off/volume controls to approximately the middle position.
- (e) Turn the V-B-R switch to the B position.

E. Procedure

SUBTASK 23-51-00-730-001

- (1) Do the communication test between the hand microphone and the headset for the captain's, first officer's, first observer's, and second observer's stations:
 - (a) Push and hold the PTT switch on the hand microphone at the captain's station.
 - (b) Speak into the captain's hand microphone.
 - 1) Make sure you hear your voice clearly from the first officer's headset.
 - 2) Make sure you hear your voice clearly from the first observer's headset.
 - 3) Make sure you hear your voice clearly from the second observer's headset.
 - 4) Release the PTT switch on the hand microphone at the captain's station.
 - (c) Push and hold the PTT switch on the hand microphone at the first officer's station.
 - (d) Speak into the first officer's hand microphone.
 - 1) Make sure you hear your voice clearly from the captain's headset.
 - 2) Make sure you hear your voice clearly from the first observer's headset.
 - 3) Make sure you hear your voice clearly from the second observer's headset.
 - 4) Release the PTT switch on the hand microphone at the first officer's station.
 - (e) Push and hold the PTT switch on the hand microphone at the first observer's station.
 - (f) Speak into the first observer's hand microphone.
 - 1) Make sure you hear your voice clearly from the captain's headset.
 - 2) Make sure you hear your voice clearly from the first officer's headset.
 - 3) Make sure you hear your voice clearly from the second observer's headset.
 - 4) Release the PTT switch on the hand microphone at the first observer's station.

SUBTASK 23-51-00-730-002

- (2) Do the communication test between the boom microphone and the headset at the captain's, first officer's, and observers stations:
 - (a) Push and hold the MIC switch on the captain's glare shield.
 - (b) Speak into the captain's boom microphone.
 - 1) Make sure you hear your voice clearly from the first officer's headset.
 - (c) Release the MIC switch on the captain's glare shield.
 - (d) Push and hold the MIC/INT switch on the captain's ACP to the MIC position.
 - (e) Speak into the captain's boom microphone.
 - 1) Make sure you hear your voice clearly from the first officer's headset.
 - (f) Release the MIC/INT switch on the captain's ACP.
 - (g) Push and hold the MIC/INT switch on the captain's control wheel to the MIC position.
 - (h) Speak into the captain's boom microphone.
 - 1) Make sure you hear your voice clearly from the first officer's headset.

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- (i) Release the MIC/INT switch on the captain's control wheel.
- (j) Push and hold the MIC switch on the first officer's glare shield.
- (k) Speak into the first officer's boom microphone.
 - 1) Make sure you hear your voice clearly from the captain's headset.
- (l) Release the MIC switch on the first officer's glare shield.
- (m) Push and hold the MIC/INT switch on the first officer's ACP to the MIC position.
- (n) Speak into the first officer's boom microphone.
 - 1) Make sure you hear your voice clearly from the captain's headset.
- (o) Release the MIC/INT switch on the first officer's ACP.
- (p) Push and hold the MIC/INT switch on the first officer's control wheel to the MIC position.
- (q) Speak into the first officer's boom microphone.
 - 1) Make sure you hear your voice clearly from the captain's headset.
- (r) Release the MIC/INT switch on the first officer's control wheel.
- (s) Push and hold the MIC/INT switch on the first observer's ACP to the MIC position.
- (t) Speak into the first observer's boom microphone.
 - 1) Make sure you hear your voice clearly from the captain's headset.
- (u) Release the MIC/INT switch on the first observer's ACP.

SUBTASK 23-51-00-730-003

- (3) Do the communication test between the oxygen mask microphone and the headset for the captain's, first officer's, and first observer's stations:

NOTE: The flight deck speakers are not muted when you do this test.

- (a) Remove the oxygen mask from its stowage box.
- (b) Push and hold the MIC/INT switch to the MIC position on the applicable ACP.
- (c) Speak into the oxygen mask microphone at one of the flight crew stations.
 - 1) Make sure you hear your voice clearly from the headphones at all other flight crew stations.
- (d) Release the MIC/INT switch on the applicable's ACP.
- (e) Put the oxygen mask in its stowage box.
- (f) Close the door of the oxygen mask stowage box.
- (g) Push the RESET switch on the oxygen mask stowage box.

SUBTASK 23-51-00-730-004

- (4) Do the muting test for the flight deck speakers from the Captain's position:

- (a) Push and hold the MIC/INT switch on the first observer's ACP to the INT position.
- (b) Speak into the first observer's boom microphone.
 - 1) Make sure you hear your voice clearly from the two flight deck speakers.

NOTE: Adjust the SPKR volume control on the ACP as necessary.

- (c) Continue to speak into the first observer's boom microphone until you complete this test.
- (d) Push and hold the PTT switch on the captain's hand microphone.
 - 1) Make sure the voice level from the flight deck speakers decreases.
- (e) Release the PTT switch on the hand microphone.

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- (f) Push and hold the MIC/INT switch on the captain's control wheel to the MIC position.
 - 1) Make sure the voice level from the flight deck speakers decreases.
- (g) Release the MIC/INT switch on the captain's control wheel.
- (h) Push and hold the MIC/INT switch on the captain's control wheel to the INT position.
 - 1) Make sure the voice level from the flight deck speakers decreases.
- (i) Release the MIC/INT switch on the captain's control wheel.
- (j) Push and hold the MIC/INT switch on the captain's ACP to the INT position.
 - 1) Make sure the voice level from the flight deck speakers decreases.
- (k) Release the MIC/INT switch on the captain's ACP.
- (l) Push and hold the MIC switch on the captain's glare shield.
 - 1) Make sure the voice level from the flight deck speakers decreases.
- (m) Release the MIC switch on the captain's glare shield.
- (n) Release the MIC/INT switch on the first observer's ACP.

SUBTASK 23-51-00-730-010

- (5) Do the muting test for the flight deck speakers again, from the First Officer's position instead of the Captain's.

SUBTASK 23-51-00-730-005

- (6) Do the INT PTT test:
 - (a) Push the PA microphone selector switch on all ACPs.
 - 1) Make sure the MIC lights come on.
 - (b) Push and hold the MIC/INT switch on the applicable ACP to the INT position at the flight crew station.
 - (c) Speak into the boom microphone from that flight crew station.
 - 1) Make sure you hear your voice clearly from the headset at another flight crew station.
 - 2) Make sure the voice is not heard on the PA.
 - (d) Do the INT PTT test for all other ACP's in the flight deck.
 - (e) Push the FLT microphone selector switches on all ACPs.
 - 1) Make sure the PA MIC lights go off and the FLT MIC light comes on, on all ACPs.

SUBTASK 23-51-00-730-011

- (7) Do the communication test between the boom microphone and the headset at the captain's station and the Main Equipment Center:
 - (a) Connect a headset - microphone, COM-1614 using communication cable, COM-8986, into the FLT INTPH jack, D23021, in the Main Equipment Center.
 - (b) Push and hold the PTT switch on the hand microphone at the captain's station.
 - (c) Speak into the captain's hand microphone.
 - 1) Make sure your voice is heard clearly from the headset in the main equipment center.
 - 2) Release the PTT switch on the hand microphone at the captain's station.
 - (d) Push and hold the PTT switch on the boom microphone/headset in the main equipment center.

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- (e) Speak into the boom microphone in the main equipment center.
 - 1) Make sure you hear a clear voice from the captain's headset.
 - 2) Release the PTT switch on the hand microphone at the boom microphone/headset in the main equipment center.
- (f) Remove the headset - microphone, COM-1614 and communication cable, COM-8986 from the FLT INTPH jack at the Main Equipment Center.

SUBTASK 23-51-00-730-012

- (8) Do the communication test between the boom microphone and the headset at the captain's station and the Nose Wheel Well:
 - (a) Connect a headset - microphone, COM-1614 using communication cable, COM-8986, into the FLT INTPH jack, D23020, on the P40 Nose Wheel Well panel.
 - (b) Push and hold the PTT switch on the hand microphone at the captain's station.
 - (c) Speak into the captain's hand microphone.
 - 1) Make sure your voice is heard clearly from the headset in the nose wheel well.
 - 2) Release the PTT switch on the hand microphone at the captain's station.
 - (d) Push and hold the PTT switch on the boom microphone/headset in the nose wheel well.
 - (e) Speak into the boom microphone in the nose wheel well.
 - 1) Make sure you hear a clear voice from the captain's headset.
 - 2) Release the PTT switch on the hand microphone at the boom microphone/headset in the nose wheel well.
 - (f) Remove the headset - microphone, COM-1614 and communication cable, COM-8986 from the FLT INTPH jack, D23020, on the P40 Nose Wheel Well panel.

SUBTASK 23-51-00-730-006

- (9) Use the first observer's ACP to do a communication test with the captain:
 - (a) Set the OBS AUDIO switch on the P8 panel to the CAPT position.
 - (b) Push the PA microphone selector switch on the captain's ACP.
 - 1) Make sure the MIC light comes on.
 - (c) Push and hold the MIC/INT switch on the captain's control wheel to the MIC position.
 - (d) Speak into the captain's boom microphone.
 - 1) Make sure you hear your voice clearly from the first officer's headset.
 - 2) Make sure the voice is not heard on the PA.
- NOTE: You should not hear the voice on the PA because the Captain is using the First Observer's system, and the First Observer's position has the FLT microphone selector switch pushed.
- (e) Release the MIC/INT switch on the captain's control wheel.
 - (f) Push and hold the MIC/INT switch on the first officer's control wheel to the MIC position.
 - (g) Speak into the first officer's boom microphone.
 - 1) Make sure you hear your voice clearly from the captain's headset.
 - (h) Release the MIC/INT switch on the first officer's control wheel.
 - (i) Push the PA microphone selector switch on the captain's ACP.
 - 1) Make sure the MIC light goes off.

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- (j) Push the FLT microphone selector switch on the captain's ACP.
 - 1) Make sure the MIC light comes on.

SUBTASK 23-51-00-730-007

- (10) Use the first observer's ACP to do a communication test with the first officer:
 - (a) Set the OBS AUDIO switch on the P8 panel to the F/O position.
 - (b) Push the PA microphone selector switch on the first officer's ACP.
 - 1) Make sure the MIC light comes on.
 - (c) Push and hold the MIC/INT switch on the first officer's control wheel to the MIC position.
 - (d) Speak into the first officer's boom microphone.
 - 1) Make sure you hear your voice clearly from the captain's headset.
 - 2) Make sure the voice is not heard on the PA.
 - NOTE: You should not hear the voice on the PA because the First Officer is using the First Observer's system, and the First Observer's position has the FLT microphone selector switch pushed.
 - (e) Release the MIC/INT switch on the first officer's control wheel.
 - (f) Push and hold the MIC/INT switch on the captain's control wheel to the MIC position.
 - (g) Speak into the captain's boom microphone.
 - 1) Make sure you hear your voice clearly from the first officer's headset.
 - (h) Release the MIC/INT switch on the captain's control wheel.
 - (i) Push the FLT microphone selector switch on the first officer's ACP.
 - 1) Make sure the MIC light comes on.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-51-00-860-004

- (1) Set these switches to their usual conditions:
 - (a) Set the OBS AUDIO switch to the NORM position on the P8 panel.
 - (b) Push the FLT microphone selector switch on all ACPs (LEDs go off).
 - (c) Push the FLT and SPKR on-off/volume controls on all ACPs (LEDs go off).

————— END OF TASK —————

TASK 23-51-00-720-801

3. Audio Transfer Switch Test

NOTE: This procedure is a scheduled maintenance task.

A. Location Zones

Zone	Area

211	Flight Compartment, Left

212	Flight Compartment, Right

B. Prepare for the Test

SUBTASK 23-51-00-860-005

- (1) Make sure the SERV INTPH (ON/OFF) switch on the P5 panel is in the OFF position.

SUBTASK 23-51-00-860-010

- (2) Make sure the OBS AUDIO switch on the P8 panel is in the NORM position.

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SUBTASK 23-51-00-860-011

- (3) Make sure the oxygen masks at each flight crew station are in their stowage boxes.

SUBTASK 23-51-00-860-006

- (4) Set the Audio Control Panel (ACP) at each flight crew station to these conditions:
 - (a) Push all the on-off/volume control switches (LEDs go off).
 - (b) Push the FLT microphone selector switch (MIC light comes on).
 - (c) Push the FLT and SPKR on-off/volume controls (LEDs come on).
 - (d) Turn the FLT and SPKR on-off/volume controls to approximately the middle position.
 - (e) Turn the V-B-R switch to the B position.

C. Procedure

SUBTASK 23-51-00-730-008

- (1) Use the first observer's ACP to do a communication test with the captain:
 - (a) Set the OBS AUDIO switch on the P8 panel to the CAPT position.
 - (b) Push the PA microphone selector switch on the captain's ACP.
 - 1) Make sure the MIC light comes on.
 - (c) Push and hold the MIC/INT switch on the captain's control wheel to the MIC position.
 - (d) Speak into the captain's boom microphone.
 - 1) Make sure you hear your voice clearly from the first officer's headset.
 - 2) Make sure the voice is not heard on the PA.

NOTE: You should not hear the voice on the PA because the Captain is using the First Observer's system, and the First Observer's position has the FLT microphone selector switch pushed.

 - (e) Release the MIC/INT switch on the captain's control wheel.
 - (f) Push and hold the MIC/INT switch on the first officer's control wheel to the MIC position.
 - (g) Speak into the first officer's boom microphone.
 - 1) Make sure you hear your voice clearly from the captain's headset.
 - (h) Release the MIC/INT switch on the first officer's control wheel.
 - (i) Push the FLT microphone selector switch on the captain's ACP.
 - 1) Make sure the MIC light comes on.

SUBTASK 23-51-00-730-009

- (2) Use the first observer's ACP to do a communication test with the first officer:
 - (a) Set the OBS AUDIO switch on the P8 panel to the F/O position.
 - (b) Push the PA microphone selector switch on the first officer's ACP.
 - 1) Make sure the MIC light comes on.
 - (c) Push and hold the MIC/INT switch on the first officer's control wheel to the MIC position.
 - (d) Speak into the first officer's boom microphone.
 - 1) Make sure you hear your voice clearly from the captain's headset.
 - 2) Make sure the voice is not heard on the PA.
 - (e) Release the MIC/INT switch on the first officer's control wheel.
 - (f) Push and hold the MIC/INT switch on the captain's control wheel to the MIC position.

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- (g) Speak into the captain's boom microphone.
 - 1) Make sure you hear your voice clearly from the first officer's headset.
- (h) Release the MIC/INT switch on the captain's control wheel.
- (i) Push the FLT microphone selector switch on the first officer's ACP.
 - 1) Make sure the MIC light comes on.

D. Put the Airplane Back to Its Usual Condition

SUBTASK 23-51-00-860-007

- (1) Set these switches to their usual conditions:
 - (a) Set the OBS AUDIO switch to the NORM position on the P8 panel.
 - (b) Push the FLT microphone selector switch on all ACPs (LEDs go off).
 - (c) Push the FLT and SPKR on-off/volume controls on all ACPs (LEDs go off).

————— END OF TASK —————

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AUDIO CONTROL PANEL - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
 - (1) A removal of the audio control panel (ACP)
 - (2) An installation of the ACP.
- B. The ACPs are installed in the flight compartment. The ACPs for the captain, first officer, and first observer are installed on the aisle stand (P8).
- C. The removal and installation procedures for the captain's, first officer's, first observer's ACP are the same.

TASK 23-51-01-000-801

2. Audio Control Panel (ACP) Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
20-41-01-000-803	ESDS Handling for Metal Encased Unit Removal (P/B 201)

B. **Location Zones**

Zone	Area
211	Flight Compartment, Left

C. **Removal Procedure**

SUBTASK 23-51-01-860-001

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
B	26	C23629	INTERPHONE-F/OBS
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-01-860-002

- (2) Turn the outer knob of the AISLE STAND PNL/FLOOD control fully counterclockwise.

SUBTASK 23-51-01-910-001

 CAUTION	DO NOT TOUCH THE ACP BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ACP.

- (3) Before you touch the ACP [2], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-41-01-000-803.

SUBTASK 23-51-01-020-001

- (4) Remove the ACP [2]:
 - (a) Loosen the four quarter-turn fasteners [1] on the top of the ACP [2].

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CAUTION

DO NOT HOLD THE ACP CONTROL KNOBS TO PULL THE ACP OUT FROM THE PANEL. DAMAGE TO EQUIPMENT CAN OCCUR.

- (b) Hold the ACP [2] at the top and bottom edges with two hands.
- (c) Lift the ACP [2] out from the panel.
- (d) Disconnect the electrical connectors at the rear of the ACP [2].
- (e) Remove the ACP [2].
- (f) Put protective covers on the electrical connector.

———— **END OF TASK** ————

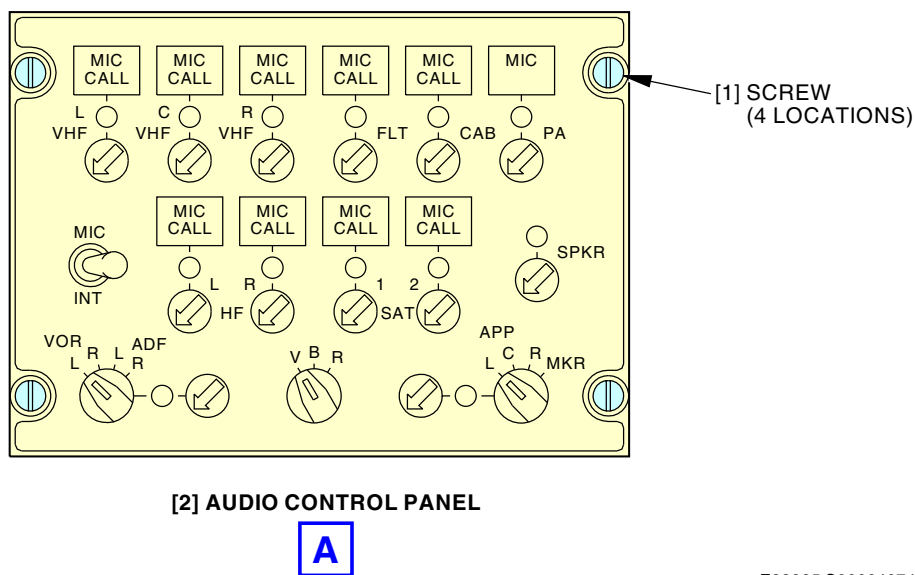
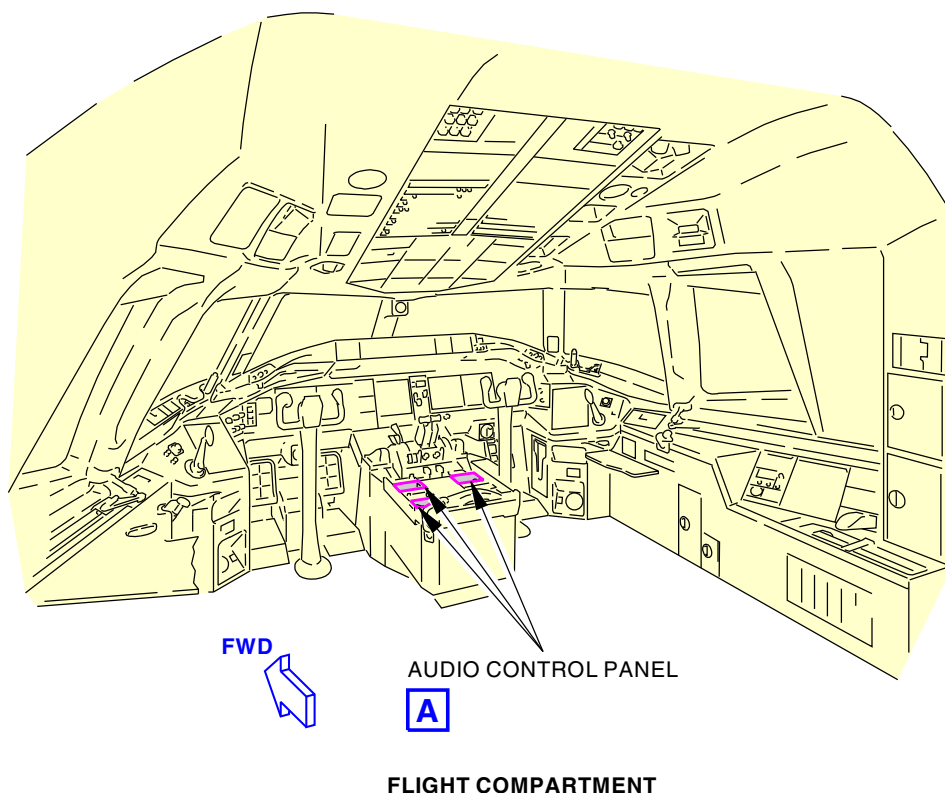
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Audio Control Panel Installation
Figure 401/23-51-01-990-802

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TASK 23-51-01-400-801

3. Audio Control Panel (ACP) Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) This task installs the ACP [2] on the aisle stand (P8) and gives a test of the installed ACP [2].
- (2) A maintenance access terminal (MAT) is necessary for this procedure. For instructions on how to use a MAT, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
20-41-01-400-803	ESDS Handling for Metal Encased Unit Installation (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	ACP	Not Specified	

D. Location Zones

Zone	Area
211	Flight Compartment, Left

E. Installation Procedure

SUBTASK 23-51-01-860-003

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
B	26	C23629	INTERPHONE-F/OBS
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-01-910-002

 CAUTION	DO NOT TOUCH THE ACP BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ACP.

- (2) Before you touch the ACP [2], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-41-01-400-803.

SUBTASK 23-51-01-420-001

- (3) Install the ACP [2]:
 - (a) Remove the protective covers from the electrical connectors.
 - (b) Examine the electrical connectors for bent or broken pins, dirt, and damage.
 - (c) Hold the ACP [2] at the top and bottom edges with two hands.
 - (d) Put the ACP [2] at its correct position.

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- (e) Connect the electrical connectors to the rear of the ACP [2].
- (f) Tighten the four quarter-turn fasteners [1] on the ACP front panel.

SUBTASK 23-51-01-860-004

- (4) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
B	26	C23629	INTERPHONE-F/OBS
C	25	C23628	INTERPHONE-F/O

F. Installation Test

SUBTASK 23-51-01-860-005

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-51-01-730-001

- (2) Use a maintenance access terminal (MAT) to do a System test of the Digital Control Audio System:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 Digital Control Audio System
 - 5) SYSTEM TEST
 - 6) Digital Control Audio System
 - 7) CONTINUE
 - (b) Do the instructions that show on the MAT and then make these selections:
 - 1) CONTINUE
 - 2) START TEST
 - (c) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
 - (d) If FAILED shows, refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

SUBTASK 23-51-01-710-001

- (3) Do an operational test of the installed ACP [2]:
 - (a) Set the V-R-B switch to the B position.
 - (b) Push the SPKR control switch.
 - 1) Make sure the light on the SPKR control switch comes on.
 - (c) Push the FLT microphone selector switch on the ACP [2].
 - 1) Make sure the light on the FLT microphone selector switch comes on.
 - (d) Push and hold the PTT switch on the ACP [2] to the INT position.
 - (e) Speak into the boom microphone.
 - 1) Make sure the other person can hear your voice from each of the other headsets.

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- 2) Make sure you cannot hear your voice on the PA.
- (f) Push and hold the PTT switch on the ACP [2] to the MIC position.
- (g) Speak into the pilot's boom microphone.
 - 1) Make sure the other person can hear your voice from each of the other headsets.
- (h) Release the PTT switch.

———— **END OF TASK** ————

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AUDIO MANAGEMENT UNIT - REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks:
- (1) A removal of the audio management unit (AMU)
 - (2) An installation of the AMU.
- B. The AMU is on the E1 electronics equipment rack, shelf No. 4, in the main equipment center.

TASK 23-51-04-000-801

2. Audio Management Unit (AMU) Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
20-10-01-000-801	E/E Box Removal (P/B 401)
20-41-01-000-803	ESDS Handling for Metal Encased Unit Removal (P/B 201)

B. **Location Zones**

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right

C. **Removal Procedure**

SUBTASK 23-51-04-860-001

- (1) Open these circuit breakers and install safety tags:

Ground Service/Handling Power Panel, P320

Row	Col	Number	Name
C	13	C23611	INTPH GND

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	23	C23646	INTERPHONE-STBY F/O
B	24	C23631	INTERPHONE-SERVICE
B	25	C23627	INTERPHONE-CAPTAIN
B	26	C23629	INTERPHONE-F/OBS
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-04-910-001



DO NOT TOUCH THE AMU BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE AMU.

- (2) Before you touch the AMU [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-41-01-000-803.

SUBTASK 23-51-04-020-001

- (3) To remove the AMU [1], do this task: E/E Box Removal, TASK 20-10-01-000-801.

————— **END OF TASK** —————

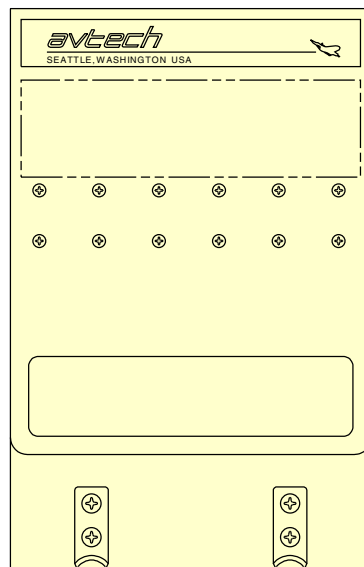
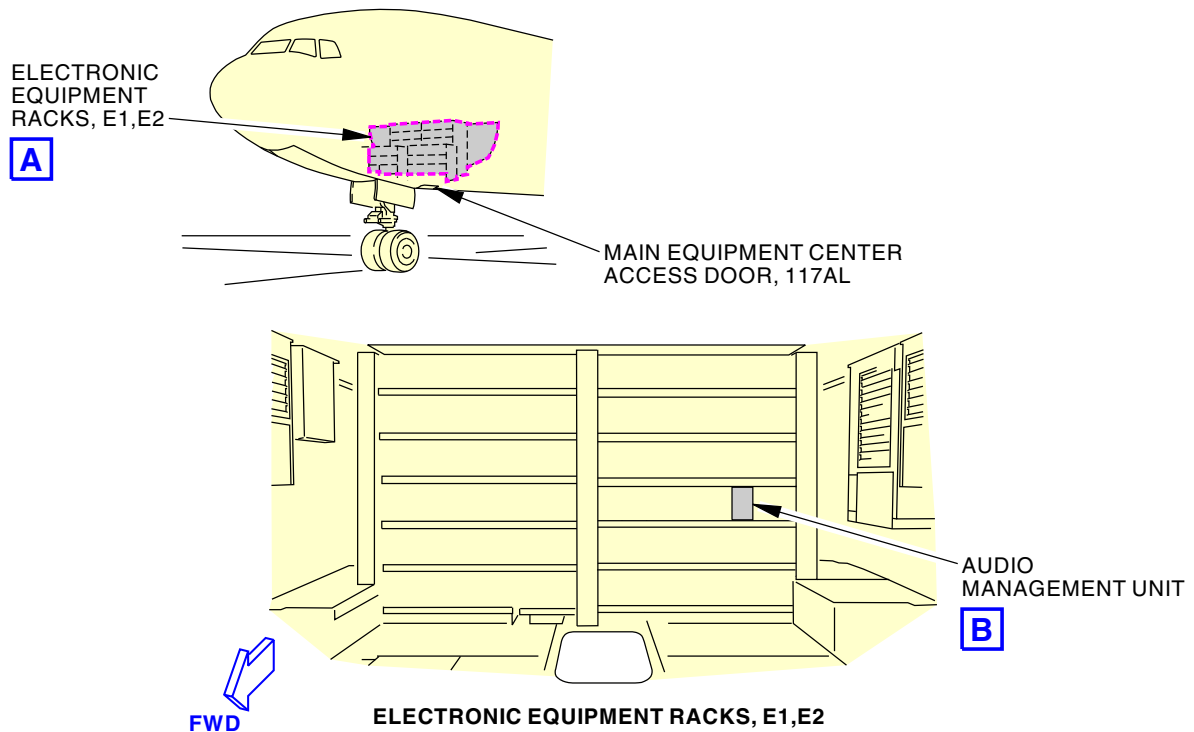
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[1] AUDIO MANAGEMENT UNIT

[B]

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Audio Management Unit Installation
Figure 401/23-51-04-990-802

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TASK 23-51-04-400-801

3. Audio Management Unit (AMU) Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) This task installs the AMU [1] on the E1-4 shelf in the E/E bay and gives a test of the installed AMU [1].
- (2) A maintenance access terminal (MAT) is necessary for this procedure. For instructions on how to use a MAT, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
20-10-01-400-801	E/E Box Installation (P/B 401)
20-41-01-400-803	ESDS Handling for Metal Encased Unit Installation (P/B 201)
23-41-00-700-801	Service Interphone System - Operational Test (P/B 501)
23-51-00-730-801	Flight Interphone System - System Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	AMU	23-51-04-01-005	ARO ALL

D. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right

E. Installation Procedure

SUBTASK 23-51-04-860-004

- (1) Make sure that these circuit breakers are open and have safety tags:

Ground Service/Handling Power Panel, P320

Row	Col	Number	Name
C	13	C23611	INTPH GND

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	23	C23646	INTERPHONE-STBY F/O
B	24	C23631	INTERPHONE-SERVICE
B	25	C23627	INTERPHONE-CAPTAIN
B	26	C23629	INTERPHONE-F/OBS
C	25	C23628	INTERPHONE-F/O

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SUBTASK 23-51-04-910-002



DO NOT TOUCH THE AMU BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE AMU.

- (2) Before you touch the AMU [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-41-01-400-803.

SUBTASK 23-51-04-420-001

- (3) To install the AMU [1], do this task: E/E Box Installation, TASK 20-10-01-400-801.

SUBTASK 23-51-04-860-002

- (4) Remove the safety tags and close these circuit breakers:

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	13	C23611	INTPH GND

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	24	C23631	INTERPHONE-SERVICE
B	25	C23627	INTERPHONE-CAPTAIN
B	26	C23629	INTERPHONE-F/OBS
C	25	C23628	INTERPHONE-F/O

F. Installation Test

SUBTASK 23-51-04-860-003

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-51-04-730-001

- (2) Use a maintenance access terminal (MAT) to do the LRU replacement test of the AMU [1]:
- (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 Digital Control Audio System
 - 5) SYSTEM TEST
 - 6) Digital Control Audio System
 - 7) CONTINUE
 - (b) Do the instructions that show on the MAT and then make these selections:
 - 1) CONTINUE
 - 2) START TEST
 - (c) When the test is completed, make sure that PASSED shows adjacent to TEST CONDITIONS on the MAT.
 - (d) If FAILED shows, refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

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SUBTASK 23-51-04-730-002

- (3) Do the steps that follow to check the Flight Interphone system. If necessary, refer to :Flight Interphone System - System Test, TASK 23-51-00-730-801.
- (a) Do the voice communication test between the captain and the first officer stations.
 - (b) Make sure you hear the voice clearly at both stations.

SUBTASK 23-51-04-710-001

- (4) Do the steps that follow to check the Service Interphone system. If necessary, refer to : Service Interphone System - Operational Test, TASK 23-41-00-700-801.
- (a) Do the voice communication test between any two ground service stations.
 - (b) Make sure you can hear the voice clearly at both stations.

————— **END OF TASK** —————

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FLIGHT INTERPHONE SPEAKER - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
 - (1) A removal of the flight interphone speaker
 - (2) An installation of the flight interphone speaker.
- B. Two flight interphone speakers are installed in the flight compartment. One is on the forward left auxiliary panel (P13) for the captain and one is on the forward right auxiliary panel (P14) for the first officer. It is necessary to remove the forward console to get access to the speaker.
- C. Optional procedures have been provided to remove and install the flight interphone speakers.

TASK 23-51-05-000-801

2. Flight Interphone Speaker Removal

(Figure 401)

A. **General**

- (1) An optional procedure has been provided to remove the flight interphone speaker.
 - (a) You do not have to remove the forward console if you use the optional procedure.
 - (b) The optional procedure uses the disconnect access panel near the brake pedal to get access to the speaker.
 - (c) The optional procedure is not easy to do. You must twist your body around the steering console and the seat. You must use a flashlight and a mirror to see the speaker through the access panel.

B. **References**

Reference	Title
25-15-03-000-801	Forward Console Removal (P/B 401)

C. **Location Zones**

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. **Removal Procedure**

SUBTASK 23-51-05-860-001

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-05-010-001

- (2) To get access to the speaker, do this task: Forward Console Removal, TASK 25-15-03-000-801.

SUBTASK 23-51-05-020-002

- (3) Do these steps to remove the flight interphone speaker [3]:
 - (a) Remove the screws [4] that attach the speaker [3] to the forward console [6].

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- (b) Disconnect the electrical connector [5] from the speaker [3].
- (c) Remove the speaker [3].

E. Removal Procedure - Optional

SUBTASK 23-51-05-860-006

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-05-020-003

- (2) Do these steps to remove the flight interphone speaker [3]:
 - (a) Remove the screws [4] that attach the speaker [3] to the forward console.
 - (b) Push the speaker [3] down.
 - (c) Loosen the quarter-turn fasteners [2] on the disconnect access panel [1].
 - (d) Remove the disconnect access panel [1] to get access to the speaker [3].
 - (e) Extend your arm into the disconnect access to get to the speaker [3].
NOTE: Use a mirror and a flashlight to see the speaker [3].
 - (f) Disconnect the electrical connector [5] from the speaker [3].
 - (g) Remove the speaker [3].

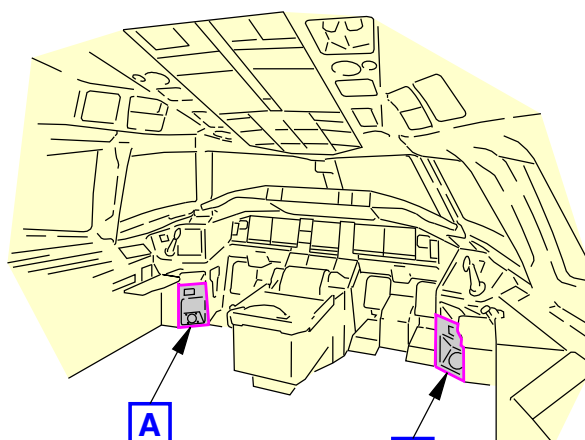
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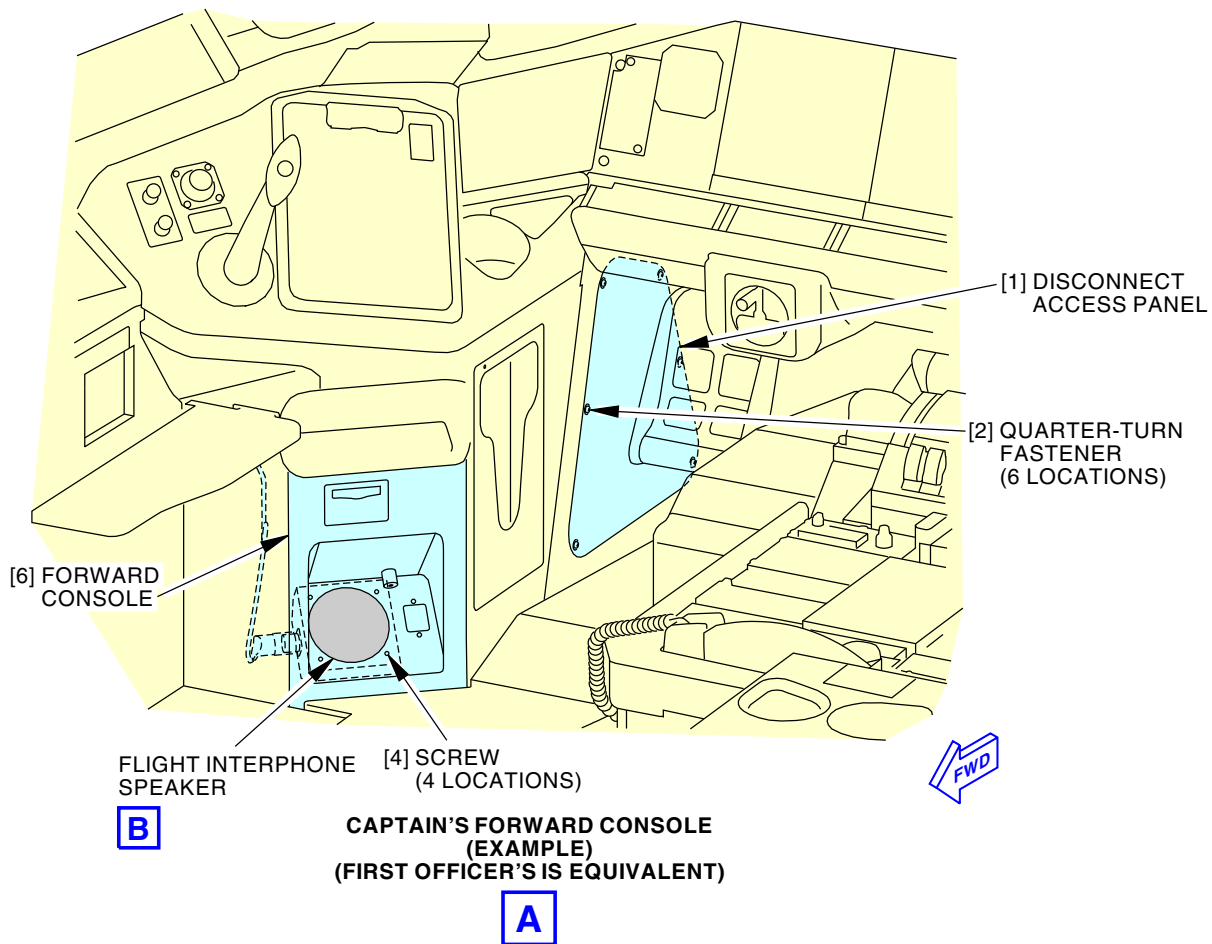
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FLIGHT COMPARTMENT



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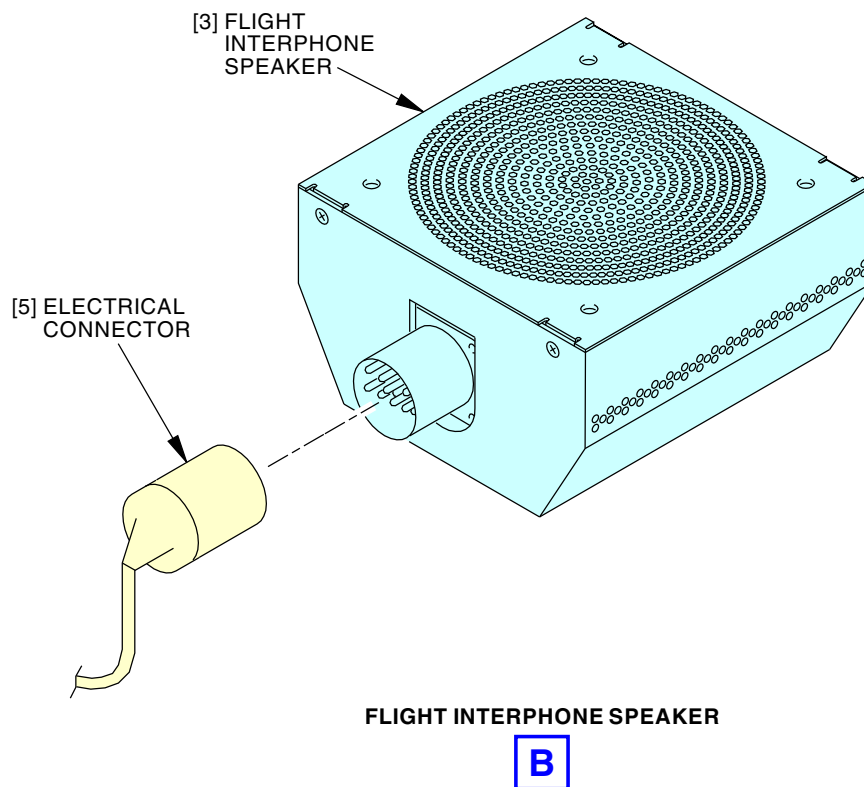
**Flight Interphone Speaker Installation
Figure 401/23-51-05-990-802 (Sheet 1 of 2)**

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Flight Interphone Speaker Installation
Figure 401/23-51-05-990-802 (Sheet 2 of 2)

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TASK 23-51-05-400-801

3. Flight Interphone Speaker Installation

(Figure 401)

A. General

- (1) An optional procedure has been provided to install the flight interphone speaker.
 - (a) You do not have to remove the forward console if you use the optional procedure.
 - (b) The optional procedure uses the disconnect access panel near the brake pedal to get access to the speaker.
 - (c) The optional procedure is not easy to do. You must twist your body around the steering console and the seat. You must use a flashlight and a mirror to see as you put the speaker into position through the access panel.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-15-03-400-801	Forward Console Installation (P/B 401)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Speaker	23-51-05-01-045	ARO ALL
		23-51-51-02-010	ARO ALL

D. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

E. Installation Procedure

SUBTASK 23-51-05-860-002

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-05-420-001

- (2) Do these steps to install the flight interphone speaker [3]:
 - (a) Connect the electrical connector [5] to the speaker [3].
 - (b) Put the speaker [3] in its correct mounting position.
 - (c) Align the speaker mounting holes with the four holes in the mounting area.
 - (d) Install the screws [4] that attach the speaker [3] to the forward console [6].

SUBTASK 23-51-05-410-001

- (3) Do this task: Forward Console Installation, TASK 25-15-03-400-801.

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SUBTASK 23-51-05-860-003

- (4) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

F. Installation Procedure - Optional

SUBTASK 23-51-05-860-007

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-05-420-003

- (2) Do these steps to install the flight interphone speaker [3]:
- Put the speaker [3] through the disconnect access panel [1] near to the mounting position.
 - Connect the electrical connector [5] to the speaker [3].
 - Put the speaker [3] in its correct mounting position.
 - Align the speaker mounting holes with the four holes in the mounting area.
 - Install the screws [4] that attach the speaker [3] to the forward console [6].
 - Install the disconnect access panel [1].
 - Tighten the quarter-turn fasteners [2].

SUBTASK 23-51-05-860-008

- (3) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

G. Installation Test

SUBTASK 23-51-05-860-004

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-51-05-710-001

- (2) Do an operational test of the installed flight interphone speaker [3]:
- Push the SPKR control switch on the captain's and first officer's audio control panels (ACPs).
 - Make sure the light on the SPKR control switch comes on.
 - Turn the SPKR control switch to approximately the middle position.
 - Push the FLT microphone selector switch on the captain's ACP.

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- 1) Make sure the MIC light comes on.
- (d) Push and hold the MIC/INT switch on the captain's ACP to the INT position.
- (e) Speak into the boom microphone.
 - 1) Make sure you hear your voice clearly from the installed speaker.
- (f) Turn the SPKR control switch fully clockwise.
- (g) Speak into the boom microphone.
 - 1) Make sure the voice level from the speaker [3] increases.
- (h) Turn the SPKR control switch counterclockwise.
- (i) Speak into the boom microphone.
 - 1) Make sure the voice level from the speaker [3] decreases.
- (j) Push the SPKR control switch.
 - 1) Make sure the light in the SPKR control switch goes off.

———— **END OF TASK** ————

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CONTROL WHEEL PTT SWITCH - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the control wheel PTT switch
 - (2) An installation of the control wheel PTT switch.
- B. The installation task contains a test of the installed PTT switch.

TASK 23-51-06-000-801

2. Control Wheel PTT Switch Removal

(Figure 401)

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-11521	Tool - Insertion/Removal Part #: M81969/14-10 Supplier: 54443

B. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

C. Removal Procedure

SUBTASK 23-51-06-860-001

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-06-020-001

- (2) Remove the PTT switch [2]:
- (a) Remove the two screws [1] from the PTT switch [2].
 - (b) Pull the PTT switch [2] out from the control wheel.
 - (c) Disconnect the wires from the PTT switch [2] with insertion/removal tool, COM-11521.

————— **END OF TASK** —————

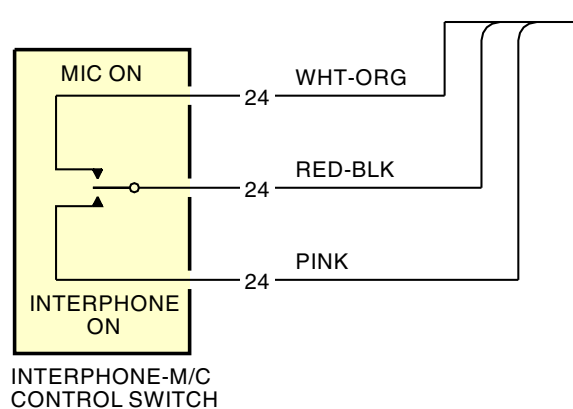
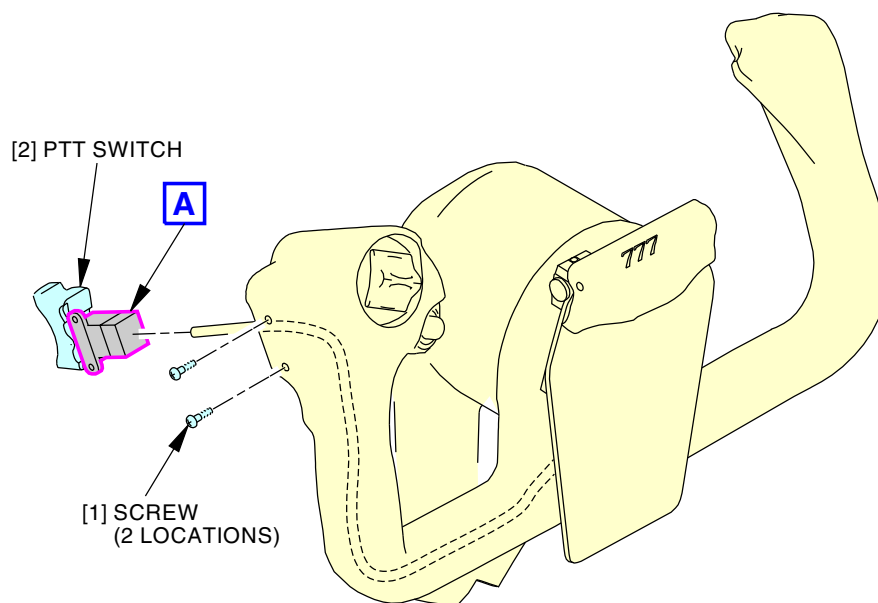
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A

C74050 S0006407471_V2

Control Wheel PTT Switch Installation
Figure 401/23-51-06-990-802

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TASK 23-51-06-400-801

3. **Control Wheel PTT Switch Installation**

(Figure 401)

A. **References**

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Switch	23-51-06-02-015	ARO ALL
		23-51-06-02-020	ARO ALL

C. **Location Zones**

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. **Installation Procedure**

SUBTASK 23-51-06-860-004

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-06-420-001

- (2) Install the PTT switch [2]:
- (a) Connect the wire to the PTT switch [2] per detail A.
 - (b) Put the PTT switch [2] in the correct position on the control wheel.
 - (c) Install the two screws [1] that connect the PTT switch [2] to the control wheel.

SUBTASK 23-51-06-860-002

- (3) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-06-860-003

- (4) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-51-06-710-001

- (5) Do an operational test of the installed PTT switch [2]:
- (a) Push the FLT microphone selector switch on the captain's and first officer's audio control panels (ACPs).
 - 1) Make sure the MIC light comes on.
 - (b) Push and hold the PTT switch [2] on the control wheel to the MIC position.

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- (c) Speak into the pilot's boom microphone.
 - 1) Make sure the voice is heard clearly from the other pilot's headset.
- (d) Release the PTT switch [2] on the control wheel.
- (e) Push the PA microphone selector switch on the captain's ACP.
 - 1) Make sure the MIC light comes on.
- (f) Push and hold the PTT switch [2] on the control wheel to the INT position.
- (g) Speak into the pilot's boom microphone.
 - 1) Make sure the voice is heard clearly from the other pilot's headset.
 - 2) Make sure the voice is not heard on the PA.
- (h) Release the PTT switch [2] on the control wheel.

———— **END OF TASK** ————

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GLARESHIELD PTT SWITCH - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the glareshield push-to-talk (PTT) switch.
- (2) An installation of the glareshield PTT switch.

TASK 23-51-07-000-801

2. Glareshield PTT Switch - Removal

A. **Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment, Left
212	Flight Compartment, Right

B. **Removal Procedure**

SUBTASK 23-51-07-865-003

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-07-000-001

- (2) Remove the glareshield PTT switch [1] as follows:

- (a) Remove the map light knob [2] as follows:

- 1) Loosen the hex head screw that holds the map light knob [2].

- (b) Remove the lightplate assembly as follows:

- 1) Remove the three screws [4] that hold the lightplate [5] to the glareshield [3].

- (c) Remove the glareshield lower cover [10] as follows:

NOTE: The flood lights stay attached to the cover, and do not need to be removed.

- 1) Remove the five screws [9] that hold the lower glareshield cover [10].

- (d) Remove the glareshield PTT switch [1] as follows:

NOTE: There are two different types of PTT switches. The 'toggle' type switch has three wires, and the 'push-button' type switch has two wires.

- 1) Remove the nut [8] and washer [7] from the glareshield PTT switch [1].
- 2) Carefully remove the glareshield PTT switch [1] from the back of the glareshield [3].

- (e) Remove the shrink-wrap insulation from the wire connection.

- 1) Put a label on each wire.
- 2) Disconnect the wire connectors from the glareshield PTT switch [1] by pulling each wire in a straight line away from the glareshield PTT switch [1].
 - a) Make sure not to wiggle the connectors or it could loosen the contacts.

———— **END OF TASK** ————

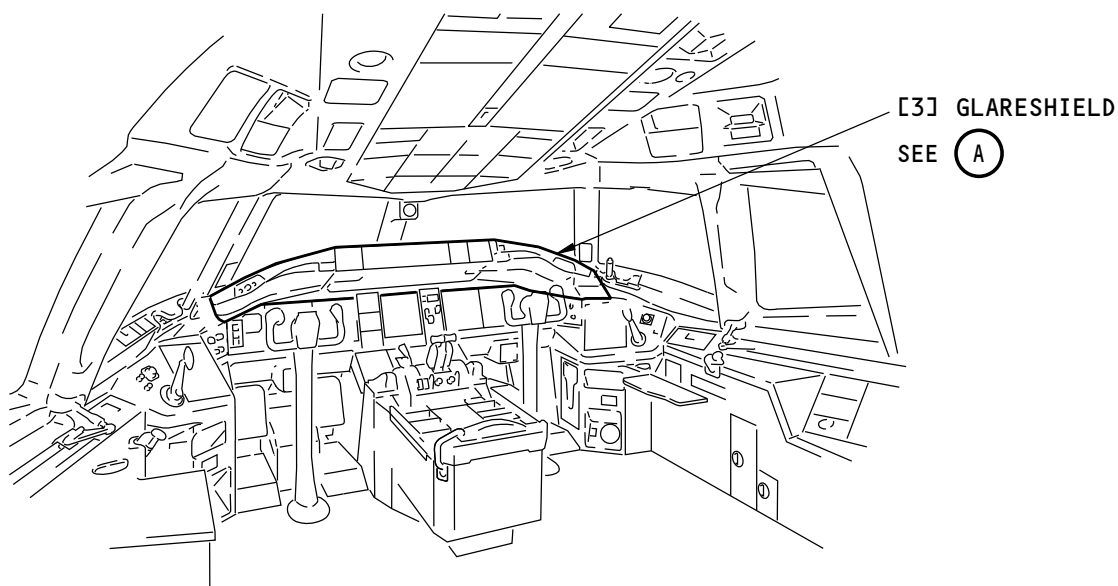
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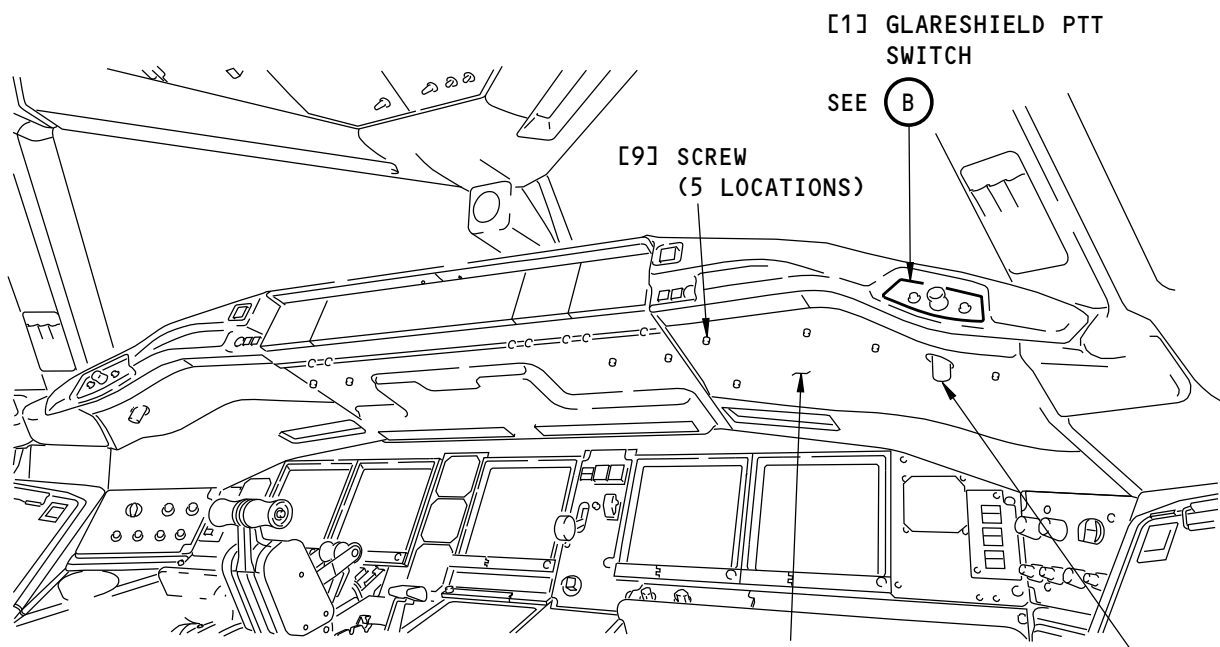
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FLIGHT COMPARTMENT



GLARESHIELD

(A)

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Glareshield PTT Switch Installation
Figure 401/23-51-07-990-803 (Sheet 1 of 2)

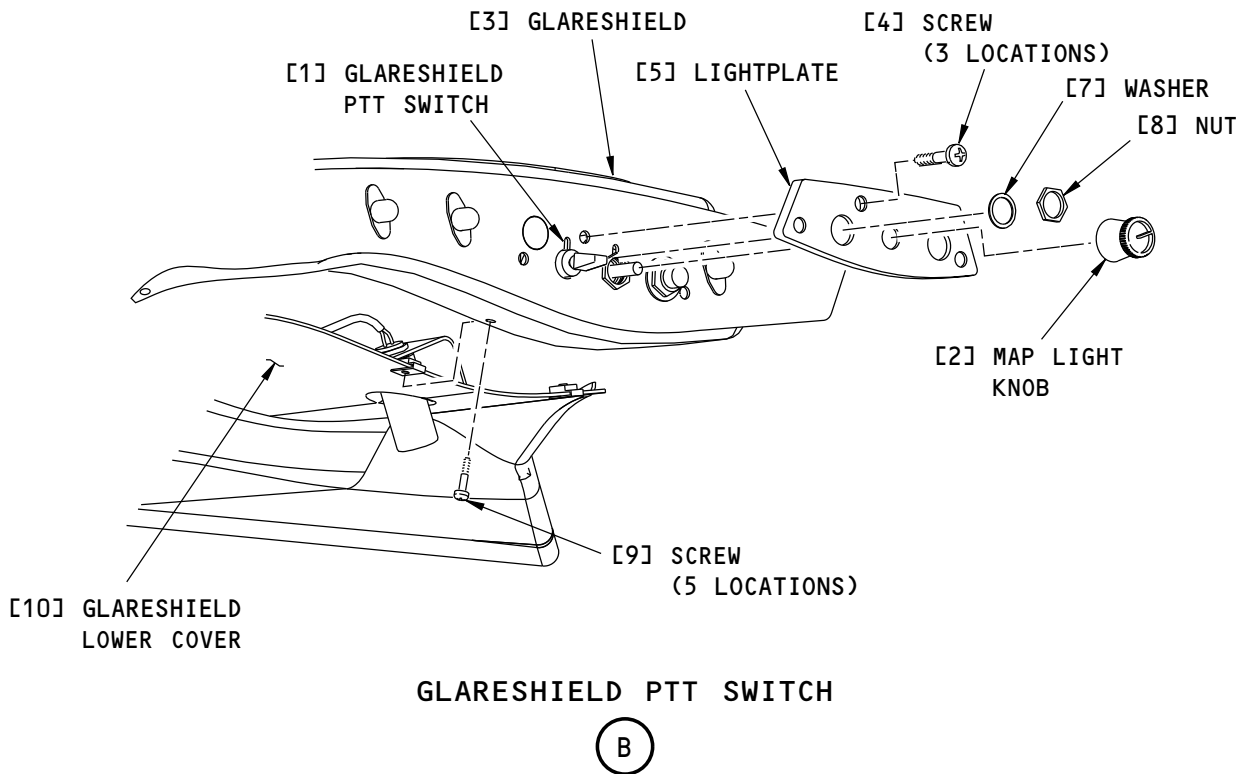
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Glareshield PTT Switch Installation
Figure 401/23-51-07-990-803 (Sheet 2 of 2)

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TASK 23-51-07-400-801

3. Glareshield PTT Switch - Installation

A. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Tools/Equipment

Reference	Description
STD-441	Gun - Heat, 500 to 800° F (260 to 427° C)

C. Consumable Materials

Reference	Description	Specification
G01148	Sleeve - Insulation, Electrical, Heat Shrinkable - RT-876	
G51210	Tubing - Highly Flame-Retardant, Low-Shrink Temperature, Polyolefin	AMS-DTL-23053/5 Class 1

D. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

E. Installation Procedure

SUBTASK 23-51-07-865-001

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

SUBTASK 23-51-07-420-001

- (2) Install the glareshield PTT switch [1] as follows:

- (a) Do these steps to install the wires on the glareshield PTT switch [1]:

- 1) Make a short length of RT-876 sleeve, G01148 or Versafit heat shrink tubing, G51210 for each wire connector.
 - a) Make each piece long enough to cover the wire-connector and overlap the wire insulation.

NOTE: Cut the sleeve 10% longer than the minimum length because the sleeve will be smaller after you apply heat.

- 2) Remove the labels and slide one RT-876 sleeve, G01148 or Versafit heat shrink tubing, G51210 over each connector.
- 3) Connect the wires to the glareshield PTT switch [1].
- 4) Shrink the RT-876 sleeve, G01148 or Versafit heat shrink tubing, G51210 over the wire connections with a heat gun, 500 to 800° F, STD-441.

- (b) Put the glareshield PTT switch [1] in the correct position on the glareshield [3].

- 1) Install the washer [7] and nut [8].

- (c) Put the glareshield lower cover [10] in the correct position.

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- 1) Install the five screws [9].
- (d) Install the lightplate assembly as follows:
 - 1) Position the lightplate [5] so that the cutouts fit evenly over the switches.
 - 2) Install the three screws [4] that hold the lightplate [5] to the glareshield [3].
- (e) Install the map light knob [2] as follows:
 - 1) Make sure the switch shaft is in the 'in' position.
 - 2) Install the map light knob [2] with the bottom of the knob slightly above the mounting nut (so there is no interference).
 - 3) Tighten the hex head screw that holds the map light knob [2].

SUBTASK 23-51-07-865-002

- (3) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	23	C23646	INTERPHONE-STBY F/O
B	25	C23627	INTERPHONE-CAPTAIN
C	25	C23628	INTERPHONE-F/O

F. Installation Test

SUBTASK 23-51-07-860-002

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-51-07-710-002

- (2) Do an operational test of the glareshield PTT switch.
 - (a) Push the FLT microphone selector switch on the captain's and first officer's audio control panel.
 - 1) Make sure the MIC light comes on.
 - (b) Push and hold the glareshield PTT switch to the MIC position.
 - (c) Speak into the pilot's boom microphone.
 - 1) Make sure the voice is heard clearly from the other pilot's headset.
 - (d) Release the glareshield PTT switch.
 - (e) AIRPLANES WITH TOGGLE TYPE OF GLARESHIELD PTT SWITCH;
Do these steps:
 - 1) Push the PA microphone selector switch on the captain's audio control panel.
 - a) Make sure the MIC light comes on.
 - 2) Push and hold the glareshield PTT switch to the INT position.
 - 3) Speak into the pilot's boom microphone.
 - a) Make sure the voice is heard clearly from the other pilot's headset.
 - b) Make sure the voice is not heard on the PA.
 - (f) Set the glareshield floodlight to the on mode.
 - 1) Make sure the floodlight comes on.
 - 2) Set the glareshield floodlight to the usual position.
 - (g) Set the map light knob to the on mode.

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- 1) Make sure the map light comes on.
- 2) Set the map light knob to the usual position.

———— **END OF TASK** ————

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STATIC DISCHARGERS - MAINTENANCE PRACTICES

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) A removal of the static discharger.
 - (2) An installation of the static discharger.
 - (3) A removal of the static discharger base.
 - (4) An installation of the static discharger base.
 - (5) An inspection/check of the static discharger base.
 - (6) An inspection/check of the static discharger.
 - (7) A general visual inspection of the static dischargers.

TASK 23-61-01-000-801

2. Static Discharger Removal

(Figure 201 or Figure 202 or Figure 203)

A. General

- (1) The static dischargers are installed on the wing edge and tail edge. The discharger is held by a setscrew on its base. The base is attached to the airplane surface.

B. References

Reference	Title
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)

C. Location Zones

Zone	Area
325	Rudder
327	Vertical Stabilizer Forward Tip
336	Left Elevator
337	Left Horizontal Stabilizer Tip
346	Right Elevator
347	Right Horizontal Stabilizer Tip
545	Raked Wing Tip, Left
568	Left Wing Aileron
645	Raked Wing Tip, Right
668	Right Wing Aileron

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D. Procedure

SUBTASK 23-61-01-860-002



MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic system (TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-014

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-010-001

- (3) Access the defective static discharger.

SUBTASK 23-61-01-020-001

- (4) Loosen the static discharger setscrew [2].

SUBTASK 23-61-01-020-002

- (5) Remove the discharger [1] from the discharger base.

SUBTASK 23-61-01-860-015

- (6) If necessary, put the Main Hydraulic System back to its usual condition (TASK 29-11-00-860-807).

————— **END OF TASK** —————

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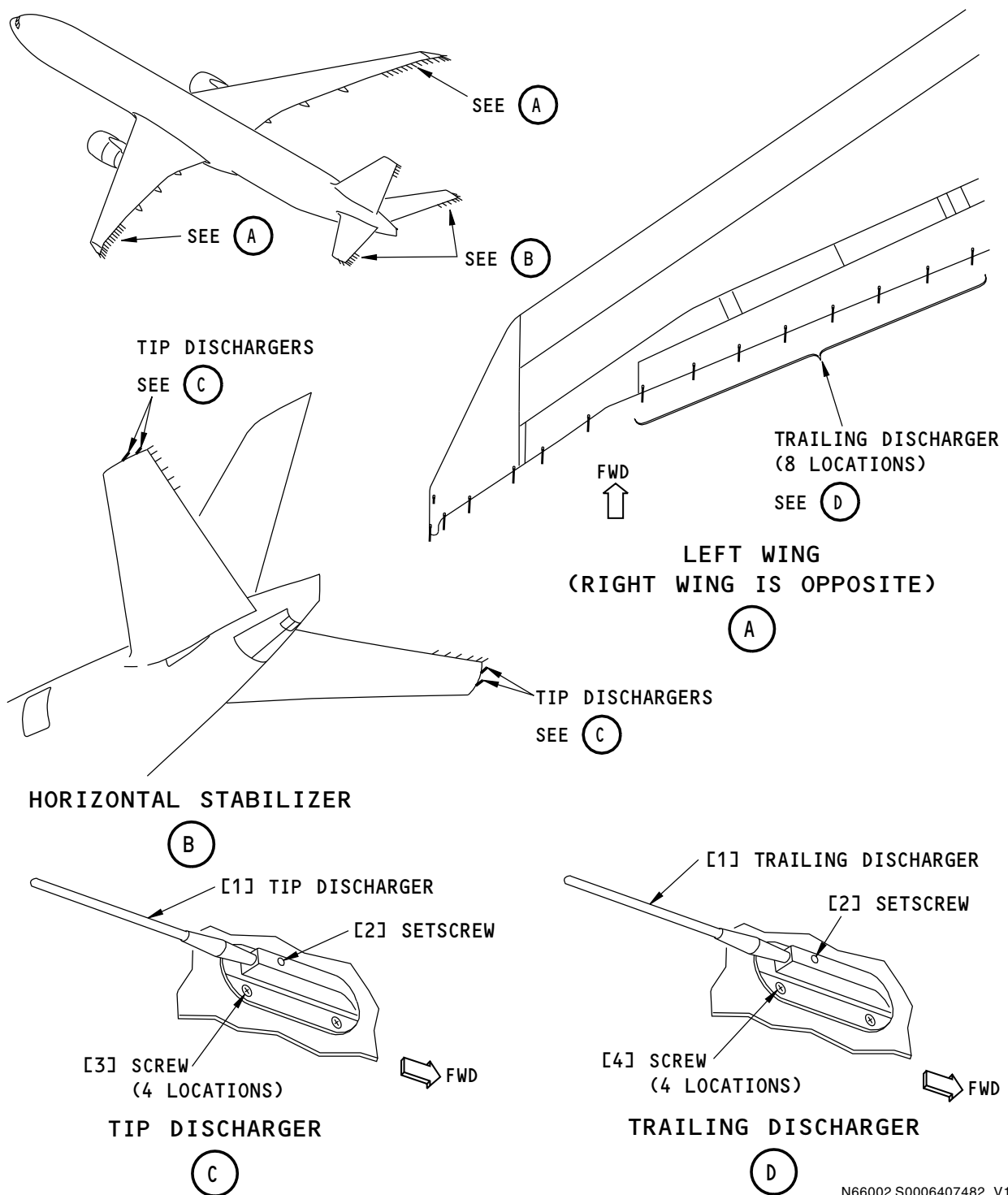
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Static Discharger (with Screws) Installation
Figure 201/23-61-01-990-801

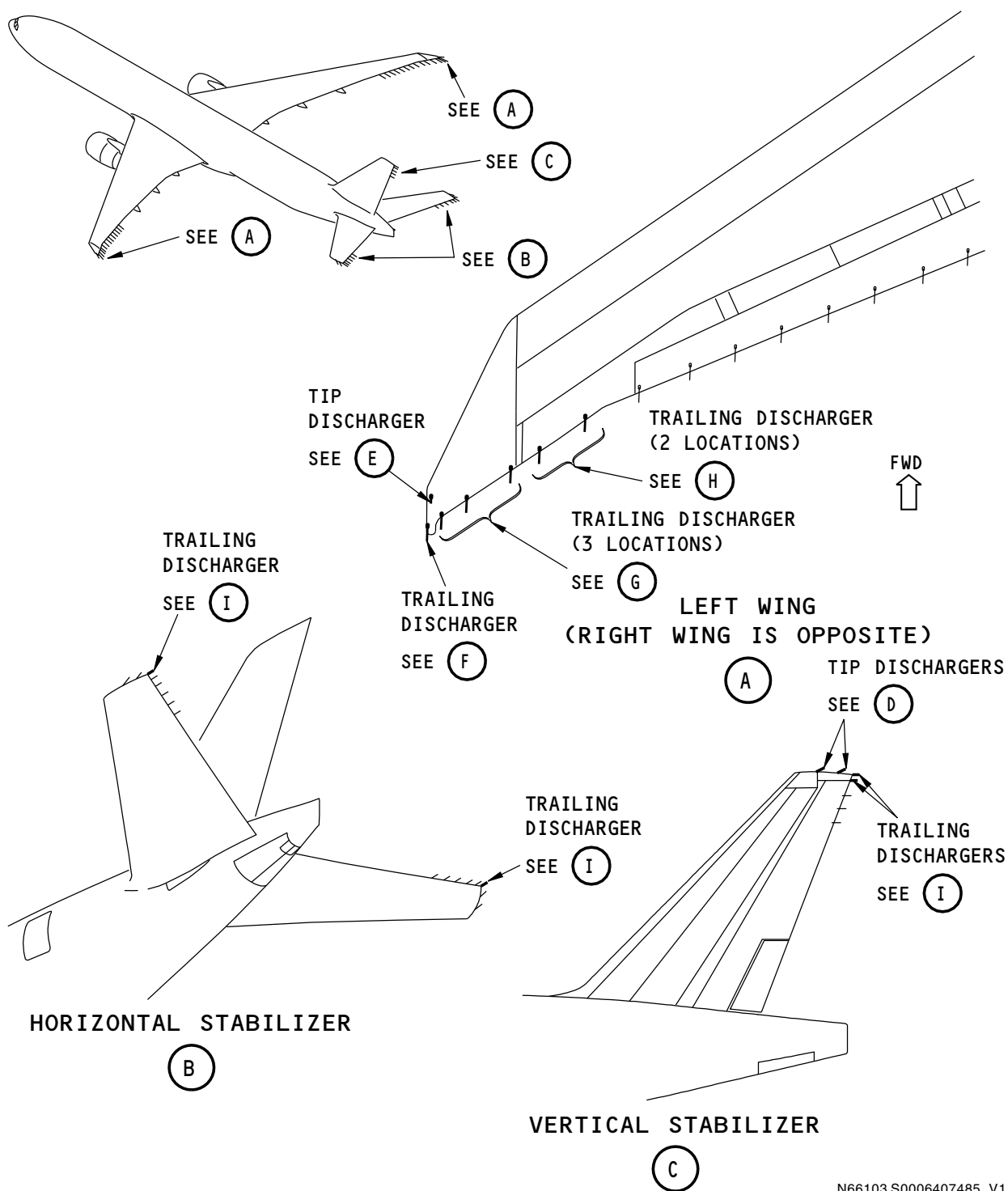
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N66103 S0006407485_V1

**Static Discharger (with Rivets) Installation
Figure 202/23-61-01-990-806 (Sheet 1 of 3)**

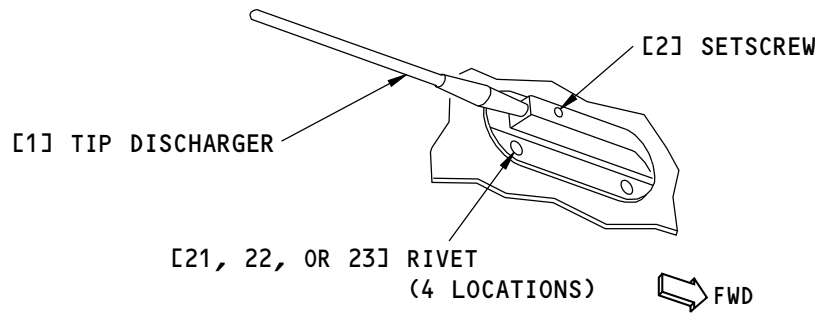
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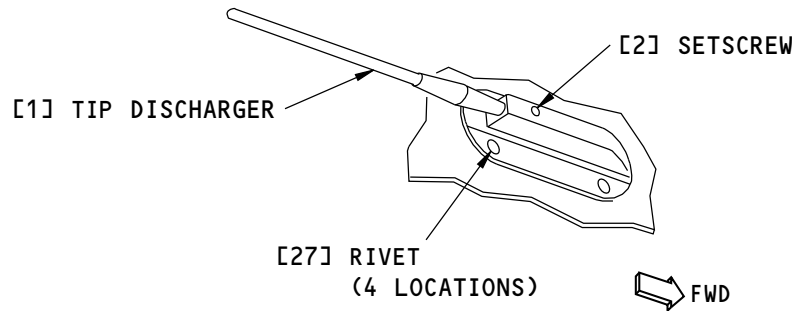
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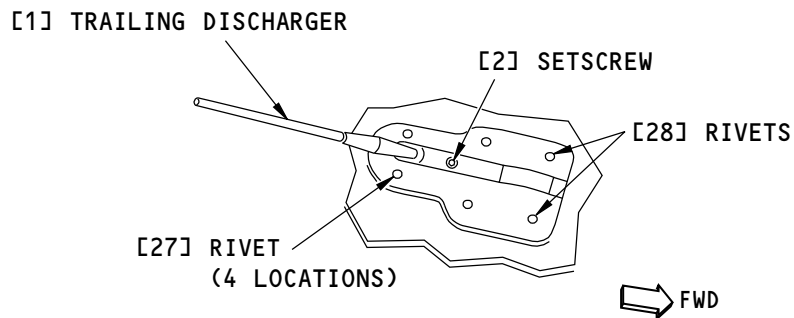
TIP DISCHARGER

(D)



TIP DISCHARGER

(E)



TRAILING DISCHARGER

(F)

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Static Discharger (with Rivets) Installation
Figure 202/23-61-01-990-806 (Sheet 2 of 3)

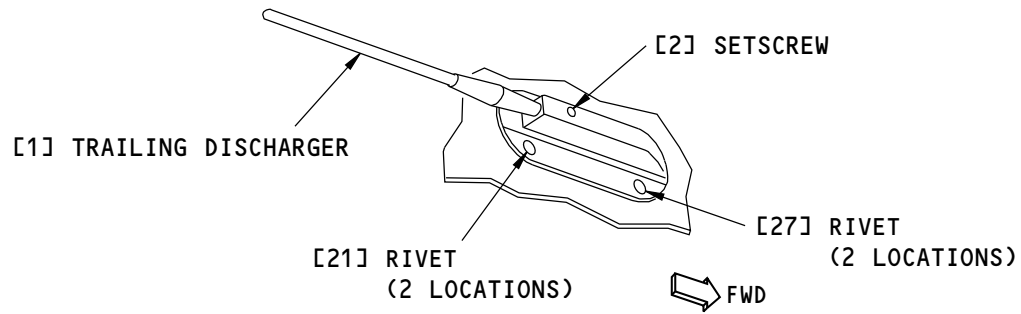
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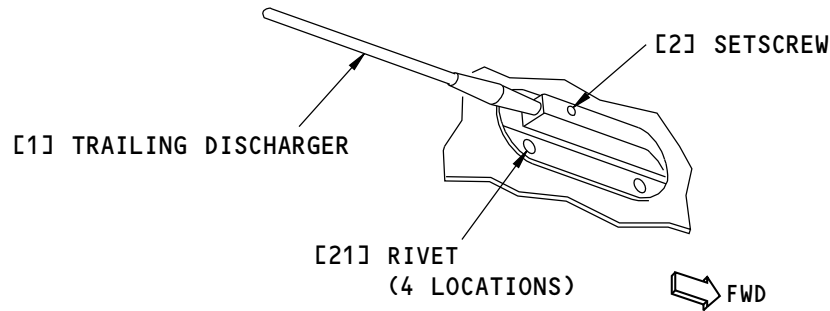
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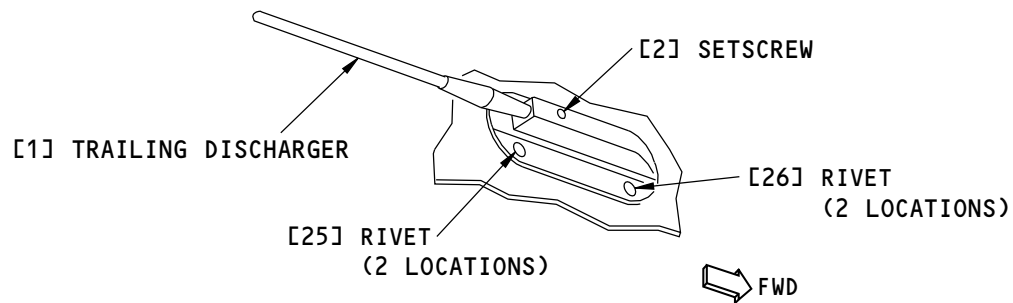
TRAILING DISCHARGER

G



TRAILING DISCHARGER

H



TRAILING DISCHARGER

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Static Discharger (with Rivets) Installation
Figure 202/23-61-01-990-806 (Sheet 3 of 3)

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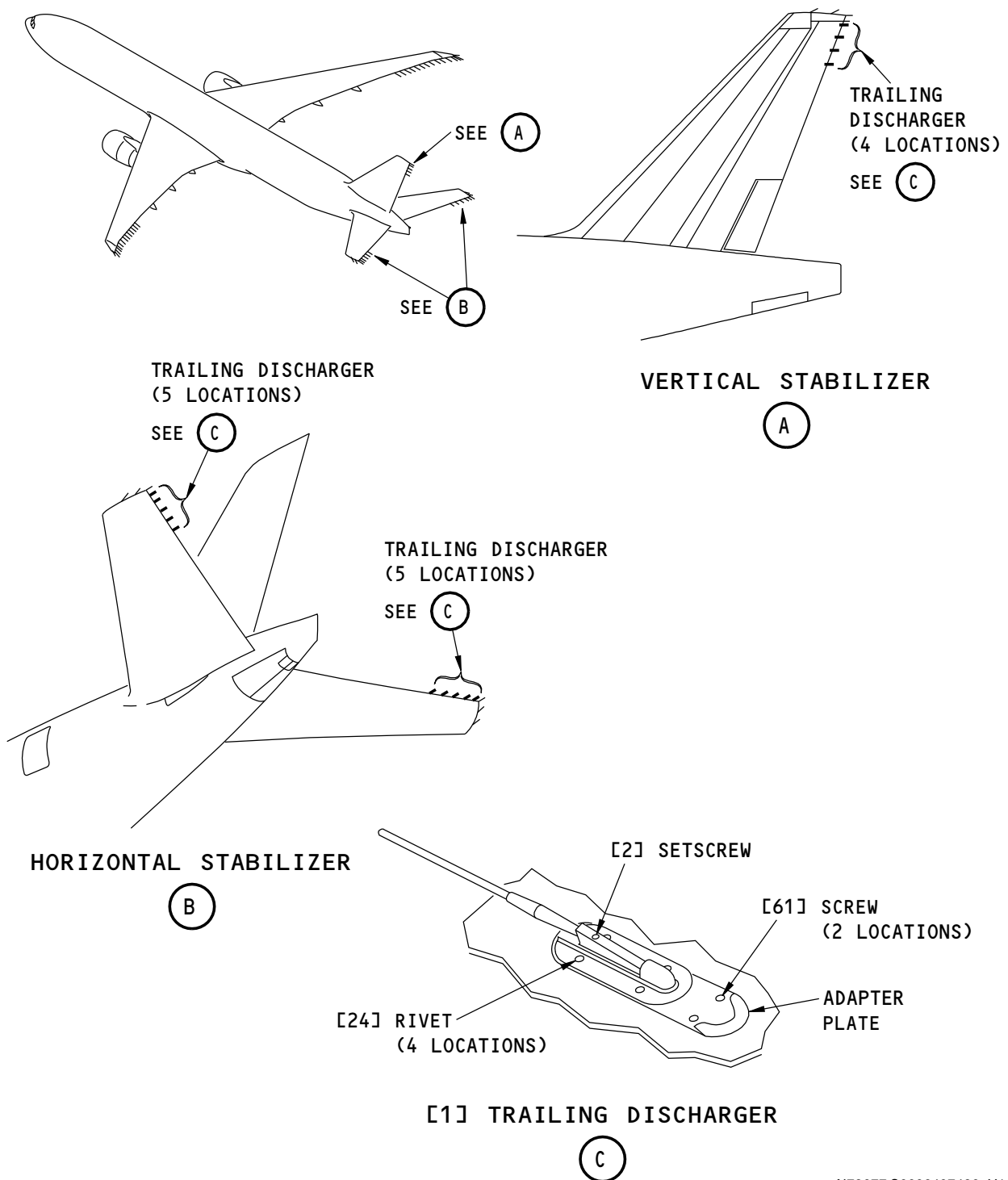
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Static Discharger (Adapter Plate with Rivets and Screws) Installation
Figure 203/23-61-01-990-804

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TASK 23-61-01-400-801

3. **Static Discharger Installation**

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
COM-6457	Meter - Insulation (Range: 1-1,000 VDC or equivalent, select meter per test requirements) Part #: 1863-9700 Supplier: 62015 Part #: 1864-9700 Supplier: 62015 Part #: 1865PLUS Supplier: 62015 Part #: 1865PLUSCE Supplier: 62015 Opt Part #: 1865-00-CE Supplier: 62015

C. Consumable Materials

Reference	Description	Specification
A00648	Compound - Retaining - Loctite 242	ASTM D5363 Grp 3 Cl 2 Gd 1 (SUPERSEDES MIL-S-46163)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Discharger	23-61-00-01-110	ARO ALL
		23-61-00-01-115	ARO ALL
		23-61-00-01-205	ARO ALL
		23-61-00-01-210	ARO ALL
		23-61-00-01-310	ARO ALL
		23-61-00-01-320	ARO ALL

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E. Prepare Procedure

SUBTASK 23-61-01-860-003



MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System (TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-020

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

F. Static Discharger Inspection and Test Before Installation

SUBTASK 23-61-01-210-001

- (1) Do a visual inspection of the static discharger assembly:
 - (a) Replace the static discharger assembly if you find it broken, damaged, or the metal pins are broken, blunt, or bent.

SUBTASK 23-61-01-910-001



OBEY THE PRECAUTIONS THAT FOLLOW WHEN YOU USE A MEGOHMMETER. IF YOU DO NOT OBEY THESE PRECAUTIONS, THEN IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (2) Use these precautions for possible fuel vapors when you use a megohmmeter:
 - (a) Use the insulation meter, COM-6457 or equivalent meter with a 500 VDC test voltage and a maximum 5 milliampere short circuit current.
 - (b) Do not use a megohmmeter at these locations:
 - 1) Area adjacent to or below a wing fuel tank vent, five foot (1.524 meters) diameter column, from vent to ground.
 - 2) Zero to 18 inches (457 mm) above the ground in the area around the airplane.
 - (c) Make sure that:
 - 1) Area is well ventilated.
 - 2) Metal workstands are grounded.
 - 3) Megohmmeter is plugged into a grounded receptacle.
 - 4) Megohmmeter is insulated from metal work stands.

SUBTASK 23-61-01-910-002

- (3) Move the static discharger to a safe location for the test with a megohmmeter.

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SUBTASK 23-61-01-700-001

- (4) FOR DAYTON-GRANGER AND OTHER STATIC DISCHARGERS NOT SUPPLIED BY CHELTON;

Use a insulation meter, COM-6457 to measure the resistance between the discharger tip and the discharger shank before you install the static discharger:

- (a) Set the megohmmeter to 500 VDC test voltage.
- (b) A good electrical bond between the end of the discharger tip and the megohmmeter is necessary for a correct measure of resistance.
- (c) To make a good connection with the end of the discharger tip, use a wet paper towel, cotton cloth or a sponge.
- (d) Put the wet towel on the end of the discharger tip.
- (e) Put the megohmmeter connectors on the base and on the wet towel at the end of the tip.
 - 1) Make sure that the measured resistance is between 6-100 megohms.
 - a) If the resistance measured is high, make sure that the meter lead and the end of the discharger tip touch the wet towel.

NOTE: If the measured value is too high, add water to the wet material and then measure the resistance value again.

SUBTASK 23-61-01-700-002

- (5) FOR CHELTON SUPPLIED STATIC DISCHARGERS ONLY;

Use a insulation meter, COM-6457 to measure the resistance between the discharger tip and the discharger base:

- (a) Set the megohmmeter to 500 VDC test voltage.
- (b) A good electrical bond between the end of the discharger tip and the megohmmeter is necessary for a correct measure of resistance.
- (c) To make a good connection with the end of the discharger tip, use a wet material.
- (d) Put the wet material on the END of the discharger tip.

NOTE: DO NOT WRAP the wet material around the discharger tip of Chelton static dischargers. This can give incorrect resistance values that cause unnecessary removals of serviceable static dischargers. Put the wet material between the tip of the discharger and the megohmmeter probe

- (e) Put one megohmmeter probe on the base and one probe on the edge of the wet material at the end of the discharger tip. See Alternate (Off Wing) Discharger Resistance Test Detail II Figure 205
 - 1) Make sure that the measured resistance is between 6-100 megohms.
 - a) If the resistance is more than 6-100 megohms, remove the wet material and put megohmmeter probe directly on the tip of the discharger core material.

NOTE: If the measured value is too high, add water to the wet material and then measure the resistance value again.

G. Installation Procedure

SUBTASK 23-61-01-420-014

- (1) Install the setscrew into the static discharger as follows:

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CAUTION

DO NOT USE THIS MATERIAL WITH PLASTIC-BASED MATERIALS. IT WILL NOT BOND CORRECTLY. THE STATIC DISCHARGER WILL COME OFF. DAMAGE TO EQUIPMENT WILL OCCUR.

- (a) FOR STATIC DISCHARGERS WITHOUT NY-LOC INSERT IN THE SETSCREW AND STATIC DISCHARGERS THAT ARE NOT PLASTIC-BASED MATERIAL;

Apply a thin layer of Loctite 242 compound, A00648 to the setscrew threads.

NOTE: Do not use Loctite with the plastic-based material static discharger or with NY-LOC insert in the setscrew. Loctite reacts to the plastic materials that will cause eventual failure of the bond and result in separation of the static discharger from the airplane.

- (b) Install the setscrew on the static discharger.
(c) Adjust the setscrew until it makes a continuous surface with the static discharger casting.

SUBTASK 23-61-01-420-001

- (2) Install the static discharger [1] into the discharger base.

- (a) Hold the discharger in the correct position and tighten the setscrew [2] to the value that follows:

- 1) FOR AIRPLANES WITH 2-14SC1, 2-16SC1, 740001, 740007, 80-1746-2, 80-1828-2 STATIC DISCHARGERS;

Torque the setscrew [2] to 6 in-lb (0.68 N·m) - 9 in-lb (1.02 N·m).

- 2) FOR AIRPLANES WITH 10-900-21, 10-900-25 STATIC DISCHARGERS;

Torque the setscrew [2] to 2.5 in-lb (0.28 N·m).

- (b) Make sure that the static discharger is attached on the static discharger base correctly.

H. Static Discharger Installation Test

SUBTASK 23-61-01-700-003



WARNING

MAKE SURE THAT THE BONDING METER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (1) STATIC DISCHARGERS WITH METALLIC SHANK;

Use a intrinsically safe approved bonding meter, COM-1550, to measure the resistance between the shank of the static discharger and the static discharger base.

- (a) Make sure that the resistance is not more than 1 ohm.

- (2) STATIC DISCHARGERS WITH PLASTIC SHANK;

Use a intrinsically safe approved bonding meter, COM-1550, to measure the resistance between the setscrew of the static discharger and the static discharger base.

- (a) Make sure that the resistance is not more than 1 ohm.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 23-61-01-860-021

- (1) If necessary, put the Main Hydraulic System back to its usual condition (TASK 29-11-00-860-807).

————— **END OF TASK** —————

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TASK 23-61-01-000-802

4. **Static Discharger Base Removal (Base Attached with Screws)**

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 311 Supplier: F6892 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 62176 Part #: TS1275-4 Supplier: 1DWR5
STD-1053	Knife - Putty, Broad Blade

C. Location Zones

Zone	Area
337	Left Horizontal Stabilizer Tip
347	Right Horizontal Stabilizer Tip
568	Left Wing Aileron
668	Right Wing Aileron

D. Procedure

SUBTASK 23-61-01-860-004



WARNING

MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

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(WARNING PRECEDES)



WARNING

MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System (TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-022

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-020-003

- (3) Remove the discharger base:
 - (a) Loosen the static discharger setscrew [2].
 - (b) Remove the discharger [1] from the base.
 - (c) Make a mark with a grease pencil larger than the area of the discharger base to be cleaned.
 - 1) Make sure that the line is parallel to the airflow.
 - (d) Remove the discharger base:
 - 1) Remove the weather/aerodynamic fillet seal around the edge of the discharger base with a sealant removal tool, COM-2481.
 - 2) Remove the screws [3] or screws [4] from the discharger base.
 - 3) Keep the screws for installation.



CAUTION

MAKE SURE YOU DO NOT CAUSE DAMAGE TO THE AIRPLANE SURFACES.

- 4) Put a broad blade putty knife, STD-1053 below the edge of the discharger base.
- 5) Remove the discharger base from the surface.

SUBTASK 23-61-01-860-023

- (4) If necessary, put the Main Hydraulic System back to its usual condition (TASK 29-11-00-860-807).

————— **END OF TASK** —————

TASK 23-61-01-000-803

5. Static Discharger Base Removal (Base Attached with Rivets)

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)
SRM 51-40-02	Fastener Installation and Removal

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B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 311 Supplier: F6892 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 62176 Part #: TS1275-4 Supplier: 1DWR5
STD-1053	Knife - Putty, Broad Blade

C. Location Zones

Zone	Area
327	Vertical Stabilizer Forward Tip
337	Left Horizontal Stabilizer Tip
347	Right Horizontal Stabilizer Tip
545	Raked Wing Tip, Left
645	Raked Wing Tip, Right

D. Procedure

SUBTASK 23-61-01-860-005



MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System (TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-024

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-020-004

- (3) Remove the discharger base:
 - (a) Loosen the static discharger setscrew [2].

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- (b) Remove the discharger [1] from the base.
- (c) Make a mark with a grease pencil larger than the area of the discharger base to be cleaned.
 - 1) Make sure that the line is parallel to the airflow.
- (d) Remove the discharger base.
 - 1) Remove the weather/aerodynamic fillet seal around the edge of the discharger base with a sealant removal tool, COM-2481.
 - 2) Remove the rivets [21] or rivets [22] or rivets [23] or rivets [25] or rivets [26] or rivet [27] or rivet [28] from the discharger base (SRM 51-40-02).



CAUTION

MAKE SURE YOU DO NOT CAUSE DAMAGE TO THE AIRPLANE SURFACES.

- 3) Put a broad blade putty knife, STD-1053 below the edge of the discharger base.
- 4) Remove the discharger base from the surface.

SUBTASK 23-61-01-860-025

- (4) If necessary, put the Main Hydraulic System back to its usual condition (TASK 29-11-00-860-807).

————— END OF TASK —————

TASK 23-61-01-000-804

6. Static Discharger Base Removal (Adapter Plate Assembly)

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)
SRM 51-40-02	Fastener Installation and Removal

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt.", which stands for Optional.

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Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 311 Supplier: F6892 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 62176 Part #: TS1275-4 Supplier: 1DWR5
STD-1053	Knife - Putty, Broad Blade

C. Location Zones

Zone	Area
545	Raked Wing Tip, Left
645	Raked Wing Tip, Right

D. Procedure

SUBTASK 23-61-01-860-006



MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System (TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-026

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-020-005

- (3) Remove the discharger base assembly:
 - (a) Loosen the static discharger setscrew [2].
 - (b) Remove the discharger [1] from the base.
 - (c) Make a mark with a grease pencil larger than the area of the adapter plate to be cleaned.
 - 1) Make sure that the line is parallel to the airflow.
 - (d) Remove the adapter plate assembly:
 - 1) Remove the weather/aerodynamic fillet seal around the edge of the adapter plate with a sealant removal tool, COM-2481.

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- 2) Remove the rivets [41] from the adapter plate (SRM 51-40-02).



MAKE SURE YOU DO NOT CAUSE DAMAGE TO THE AIRPLANE SURFACES.

- 3) Put a broad blade putty knife, STD-1053 below the edge of the adapter plate.
- 4) Remove the adapter plate from the surface.
- (e) Remove the discharger base from the adapter plate:
- 1) Remove the rivets [41] from the discharger base (SRM 51-40-02).
- 2) Remove the discharger base from the adapter plate.

SUBTASK 23-61-01-860-028

- (4) If necessary, put the Main Hydraulic System back to its usual condition (TASK 29-11-00-860-807).

— END OF TASK —

TASK 23-61-01-000-805

7. Static Discharger Base Removal (Adapter Plate Assembly)

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)
SRM 51-40-02	Fastener Installation and Removal

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 311 Supplier: F6892 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 62176 Part #: TS1275-4 Supplier: 1DWR5
STD-1053	Knife - Putty, Broad Blade

C. Location Zones

Zone	Area
325	Rudder

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Zone	Area
336	Left Elevator
346	Right Elevator

D. Procedure

SUBTASK 23-61-01-860-007



MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System TASK 29-11-00-860-807.

SUBTASK 23-61-01-860-029

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-020-006

- (3) Remove the discharger base:
 - (a) Loosen the static discharger setscrew [2].
 - (b) Remove the discharger [1] from the base.
 - (c) Make a mark with a grease pencil larger than the area of the adapter plate to be cleaned.
 - 1) Make sure that the line is parallel to the airflow.
 - (d) Remove the adapter plate assembly.
 - 1) Remove the weather/aerodynamic fillet seal around the edge of the adapter plate with a sealant removal tool, COM-2481.
 - 2) Remove the screws [61] from the adapter plate.
 - a) Keep the screws for installation.
 - 3) Remove the rivets [24] from the adapter plate (SRM 51-40-02).



MAKE SURE YOU DO NOT CAUSE DAMAGE TO THE AIRPLANE SURFACES.

- 4) Put a broad blade putty knife, STD-1053 below the edge of the adapter plate.
- (e) Remove the discharger base from the adapter plate:
 - 1) Remove the rivets [24] from the discharger base (SRM 51-40-02).
 - 2) Remove the discharger base from the adapter plate.

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SUBTASK 23-61-01-860-031

- (4) If necessary, put the Main Hydraulic System back to its usual condition
TASK 29-11-00-860-807.

————— END OF TASK —————

TASK 23-61-01-400-802

8. Static Discharger Base Installation (With Screws)

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
20-10-22-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
20-30-87-910-801	Final Cleaning of Composites Prior to Painting (Series 87) (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)
51-21-10-300-801	Decorative Exterior Paint System Repair (P/B 701)
51-31-01-390-804	Fillet Seal Application (P/B 201)
51-31-01-390-805	Fastener Seal Application (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 311 Supplier: F6892 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 62176 Part #: TS1275-4 Supplier: 1DWR5
STD-739	Respirator - Supplied Air
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

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C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00102	Abrasive - Aluminum Oxide Coated Cloth	
B00148	Solvent - Methyl Ethyl Ketone (MEK)	ASTM D740
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
B00666	Solvent - Methyl Propyl Ketone	BMS11-9
B01007	Solvent - Final Cleaning Of Composites Prior To Painting - Series 87	
B01026	Solvent - FCC-55	
B01054	Solvent - Methyl Ethyl Ketone and sec-Butyl Alcohol Blend - (MEK:secButyl Alcohol - 42:58 Percent)	BAC5750, ASTM D740/ASTM D1007
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Discharger	23-61-00-01-110	ARO ALL
		23-61-00-01-115	ARO ALL
		23-61-00-01-205	ARO ALL
		23-61-00-01-210	ARO ALL
		23-61-00-01-310	ARO ALL
		23-61-00-01-320	ARO ALL

E. Procedure

SUBTASK 23-61-01-860-008



MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System (TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-034

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-420-002

- (3) Prepare to install the static discharger base:
 - (a) Remove the sealant with a sealant removal tool, COM-2481.

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DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- (b) Clean the area to be bonded with solvent, B00184, FCC-55 solvent, B01026, solvent, B01054, solvent, B00148, or solvent, B00666.
 - 1) Wear a supplied air respirator, STD-739 to clean with solvent.
 - 2) Apply the solvent with a cotton wiper, G00034.
- (c) Remove the solvent with cotton wiper, G00034 before it dries.
 - 1) Make sure you do not touch the cleaned surface.
- (d) Rub the surface with the abrasive cloth, B00102 (600 grit) (TASK 20-10-22-120-801).
NOTE: Change the sandpaper frequently.
- (e) Make sure you have a smooth surface.
- (f) Make sure the surface is not shiny.
- (g) Clean with cotton wiper, G00034, do not use solvent.

SUBTASK 23-61-01-420-003

- (4) Install the static discharger base:
 - (a) Remove the metal discharger base from the plastic container.
 - 1) Do not touch the surface of the discharger base which touches the airplane surface.



INSTALL THE STATIC DISCHARGER BASE IN 5 MINUTES OR LESS AFTER IT HAS BEEN RUBBED WITH SANDPAPER. THIS IS TO PREVENT ALUMINUM OXIDATION.

- (b) Rub the static discharger base with abrasive cloth, B00102.
NOTE: Do not rub a plated base with sandpaper. A plated discharger base has a green dot for identification. Put on gloves to touch the bases.
- (c) Make sure you have a smooth surface.
NOTE: Change the sandpaper frequently.
- (d) Make sure the airplane surface is not shiny.
- (e) Attach the discharger base to the airplane surface.
- (f) Make sure you install the base in the same direction as the airflow.
- (g) Install the screws [3] or screws [4] that you removed on the removal procedure to attach the base.
- (h) Apply sealant, A00247 to the screw (TASK 51-31-01-390-805).
- (i) Apply sealant, A00247 to the edge of the discharger base (TASK 51-31-01-390-804).
- (j) Fair the sealant with a hardwood or plastic fillet smoothing spatula, STD-810.
- (k) Make sure no cracks are seen, this includes airplane surfaces that do not correctly align with the base.
- (l) Clean away unwanted sealant, A00247 with a cotton wiper, G00034 moist with Series 87 solvent, B01007 (TASK 20-30-87-910-801).

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SUBTASK 23-61-01-750-001

- (5) Examine the installation of the discharger base.
 - (a) Make sure there are no cracks in the sealant, A00247.
 - (b) If you find a crack, fill the crack with the sealant, A00247.

SUBTASK 23-61-01-760-001



WARNING

MAKE SURE THAT THE OHMMETER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (6) Use a intrinsically safe approved bonding meter, COM-1550 to measure the electrical bond between the discharger base and the discharger mounting surface.

NOTE: This resistance value is for a new installed static discharger base and a new bond. The resistance value is different for an in-service bond and discharger base.

 - (a) STATIC DISCHARGERS INSTALLED ON AILERONS;
Make sure the resistance is not more than 0.01 ohms.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs. Take the resistance measurement between the discharger base and the aluminum lightning strip on the aileron.
 - (b) STATIC DISCHARGERS INSTALLED ON HORIZONTAL STABILIZER TIPS;
Make sure the resistance is not more than 0.01 ohms.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

SUBTASK 23-61-01-410-001

- (7) To install the static discharger [1] into the discharger base, do this task: Static Discharger Installation, TASK 23-61-01-400-801.

SUBTASK 23-61-01-370-001

- (8) Paint the area around the discharger base (TASK 51-21-10-300-801).

SUBTASK 23-61-01-860-035

- (9) If necessary, put the Main Hydraulic System back to its usual condition (TASK 29-11-00-860-807).

————— END OF TASK —————

TASK 23-61-01-400-803

9. Static Discharger Base Installation (With Rivets)

(Figure 201 or Figure 202 or Figure 203)

NOTE: Also see Figure 204.

A. References

Reference	Title
20-10-22-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
20-30-87-910-801	Final Cleaning of Composites Prior to Painting (Series 87) (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)

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Reference	Title
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)
51-21-04-620-801	Alodine 600, 1000, 1200, and 1200S Coating Application (P/B 701)
51-21-10-300-801	Decorative Exterior Paint System Repair (P/B 701)
51-31-01-390-804	Fillet Seal Application (P/B 201)
51-31-01-390-805	Fastener Seal Application (P/B 201)
SRM 51-40-02	Fastener Installation and Removal

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt.", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 311 Supplier: F6892 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 62176 Part #: TS1275-4 Supplier: 1DWR5
STD-739	Respirator - Supplied Air
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00102	Abrasive - Aluminum Oxide Coated Cloth	
B00148	Solvent - Methyl Ethyl Ketone (MEK)	ASTM D740
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
B00666	Solvent - Methyl Propyl Ketone	BMS11-9
B01007	Solvent - Final Cleaning Of Composites Prior To Painting - Series 87	

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Reference	Description	Specification
B01026	Solvent - FCC-55	
B01054	Solvent - Methyl Ethyl Ketone and sec-Butyl Alcohol Blend - (MEK:secButyl Alcohol - 42:58 Percent)	BAC5750, ASTM D740/ASTM D1007
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A
G02042	Material - Aluminum Alloy 2024 Sheet	MS14361

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Discharger	23-61-00-01-110	ARO ALL
		23-61-00-01-115	ARO ALL
		23-61-00-01-205	ARO ALL
		23-61-00-01-210	ARO ALL
		23-61-00-01-310	ARO ALL
		23-61-00-01-320	ARO ALL

E. Procedure

SUBTASK 23-61-01-860-009



MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System (Main Hydraulic System and the Reservoir Depressurization, TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-032

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-420-005

- (3) Prepare to install the static discharger base:
 - (a) Remove the sealant with a sealant removal tool, COM-2481.

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DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- (b) Clean the area to be bonded with solvent, B00184, FCC-55 solvent, B01026, solvent, B01054, solvent, B00148, or solvent, B00666.
 - 1) Wear a supplied air respirator, STD-739 to clean with solvent.
 - 2) Apply the solvent with a cotton wiper, G00034.
- (c) Remove the solvent with cotton wiper, G00034 before it dries.
 - 1) Make sure you do not touch the cleaned surface.
- (d) Rub the surface with the abrasive cloth, B00102 (600 grit) (TASK 20-10-22-120-801).
NOTE: Change the sandpaper frequently.
- (e) Make sure you have a smooth surface.
- (f) Make sure the surface is not shiny.
- (g) Clean with cotton wiper, G00034, do not use solvent.
- (h) If the surface shows bare aluminum, do this task: Alodine 600, 1000, 1200, and 1200S Coating Application, TASK 51-21-04-620-801.
NOTE: This procedure has steps to clean and prepare the surface before you apply the alodine.

SUBTASK 23-61-01-420-006

- (4) Install the static discharger base:
 - (a) Remove the metal discharger base from the plastic container.
 - 1) Do not touch the surface of the discharger base which touches the airplane surface.
 - (b) Do the steps that follow (Figure 204):
 - 1) Sand the faying surface of the discharger base a minimum amount to match the contour of the conductive strip. Maximum material removal must not exceed 0.020 inches (0.50 millimeters).
 - 2) Make sure you have a smooth surface.
NOTE: Change the sandpaper frequently.
 - 3) If the surface of the base shows bare aluminum, do this task: Alodine 600, 1000, 1200, and 1200S Coating Application, TASK 51-21-04-620-801.
NOTE: This procedure has steps to clean and prepare the surface before you apply the alodine.
 - (c) Do the steps that follow (Figure 204):
 - 1) Rub the static discharger base with abrasive cloth, B00102.
NOTE: Do not rub a plated base with sandpaper. A plated discharger base has a green dot for identification. Put on gloves to touch the bases.
 - 2) If clearance between static discharger base and surface is 0.015 inches (0.38 millimeters) or greater, do the steps that follow:

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- a) Use aluminum sheet material, G02042 (bare aluminum 2024-T3 per QQ-A-250/5) as a shim to fill the clearance.
- b) Cut the shim to match static discharger base footprint + 0.06 to -0.00 inches (+1.5 to -0.0 millimeters).

 WARNING	DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- c) Clean contact areas of shim with solvent, B00184, FCC-55 solvent, B01026, solvent, B01054, solvent, B00148, or solvent, B00666.
- d) Apply alodine on bare aluminum surfaces of the shim. To apply the alodine: do this task: Alodine 600, 1000, 1200, and 1200S Coating Application, TASK 51-21-04-620-801.

NOTE: This procedure has steps to clean and prepare the surface before you apply the alodine.

- 3) Make sure you have a smooth surface.

NOTE: Change the sandpaper frequently.

- 4) If the surface of the base shows bare aluminum, do this task: Alodine 600, 1000, 1200, and 1200S Coating Application, TASK 51-21-04-620-801.

NOTE: This procedure has steps to clean and prepare the surface before you apply the alodine.

- (d) Make sure the airplane surface is not shiny.
- (e) Attach the discharger base and the shim (if applicable) to the airplane surface.
- (f) Make sure you install the base in the same direction as the airflow.
- (g) Install rivets [21] or rivets [22] or rivets [23] or rivets [25] or rivets [26] or rivet [27] or rivet [28] to attach the base (SRM 51-40-02).
- (h) Apply sealant, A00247 to the rivet (Fastener Seal Application, TASK 51-31-01-390-805).
- (i) Apply sealant, A00247 to the edge of the discharger base and the shim (if installed) (Fillet Seal Application, TASK 51-31-01-390-804).
- (j) Fair the sealant with a hardwood or plastic fillet smoothing spatula, STD-810.
- (k) Make sure no cracks are seen, this includes airplane surfaces that do not correctly align with the base.
- (l) Clean away unwanted sealant, A00247 with a cotton wiper, G00034 moist with Series 87 solvent, B01007 (Final Cleaning of Composites Prior to Painting (Series 87), TASK 20-30-87-910-801).

SUBTASK 23-61-01-750-002

- (5) Examine the installation of the discharger base.
 - (a) Make sure there are no cracks in the sealant, A00247.
 - (b) If you find a crack, fill the crack with the sealant, A00247.

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SUBTASK 23-61-01-760-004



WARNING

MAKE SURE THAT THE OHMMETER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (6) Use a intrinsically safe approved bonding meter, COM-1550 to measure the electrical bond between the discharger base and the discharger mounting surface.

NOTE: This resistance value is for a new installed static discharger base and a new bond. The resistance value is different for an in-service bond and discharger base.

- (a) STATIC DISCHARGER BASES INSTALLED ON WINGTIPS;

Make sure that the resistance is not more than the resistance values in Figure 204.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

- (b) STATIC DISCHARGER BASES INSTALLED ON HORIZONTAL STABILIZER TIPS;

Make sure the resistance is not more than 0.01 ohms.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

- (c) STATIC DISCHARGER BASES INSTALLED ON VERTICAL STABILIZER;

Make sure the resistance is not more than 0.01 ohms.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

SUBTASK 23-61-01-410-002

- (7) To install the static discharger [1] into the discharger base, do this task: Static Discharger Installation, TASK 23-61-01-400-801.

SUBTASK 23-61-01-370-002

- (8) Paint the area around the discharger base (Decorative Exterior Paint System Repair, TASK 51-21-10-300-801).

SUBTASK 23-61-01-860-033

- (9) If necessary, put the Main Hydraulic System back to its usual condition (Main Hydraulic System and the Reservoir Depressurization, TASK 29-11-00-860-807).

————— END OF TASK —————

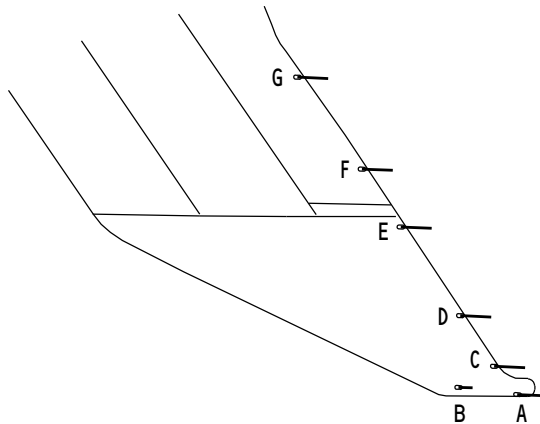
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STATIC DISCHARGER LOCATIONS
(LEFT WINGTIP IS SHOWN,
RIGHT WINGTIP IS EQUIVALENT)

LOCATION	RESISTANCE VALUE (Ohms) FOR NEW DISCHARGER BASE 1	RESISTANCE VALUE (Ohms) FOR IN-SERVICE DISCHARGER BASE (METHOD 1) 1	RESISTANCE VALUE (Ohms) FOR IN-SERVICE DISCHARGER BASE (METHOD 2) 2
A	0.01	0.05	0.05
B	0.01	0.05	0.05
C	0.0005	0.0025	0.0025
D	0.0005	0.0025	0.0025
E	0.0005	0.0025	0.0025
F	0.0005	0.0025	0.0025
G	0.0005	0.0025	0.0025

TABLE A

- 1 MAXIMUM RESISTANCE BETWEEN DISCHARGER
BASE AND DISCHARGER MOUNTING SURFACE
- 2 MAXIMUM RESISTANCE BETWEEN TWO ADJACENT
DISCHARGER BASES

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Resistance Values for Static Dischargers Installed on Raked WingTip
Figure 204/23-61-01-990-808

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TASK 23-61-01-400-804

10. Static Discharger Base Installation (Adapter Plate Assembly With Rivets)

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
20-10-22-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
20-30-87-910-801	Final Cleaning of Composites Prior to Painting (Series 87) (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)
51-21-10-300-801	Decorative Exterior Paint System Repair (P/B 701)
51-31-01-390-804	Fillet Seal Application (P/B 201)
51-31-01-390-805	Fastener Seal Application (P/B 201)
SRM 51-40-02	Fastener Installation and Removal

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 311 Supplier: F6892 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 62176 Part #: TS1275-4 Supplier: 1DWR5
STD-739	Respirator - Supplied Air
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00102	Abrasive - Aluminum Oxide Coated Cloth	

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Reference	Description	Specification
B00148	Solvent - Methyl Ethyl Ketone (MEK)	ASTM D740
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
B00666	Solvent - Methyl Propyl Ketone	BMS11-9
B01007	Solvent - Final Cleaning Of Composites Prior To Painting - Series 87	
B01026	Solvent - FCC-55	
B01054	Solvent - Methyl Ethyl Ketone and sec-Butyl Alcohol Blend - (MEK:secButyl Alcohol - 42:58 Percent)	BAC5750, ASTM D740/ASTM D1007
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Discharger	23-61-00-01-110	ARO ALL
		23-61-00-01-115	ARO ALL
		23-61-00-01-205	ARO ALL
		23-61-00-01-210	ARO ALL
		23-61-00-01-310	ARO ALL
		23-61-00-01-320	ARO ALL

E. Procedure

SUBTASK 23-61-01-860-010



WARNING MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



WARNING MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System (TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-027

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-420-007

- (3) Prepare to install the static discharger base:
 - (a) Remove the sealant with a sealant removal tool, COM-2481.

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DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- (b) Clean the adapter plate to be bonded with solvent, B00184, FCC-55 solvent, B01026, solvent, B01054, solvent, B00148, or solvent, B00666.
 - 1) Wear a supplied air respirator, STD-739 to clean with solvent.
 - 2) Apply the solvent with a cotton wiper, G00034.
- (c) Remove the solvent with cotton wiper, G00034 before it dries.
 - 1) Make sure you do not touch the cleaned surface.
- (d) Rub the adapter plate surface with the abrasive cloth, B00102 (600 grit) (TASK 20-10-22-120-801).

NOTE: Change the sandpaper frequently.
- (e) Make sure you have a smooth surface.
- (f) Make sure the surface is not shiny.
- (g) Clean with cotton wiper, G00034, do not use solvent.

SUBTASK 23-61-01-420-008

- (4) Install the static discharger base:
 - (a) Remove the metal discharger base from the plastic container.
 - 1) Do not touch the surface of the discharger base which touches the adapter plate.



INSTALL THE STATIC DISCHARGER BASE IN 5 MINUTES OR LESS AFTER IT HAS BEEN RUBBED WITH SANDPAPER. THIS IS TO PREVENT ALUMINUM OXIDATION.

- (b) Rub the discharger base with abrasive cloth, B00102.

NOTE: Do not rub a plated base with sandpaper. A plated discharger base has a green dot for identification. Put on gloves to touch the bases.
- (c) Make sure you have a smooth surface.

NOTE: Change the sandpaper frequently.
- (d) Make sure the adapter plate is not shiny.
- (e) Attach the discharger base to the adapter plate.
- (f) Install a rivets [41] to attach the base to the adapter plate (SRM 51-40-02).
- (g) Apply sealant, A00247 to the rivet (TASK 51-31-01-390-805).
- (h) Apply sealant, A00247 to the edge of the discharger base (TASK 51-31-01-390-804).
- (i) Fair the sealant with a hardwood or plastic fillet smoothing spatula, STD-810.
- (j) Make sure no cracks are seen.
- (k) Clean away unwanted sealant, A00247 with a cotton wiper, G00034 moist with solvent, B00184, FCC-55 solvent, B01026, solvent, B01054, solvent, B00148, or solvent, B00666.

SUBTASK 23-61-01-420-009

- (5) Install the discharger adapter plate assembly:

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- (a) Rub the airplane surface with abrasive cloth, B00102.
- (b) Make sure you have a smooth surface.
NOTE: Change the sandpaper frequently.
- (c) Make sure the airplane surface is not shiny.
- (d) Attach the adapter plate assembly to the airplane surface.
- (e) Make sure you install the adapter plate assembly in the same direction as the airflow.
- (f) Install a rivets [41] to attach the adapter plate assembly (SRM 51-40-02).
- (g) Apply sealant, A00247 to the rivet (TASK 51-31-01-390-805).
- (h) Apply sealant, A00247 to the edge of the adapter plate (TASK 51-31-01-390-804).
- (i) Fair the sealant with a hardwood or plastic fillet smoothing spatula, STD-810.
- (j) Make sure no cracks are seen, this includes airplane surfaces that do not correctly align with the adapter plate.
- (k) Clean away unwanted sealant, A00247 with a cotton wiper, G00034 moist with Series 87 solvent, B01007 (TASK 20-30-87-910-801).

SUBTASK 23-61-01-750-003

- (6) Examine the installation of the adapter plate assembly.
 - (a) Make sure there are no cracks in the sealant, A00247.
 - (b) If you find a crack, fill the crack with the sealant, A00247.

SUBTASK 23-61-01-760-005

 WARNING	MAKE SURE THAT THE OHMMETER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (7) Use a intrinsically safe approved bonding meter, COM-1550 to measure the electrical bond between the discharger base and the discharger mounting surface.
NOTE: This resistance value is for a new installed static discharger base and a new bond. The resistance value is different for an in-service bond and discharger base.
 - (a) STATIC DISCHARGERS INSTALLED ON WINGTIP TRAILING EDGE;
Make sure the resistance is not more than 0.01 ohms.
NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

SUBTASK 23-61-01-410-003

- (8) To install the static discharger [1] into the discharger base, do this task: Static Discharger Installation, TASK 23-61-01-400-801.

SUBTASK 23-61-01-370-003

- (9) Paint the area around the discharger base (TASK 51-21-10-300-801).

SUBTASK 23-61-01-860-030

- (10) If necessary, put the Main Hydraulic System back to its usual condition (TASK 29-11-00-860-807).

————— **END OF TASK** —————

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TASK 23-61-01-400-805

11. Static Discharger Base Installation (Adapter Plate Assembly With Rivets and Screws)

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
20-10-22-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
20-30-87-910-801	Final Cleaning of Composites Prior to Painting (Series 87) (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)
51-21-10-300-801	Decorative Exterior Paint System Repair (P/B 701)
51-31-01-390-804	Fillet Seal Application (P/B 201)
51-31-01-390-805	Fastener Seal Application (P/B 201)
SRM 51-40-02	Fastener Installation and Removal

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 311 Supplier: F6892 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 62176 Part #: TS1275-4 Supplier: 1DWR5
STD-739	Respirator - Supplied Air
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00102	Abrasive - Aluminum Oxide Coated Cloth	

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Reference	Description	Specification
B00148	Solvent - Methyl Ethyl Ketone (MEK)	ASTM D740
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
B00666	Solvent - Methyl Propyl Ketone	BMS11-9
B01007	Solvent - Final Cleaning Of Composites Prior To Painting - Series 87	
B01026	Solvent - FCC-55	
B01054	Solvent - Methyl Ethyl Ketone and sec-Butyl Alcohol Blend - (MEK:secButyl Alcohol - 42:58 Percent)	BAC5750, ASTM D740/ASTM D1007
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Discharger	23-61-00-01-110	ARO ALL
		23-61-00-01-115	ARO ALL
		23-61-00-01-205	ARO ALL
		23-61-00-01-210	ARO ALL
		23-61-00-01-310	ARO ALL
		23-61-00-01-320	ARO ALL

E. Procedure

SUBTASK 23-61-01-860-011



WARNING MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



WARNING MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System (TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-018

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-420-010

- (3) Prepare to install the static discharger base:
 - (a) Remove the sealant with a sealant removal tool, COM-2481.

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DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- (b) Clean the adapter plate to be bonded with solvent, B00184, FCC-55 solvent, B01026, solvent, B01054, solvent, B00148, or solvent, B00666.
 - 1) Wear a supplied air respirator, STD-739 to clean with solvent.
 - 2) Apply the solvent with a cotton wiper, G00034.
- (c) Remove the solvent with cotton wiper, G00034 before it dries.
 - 1) Make sure you do not touch the cleaned surface.
- (d) Rub the adapter plate surface with the abrasive cloth, B00102 (600 grit) (TASK 20-10-22-120-801).

NOTE: Change the sandpaper frequently.
- (e) Make sure you have a smooth surface.
- (f) Make sure the surface is not shiny.
- (g) Clean with cotton wiper, G00034, do not use solvent.

SUBTASK 23-61-01-420-011

- (4) Install the static discharger base:
 - (a) Remove the metal discharger base from the plastic container.
 - 1) Do not touch the surface of the discharger base which touches the adapter plate.



INSTALL THE STATIC DISCHARGER BASE IN 5 MINUTES OR LESS AFTER IT HAS BEEN RUBBED WITH SANDPAPER. THIS IS TO PREVENT ALUMINUM OXIDATION.

- (b) Rub the discharger base with abrasive cloth, B00102.

NOTE: Do not rub a plated base with sandpaper. A plated discharger base has a green dot for identification. Put on gloves to touch the bases.
- (c) Make sure you have a smooth surface.

NOTE: Change the sandpaper frequently.
- (d) Make sure the adapter plate is not shiny.
- (e) Attach the discharger base to the adapter plate.
- (f) Install rivets [24] to attach the base to the adapter plate (SRM 51-40-02).
- (g) Apply sealant, A00247 to the rivet (TASK 51-31-01-390-805).
- (h) Apply sealant, A00247 to the edge of the discharger base (TASK 51-31-01-390-804).
- (i) Fair the sealant with a hardwood or plastic fillet smoothing spatula, STD-810.
- (j) Make sure no cracks are seen.
- (k) Clean away unwanted sealant, A00247 with a cotton wiper, G00034 moist with solvent, B00184, FCC-55 solvent, B01026, solvent, B01054, solvent, B00148, or solvent, B01054.

SUBTASK 23-61-01-420-012

- (5) Install the adapter plate assembly:

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- (a) Rub the airplane surface with abrasive cloth, B00102.
- (b) Make sure you have a smooth surface.
NOTE: Change the sandpaper frequently.
- (c) Make sure the airplane surface is not shiny.
- (d) Attach the adapter plate assembly to the airplane surface.
- (e) Make sure you install the adapter plate assembly in the same direction as the airflow.
- (f) Install the screws [61] to attach the adapter plate assembly.
- (g) Install the rivets [24] to attach the adapter plate assembly (SRM 51-40-02).
- (h) Apply sealant, A00247 to the rivets and screws (TASK 51-31-01-390-805).
- (i) Apply sealant, A00247 to the edge of the adapter plate (TASK 51-31-01-390-804).
- (j) Fair the sealant with a hardwood or plastic fillet smoothing spatula, STD-810.
- (k) Make sure no cracks are seen, this includes airplane surfaces that do not correctly align with the adapter plate.
- (l) Clean away unwanted sealant, A00247 with a cotton wiper, G00034 moist with Series 87 solvent, B01007 (TASK 20-30-87-910-801).

SUBTASK 23-61-01-750-004

- (6) Examine the installation of the discharger base.
 - (a) Make sure there are no cracks in the sealant, A00247.
 - (b) If you find a crack, fill the crack with the sealant, A00247.

SUBTASK 23-61-01-760-006



MAKE SURE THAT THE OHMMETER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (7) Use a intrinsically safe approved bonding meter, COM-1550 to measure the electrical bond between the discharger base and the discharger mounting surface.
NOTE: This resistance value is for a new installed static discharger base and a new bond. The resistance value is different for an in-service bond and discharger base.
 - (a) STATIC DISCHARGERS INSTALLED ON THE ELEVATOR TRAILING EDGE;
Make sure the resistance is not more than 0.10 ohms.
NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.
 - (b) STATIC DISCHARGERS INSTALLED ON THE RUDDER TRAILING EDGE;
Make sure the resistance is not more than 0.01 ohms.
NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

SUBTASK 23-61-01-410-004

- (8) To install the static discharger [1] into the discharger base, do this task: Static Discharger Installation, TASK 23-61-01-400-801.

SUBTASK 23-61-01-370-004

- (9) Paint the area around the discharger base (TASK 51-21-10-300-801).

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SUBTASK 23-61-01-860-019

- (10) If necessary, put the Main Hydraulic System back to its usual condition (TASK 29-11-00-860-807).

————— END OF TASK —————

TASK 23-61-01-200-801

12. Static Discharger Mounting Base Inspection/Check

(Figure 201 or Figure 202 or Figure 203)

NOTE: Also see Figure 204.

A. References

Reference	Title
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)
51-21-10-300-801	Decorative Exterior Paint System Repair (P/B 701)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17

C. Procedure

SUBTASK 23-61-01-860-012



MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System (Main Hydraulic System and the Reservoir Depressurization, TASK 29-11-00-860-807).

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SUBTASK 23-61-01-860-016

(2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-760-007



WARNING

MAKE SURE THAT THE OHMMETER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

(3) Use an intrinsically safe approved bonding meter, COM-1550 to measure the bond between the static discharger base and the static discharger base mounting surface.

NOTE: This resistance value is for a discharger that is in operation. There is a different value for a new installed discharger base.

SUBTASK 23-61-01-760-002

(4) Use method 1 or method 2 to measure the bond resistance for the static discharger bases.

(a) Method 1 - Measure the bond resistance from the static discharger base to its mounting surface.

NOTE: It may be necessary to scratch the paint on the mounting surface to get a good connection.

1) STATIC DISCHARGER BASES INSTALLED ON THE WINGTIPS;

Make sure that the resistance is not more than the resistance values in Figure 204.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

2) STATIC DISCHARGER BASES INSTALLED ON THE HORIZONTAL AND VERTICAL STABILIZER TIPS AND RUDDER;

Make sure that the resistance is not more than 0.05 ohms.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

3) STATIC DISCHARGER BASES INSTALLED ON THE AILERONS, AND ELEVATORS;

Make sure that the resistance is not more than 0.50 ohms.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

4) If you scratched the paint, then repair the surface (Decorative Exterior Paint System Repair, TASK 51-21-10-300-801).

(b) Method 2 - Measure the bond resistance between two adjacent static discharger bases.

1) STATIC DISCHARGER BASES INSTALLED ON THE WINGTIPS;

Make sure that the resistance is not more than the resistance values in Figure 204.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

2) STATIC DISCHARGER BASES INSTALLED ON THE HORIZONTAL AND VERTICAL STABILIZER TIPS, AND RUDDER;

Make sure that the resistance is not more than 0.05 ohms.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

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- 3) STATIC DISCHARGER BASES INSTALLED ON THE AILERONS, AND ELEVATORS;

Make sure that the resistance is not more than 0.50 ohms.

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs.

- 4) If the resistance shows more than the resistance values in Method 2, then do the procedure in Method 1 to find the defective static discharger base.

SUBTASK 23-61-01-960-001

- (5) For a static discharger base that shows more than the resistance values in Method 1, replace the static discharger base (STATIC DISCHARGERS - MAINTENANCE PRACTICES, 23-61-01/201).

SUBTASK 23-61-01-860-017

- (6) If necessary, put the Main Hydraulic System back to its usual condition (Main Hydraulic System and the Reservoir Depressurization, TASK 29-11-00-860-807).

————— **END OF TASK** —————

TASK 23-61-01-200-802

13. Static Discharger Inspection/Check

(Figure 201 or Figure 202 or Figure 203)

A. References

Reference	Title
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)
SWPM 20-20-00	Standard Wiring Practices Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-6457	Meter - Insulation (Range: 1-1,000 VDC or equivalent, select meter per test requirements) Part #: 1863-9700 Supplier: 62015 Part #: 1864-9700 Supplier: 62015 Part #: 1865PLUS Supplier: 62015 Part #: 1865PLUSCE Supplier: 62015 Opt Part #: 1865-00-CE Supplier: 62015

C. Procedure

SUBTASK 23-61-01-860-013



MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

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(WARNING PRECEDES)



WARNING

MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic System (TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-037

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-420-004

- (3) Make sure the static discharger is attached correctly.

SUBTASK 23-61-01-280-001

- (4) Make sure there is no lightning damage to the discharger.
 - (a) Look for holes or burned marks on the metal discharger retainer.
 - (b) Replace the discharger if it is necessary.

SUBTASK 23-61-01-280-002

- (5) Do a check of the discharger rods for a broken, a bent, or a blunt tungsten end.

NOTE: Discharger pins that are damaged cause radio noise to increase (static interference).

 - (a) Replace a broken discharger.
 - (b) Make sure there are no bent pins.

NOTE: If you cannot repair the pins, replace the discharger.

D. Discharger Resistance Test

SUBTASK 23-61-01-760-008

- (1) If you must do a resistance check for a static discharger that is in a five foot diameter area around a fuel tank vent, then do the Alternative Discharger Resistance Test.

SUBTASK 23-61-01-860-001



WARNING

OBEY THE PRECAUTIONS THAT FOLLOW WHEN YOU USE A MEGOHMMETER. IF YOU DO NOT OBEY THESE PRECAUTIONS, THEN IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (2) Use these precautions for possible fuel vapors when you use a megohmmeter to measure the discharger resistance.
 - (a) Use a insulation meter, COM-6457 or equivalent meter with a 500 VDC test voltage and a maximum 5 milliampere short circuit current.
 - (b) Make sure that:
 - 1) Area is well ventilated.
 - 2) Metal workstands are grounded.
 - 3) Megohmmeter is plugged into a grounded receptacle.
 - 4) Megohmmeter is insulated from metal work stand.

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SUBTASK 23-61-01-760-009

(3) FOR DAYTON-GRANGER AND OTHER STATIC DISCHARGERS NOT SUPPLIED BY CHELTON:

Use a megohmmeter to measure the resistance between the discharger tip and the discharger base:

- (a) A good electrical bond between the end of the discharger tip and the megohmmeter is necessary for a correct measure of resistance.
- (b) To make a good connection with the end of the discharger tip, use a wet paper towel, cotton cloth or a sponge.
- (c) Put the wet towel on the end of the discharger tip.
- (d) Put the megohmmeter probes on the base and on the wet towel at the end of the tip.
 - 1) Make sure that the measured resistance is between 6-100 megohms.
 - 2) If the resistance measured is high, make sure that the meter lead and the end of the discharger tip touch the wet towel.
- (e) Add more water if it is necessary and measure again.
 - 1) Use the lowest measured value.

SUBTASK 23-61-01-760-010

(4) FOR CHELTON SUPPLIED STATIC DISCHARGERS ONLY:

Use a megohmmeter to measure the resistance between the discharger tip and the discharger base:

- (a) A good electrical bond between the end of the discharger tip and the megohmmeter is necessary for a correct measure of resistance.
- (b) To make a good connection with the end of the discharger tip, use a wet material.
- (c) Put the wet material on the END of the discharger tip.

NOTE: DO NOT WRAP the wet material around the discharger tip of Chelton static dischargers. This can give incorrect resistance values that cause unnecessary removals of serviceable static dischargers. Put the wet material between the tip of the discharger and the megohmmeter probe

- (d) Put one megohmmeter probe on the base and one probe on the wet material at the end of the discharger tip. See On Wing Discharger Resistance Test Detail I Figure 205
 - 1) Make sure that the measured resistance is between 6-100 megohms.
 - 2) If the resistance is more than 6-100 megohms, remove the wet material and put megohmmeter probe directly on the tip of the discharger core material.
- (e) Add more water if it is necessary and measure again.
 - 1) Use the lowest measured value.

SUBTASK 23-61-01-960-002

(5) For a discharger that does not meet the resistance values,

These are the tasks: Static Discharger Removal, TASK 23-61-01-000-801, Static Discharger Installation, TASK 23-61-01-400-801.

E. Alternative Discharger Resistance Test

NOTE: This test is for a static discharger that is near a fuel tank vent, but can also be used for static dischargers at other locations as well.

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SUBTASK 23-61-01-020-007

- (1) Do this task: Static Discharger Removal, TASK 23-61-01-000-801.

SUBTASK 23-61-01-860-038

- (2) Move the discharger to a safe location to use the megohmmeter.

SUBTASK 23-61-01-760-011

- (3) FOR DAYTON-GRANGER AND OTHER STATIC DISCHARGERS NOT SUPPLIED BY CHELTON:

Use a megohmmeter to measure the resistance between the discharger tip and the discharger base:

- (a) A good electrical bond between the end of the discharger tip and the megohmmeter is necessary for a correct measure of resistance.
- (b) To make a good connection with the end of the discharger tip, use a wet paper towel, cotton cloth or a sponge.
- (c) Put the wet towel on the end of the discharger tip.
- (d) Put the megohmmeter connectors on the base and on the wet towel at the end of the tip.
 - 1) Make sure that the measured resistance is between 6-100 megohms.
 - 2) If the resistance measured is high, make sure that the meter lead and the end of the discharger tip touch the wet towel.
- (e) Add more water if it is necessary and measure again.
 - 1) Use the lowest measured value.

SUBTASK 23-61-01-760-012

- (4) FOR CHELTON SUPPLIED STATIC DISCHARGERS ONLY:

Use a megohmmeter to measure the resistance between the discharger tip and the discharger base:

- (a) A good electrical bond between the end of the discharger tip and the megohmmeter is necessary for a correct measure of resistance.
- (b) To make a good connection with the end of the discharger tip, use a wet material.
- (c) Put the wet material on the END of the discharger tip.

NOTE: DO NOT WRAP the wet material around the discharger tip of Chelton static dischargers. This can give incorrect resistance values that cause unnecessary removals of serviceable static dischargers. Put the wet material between the tip of the discharger and the megohmmeter probe

- (d) Put one megohmmeter probe on the base and one probe on the edge of the wet material at the end of the discharger tip. See Alternate (Off Wing) Discharger Resistance Test Detail II Figure 205
 - 1) Make sure that the measured resistance is between 6-100 megohms.
 - 2) If the resistance is more than 6-100 megohms, remove the wet material and put megohmmeter probe directly on the tip of the discharger core material.
- (e) Add more water if it is necessary and measure again.
 - 1) Use the lowest measured value.

SUBTASK 23-61-01-420-013

- (5) Do this task: Static Discharger Installation, TASK 23-61-01-400-801.

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SUBTASK 23-61-01-760-013



WARNING

MAKE SURE THAT THE BONDING METER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (6) Use a bonding meter (SWPM 20-20-00) to measure the resistance between the discharger shank and the discharger base.
 - (a) Make sure that the resistance is not more than 1 ohm.

SUBTASK 23-61-01-960-003

- (7) For a discharger that does not meet the resistance values,
These are the tasks: Static Discharger Removal, TASK 23-61-01-000-801, Static Discharger Installation, TASK 23-61-01-400-801.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-61-01-860-039

- (1) If necessary, put the Main Hydraulic System back to its usual condition TASK 29-11-00-860-807.

————— END OF TASK —————

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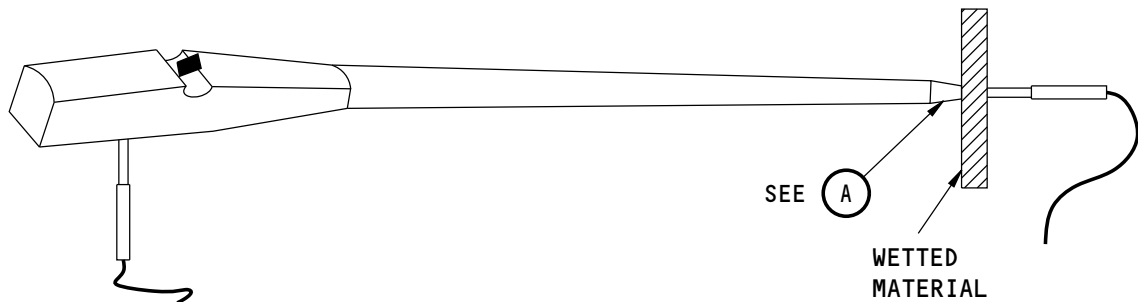
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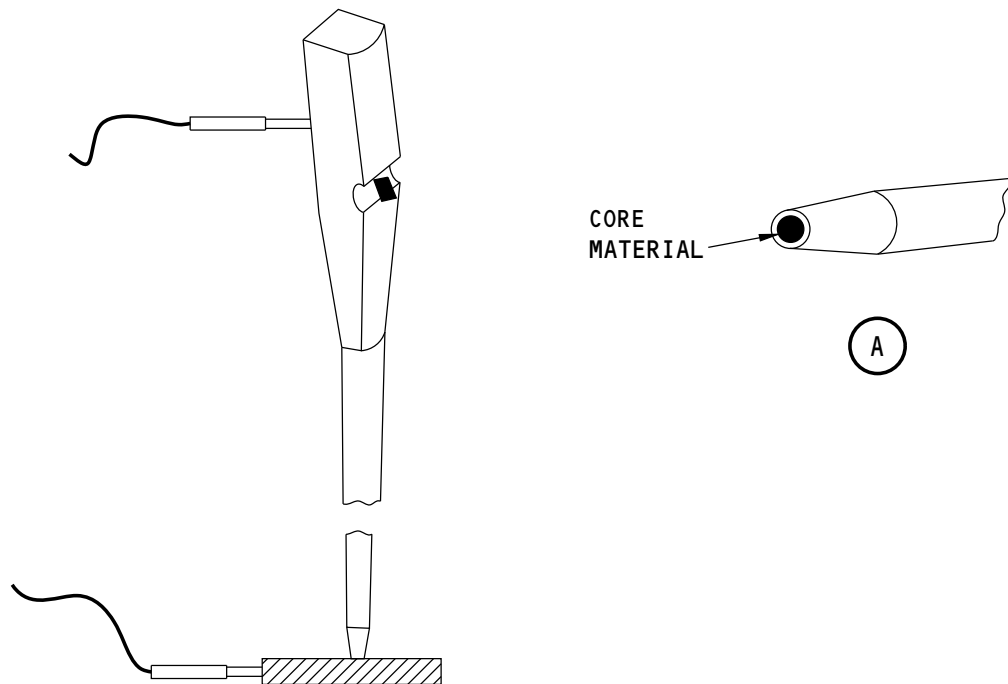
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ON WING DISCHARGER
RESISTANCE TEST



ALTERNATE (OFF WING) DISCHARGER
RESISTANCE TEST

NOTE: TEST PROCEDURES FOR THE TRAILING EDGE
AND WING TIP DISCHARGERS ARE THE SAME.

U81001 S0000215214_V1

Chelton Static Dischargers Resistance Test
Figure 205/23-61-01-990-809

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TASK 23-61-01-210-801

14. General Visual Inspection of the Static Dischargers

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
24-22-00-860-806	Remove Electrical Power (P/B 201)
29-11-00-860-807	Main Hydraulic System and the Reservoir Depressurization (P/B 201)

B. Location Zones

Zone	Area
325	Rudder
327	Vertical Stabilizer Forward Tip
336	Left Elevator
337	Left Horizontal Stabilizer Tip
346	Right Elevator
347	Right Horizontal Stabilizer Tip
545	Raked Wing Tip, Left
568	Left Wing Aileron
645	Raked Wing Tip, Right
668	Right Wing Aileron

C. Job Set-Up

SUBTASK 23-61-01-860-048



WARNING

MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACES CAN MOVE. THIS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.



WARNING

MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE ELEVATOR SURFACES BEFORE YOU REMOVE HYDRAULIC PRESSURE TO THE PCUS. WHEN YOU REMOVE HYDRAULIC PRESSURE, THE SURFACE WILL LOWER SLOWLY. ACCIDENTAL MOVEMENT OF ELEVATOR SURFACES CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Depressurize the Main Hydraulic system (TASK 29-11-00-860-807).

SUBTASK 23-61-01-860-049

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-806.

SUBTASK 23-61-01-860-050

- (3) Gain access to the wing trailing edge static dischargers.

SUBTASK 23-61-01-860-051

- (4) Gain access to the empennage trailing edge static dischargers.

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D. Procedure

SUBTASK 23-61-01-210-004

- (1) Do a general visual inspection of the static dischargers (Figure 206 or Figure 207 or Figure 208).

E. Job Close-Up

SUBTASK 23-61-01-860-052

- (1) If necessary, put the Main Hydraulic System back to its usual condition (TASK 29-11-00-860-807).

———— **END OF TASK** ————

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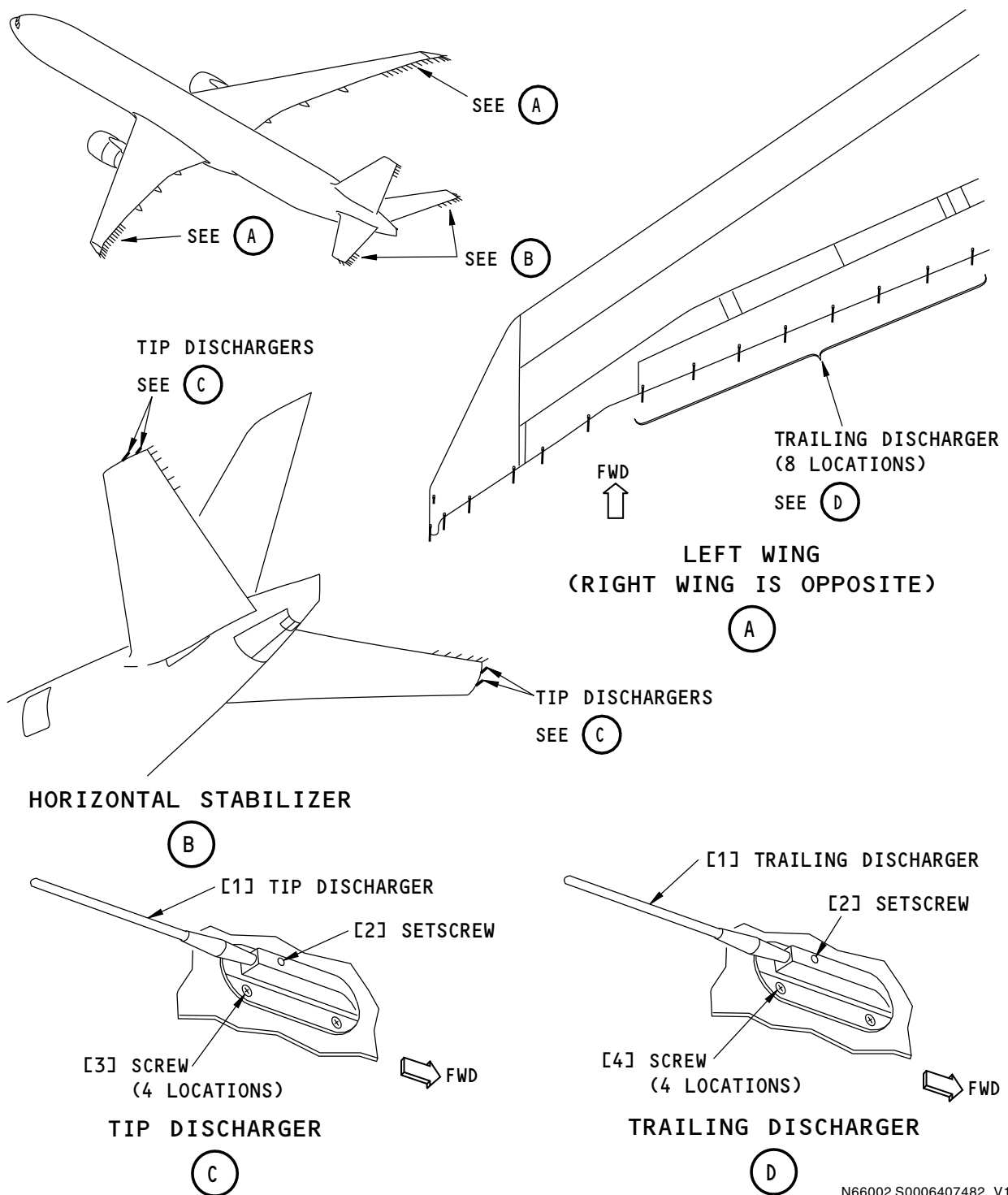
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N66002 S0006407482_V1

Static Discharger (with Screws) Installation
Figure 206/23-61-01-990-821

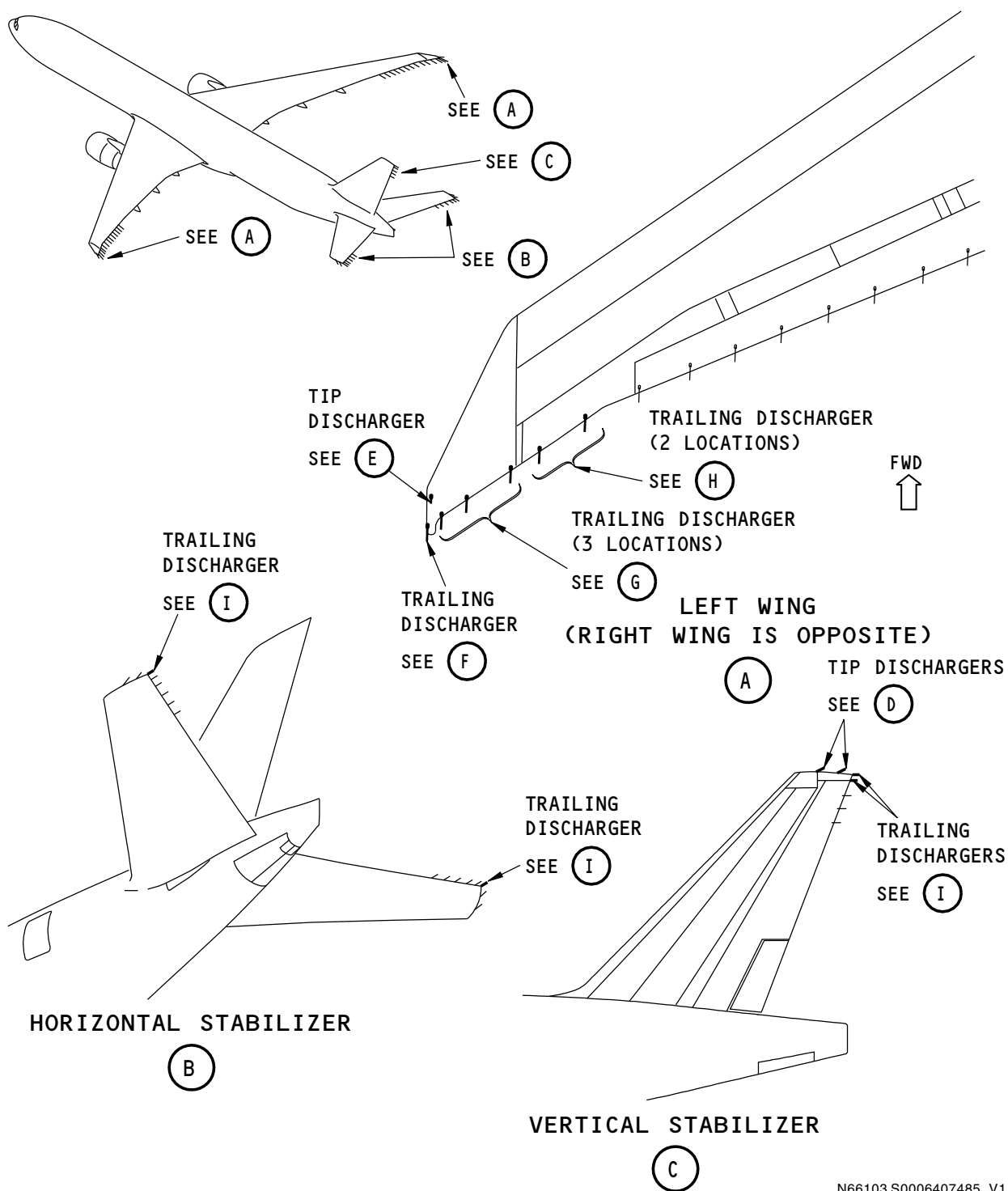
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N66103 S0006407485_V1

**Static Discharger (with Rivets) Installation
Figure 207/23-61-01-990-823 (Sheet 1 of 3)**

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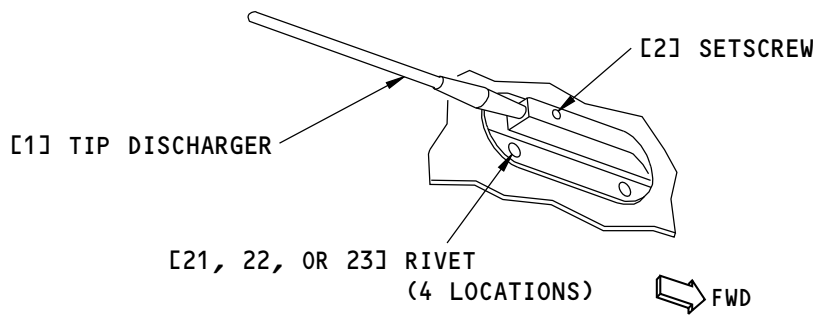
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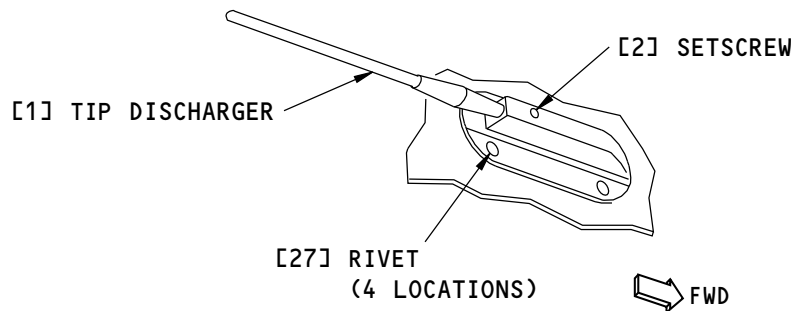


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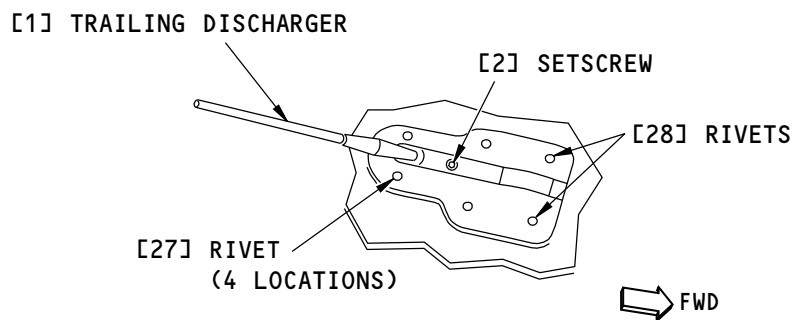
TIP DISCHARGER

D



TIP DISCHARGER

E



TRAILING DISCHARGER

F

N66037 S0006407486_V1

Static Discharger (with Rivets) Installation
Figure 207/23-61-01-990-823 (Sheet 2 of 3)

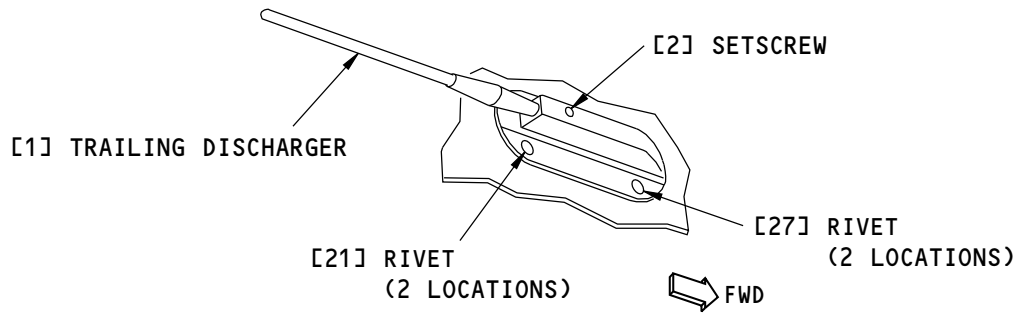
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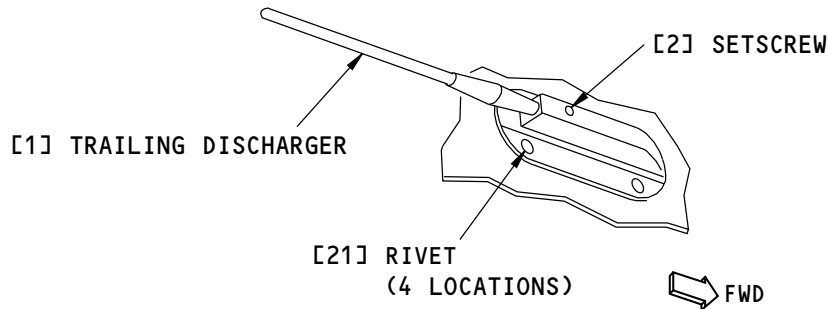
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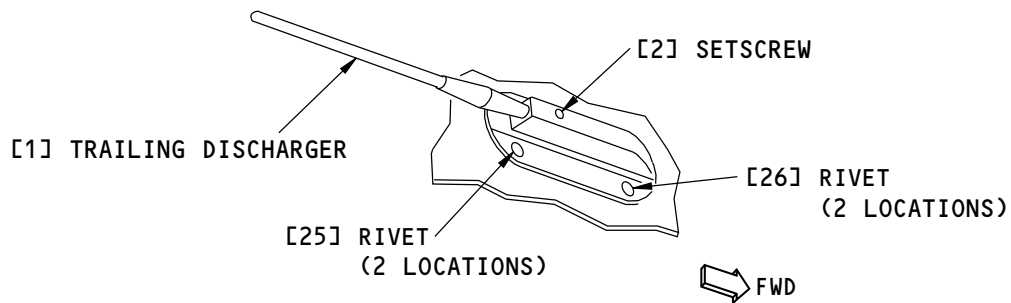
TRAILING DISCHARGER

(G)



TRAILING DISCHARGER

(H)



TRAILING DISCHARGER

(I)

N66048 S0006407487_V1

Static Discharger (with Rivets) Installation
Figure 207/23-61-01-990-823 (Sheet 3 of 3)

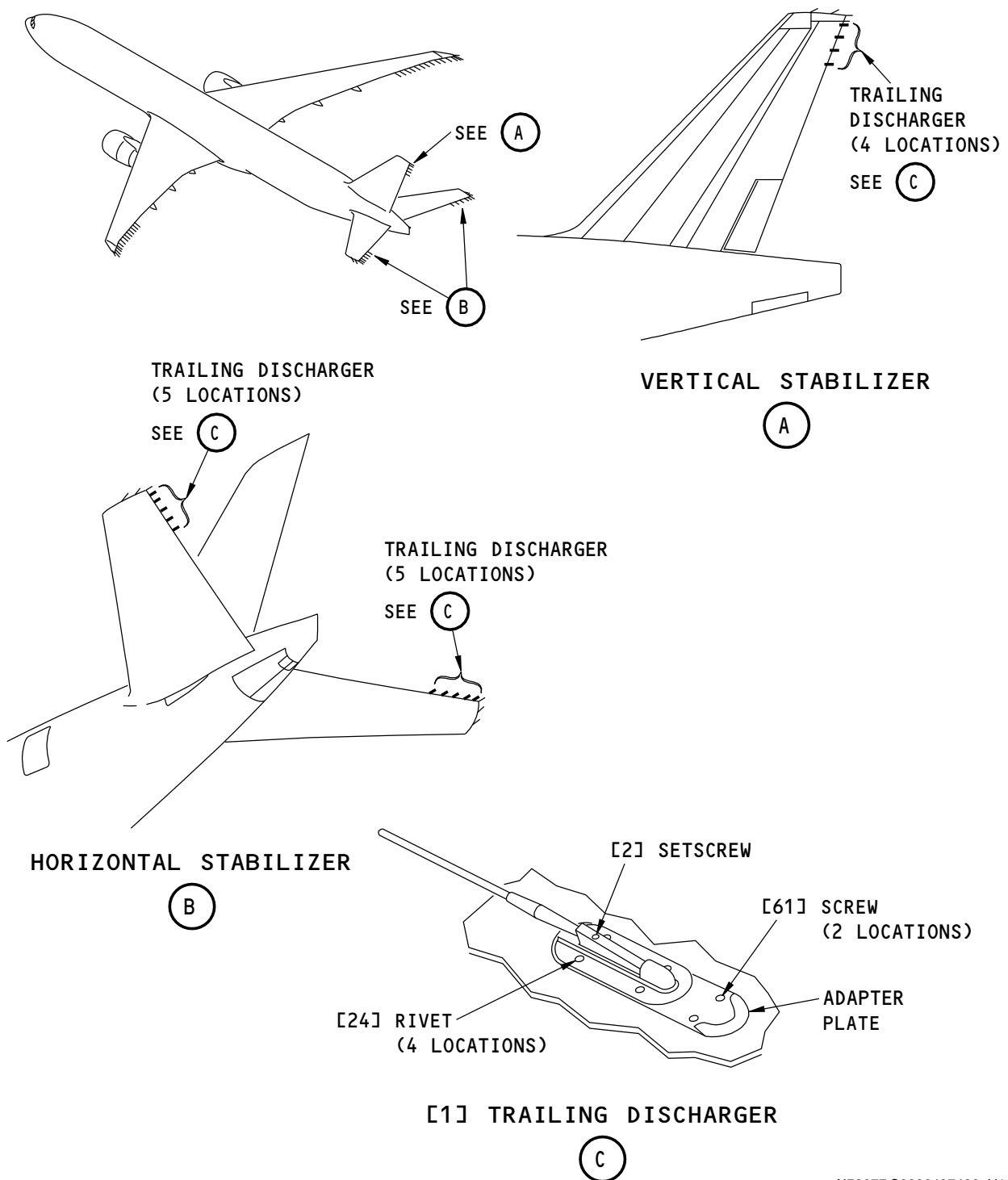
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N79677 S0006407490_V1

**Static Discharger (Adapter Plate with Rivets and Screws) Installation
Figure 208/23-61-01-990-825**

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COCKPIT VOICE RECORDER (CVR) SYSTEM - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

- (1) Cockpit Voice Recorder (CVR) System Deactivation.
- (2) Cockpit Voice Recorder (CVR) System Activation.

TASK 23-71-00-040-801

2. Cockpit Voice Recorder (CVR) System - Deactivation

A. **General**

- (1) This task removes electrical power to the Cockpit Voice Recorder (CVR) System.

B. **Location Zones**

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
164	Area Below Bulk Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right
264	Area Above Passenger Compartment Ceiling, Right - Section 47

C. **Access Panels**

Number	Name/Location
117AL	Main Equipment Center Access Door

D. **Procedure**

SUBTASK 23-71-00-010-002

- (1) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-71-00-860-033

- (2) Open these circuit breakers and install safety tags:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	C23425	VOX RCDR
M	6	C23673	CVR SW

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

E. **Cockpit Voice Recorder (CVR) System - Tryout**

NOTE: This tryout is to make sure the Cockpit Voice Recorder (CVR) System is in a zero energy state.

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SUBTASK 23-71-00-860-034

- (1) Make sure that these circuit breakers are open and have safety tags:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	C23425	VOX RCDR
M	6	C23673	CVR SW

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-00-860-035

- (2) At the pilot's overhead panel, P5, set the AUTO/ON switch to the ON position

SUBTASK 23-71-00-700-003

- (3) At the Overhead Maintenance Panel, P61, push the TEST switch on the voice recorder panel for approximately one half second.
- (a) Make sure the TEST light does not come on.

SUBTASK 23-71-00-700-004

- (4) Use a maintenance access terminal (MAT) to make the following selections:
- (a) ONBOARD MAINTENANCE
 - (b) LINE MAINTENANCE
 - (c) INBOUND FLIGHT DECK EFFECTS
 - (d) Make sure these maintenance message(s) show on the display:
 - 1) 23-43001
 - 2) 23-43003

————— END OF TASK —————

TASK 23-71-00-440-801

3. Cockpit Voice Recorder (CVR) System - Activation

A. General

- (1) This task adds electrical power to the Cockpit Voice Recorder (CVR) System.

B. Location Zones

<u>Zone</u>	<u>Area</u>
117	Main Equipment Center, Left
118	Main Equipment Center, Right
164	Area Below Bulk Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

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C. Procedure

SUBTASK 23-71-00-860-036

- (1) Remove the safety tags and close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	C23425	VOX RCDR
M	6	C23673	CVR SW

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-00-700-005

- (2) Use a maintenance access terminal (MAT) to make the following selections:
- (a) ONBOARD MAINTENANCE
 - (b) LINE MAINTENANCE
 - (c) INBOUND FLIGHT DECK EFFECTS
 - (d) Make sure these maintenance message(s) do not show on the display:
 - 1) 23-43001
 - 2) 23-43003

———— **END OF TASK** ————

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COCKPIT VOICE RECORDER (CVR) SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks for the cockpit voice recorder system:
 - (1) An operational test
 - (2) A CVR Battery Backup Power Functional test
 - (3) A four channel microphone test
 - (4) A system test.

TASK 23-71-00-700-801

2. Cockpit Voice Recorder System - Operational Test

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
23-27-00 P/B 501	DATA COMMUNICATIONS MANAGEMENT FUNCTION (DCMF) - ADJUSTMENT/TEST
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)

B. **Tools/Equipment**

Reference	Description
STD-1390	Headphone - 600 Ohm, with 1/4 Inch Mono Audio Plug

C. **Location Zones**

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. **Prepare for Operation Test**

SUBTASK 23-71-00-860-029

- (1) Make sure that the airplane has electrical power.
 - (a) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-805

SUBTASK 23-71-00-860-011

- (2) Make sure that the Data Communication Management Function (DCMF) is serviceable (PAGEBLOCK 23-27-00/501)

E. **Operational Test at the Voice Recorder Control Panel**

SUBTASK 23-71-00-710-002

- (1) Set the voice recorder AUTO/ON switch to the ON position.

NOTE: Both engines must be off for at least 10 minutes.

- (a) Make sure that the voice recorder AUTO/ON switch stays in the ON position.

NOTE: The voice recorder gets power if both engines are off and after the voice recorder switch is set to ON.

SUBTASK 23-71-00-420-001

- (2) Connect a headphone, STD-1390 to the cockpit voice recorder's control panel at the maintenance panel, P61.

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- (a) Speak an usual voice into the voice recorder's area microphone.
NOTE: Keep 3 to 4 feet away from the area microphone while you speak.
- (b) Make sure that you can hear your voice in the headphone.

SUBTASK 23-71-00-700-001

- (3) Do these steps to do an operational test for the voice recorder:
 - (a) Push the TEST switch on the voice recorder's control panel for approximately one half second.
 - 1) Make sure that you hear a tone in the headphone.
 - 2) Make sure that the STATUS or TEST light comes on one time.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-71-00-020-001

- (1) Disconnect the headphone from the voice recorder's control panel.

SUBTASK 23-71-00-860-005

- (2) Set the voice recorder AUTO/ON switch (P5) to the AUTO position.

SUBTASK 23-71-00-760-005

- (3) Remove electrical power if it is not necessary for other tasks (Remove Electrical Power, TASK 24-22-00-860-806).

————— END OF TASK —————

TASK 23-71-00-720-801

3. Cockpit Voice Recorder System - CVR Battery Backup Power Functional Test

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) This task does a battery backup power test for the voice recorder system.
- (2) If possible, do this task with two persons. One operates the test in the flight compartment and the other one operates the circuit breakers during the test procedure.

NOTE: The CVR battery backup power circuit breakers (APU BAT BKUP PWR CVR, MAIN BAT BKUP PWR CVR) are installed on the P49 and P310 panels. P49 panel is located in the aft bulk cargo compartment and P310 panel is located in the main electronics equipment center.

- (3) A clock or stopwatch, STD-836 is necessary for this test. The flight compartment clock is sufficient to measure the time for this test.

B. References

Reference	Title
23-27-00 P/B 501	DATA COMMUNICATIONS MANAGEMENT FUNCTION (DCMF) - ADJUSTMENT/TEST
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)

C. Tools/Equipment

Reference	Description
STD-836	Stopwatch
STD-1390	Headphone - 600 Ohm, with 1/4 Inch Mono Audio Plug

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D. Location Zones

Zone	Area
162	Bulk Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

E. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door
825	Bulk Cargo Door

F. Prepare Procedure

SUBTASK 23-71-00-760-003

- (1) Supply the electrical power to the airplane (TASK 24-22-00-860-805).

SUBTASK 23-71-00-010-001

- (2) Open these access panels:

Number	Name/Location
117AL	Main Equipment Center Access Door
825	Bulk Cargo Door

SUBTASK 23-71-00-860-007

- (3) Make sure that the Data Communication Management Function (DCMF) is serviceable (PAGEBLOCK 23-27-00/501).

G. Procedure

SUBTASK 23-71-00-860-010

- (1) Set the voice recorder AUTO/ON switch to the ON position.

NOTE: Both engines must be off for at least 11 minutes.

- (a) Make sure that the voice recorder AUTO/ON switch stays in the ON position.

SUBTASK 23-71-00-480-001

- (2) Connect a headphone, STD-1390 to the headphone jack on the voice recorder's control panel at the P61 panel.

- (a) Speak an usual voice into the area microphone.

NOTE: Keep 3 to 4 feet away from the area microphone while you speak.

- (b) Make sure that you can hear your voice in the headphone.

SUBTASK 23-71-00-860-008

- (3) Use a clock in the flight compartment or stopwatch, STD-836 to monitor the elapsed time in the subsequent steps.

SUBTASK 23-71-00-040-001

- (4) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
F	6	C23425	VOX RCDR

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SUBTASK 23-71-00-720-002

- (5) Start the clock or stopwatch, STD-836 to monitor the time after you pulled the VOX RCDR circuit breaker for the test.

NOTE: There is a 10 minute backup timer for the CVR backup power sources. It is necessary to complete the subsequent steps no more than 10 minutes after you open the voice recorder circuit breaker. If you do not complete the subsequent steps in 10 minutes or less, you must cycle the VOX RCDR circuit breaker.

SUBTASK 23-71-00-720-003

- (6) Do a functional test of the voice recorder backup power supplied by the APU battery:
- (a) Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

- (b) Push the TEST switch on the voice recorder's control panel for approximately one half second. Then release it.
- 1) Make sure that you hear a tone in the headphone.
- 2) Make sure that the STATUS or TEST light does not come on.

NOTE: With no AC power applied to the AC Undervoltage Sense Relay (K23335), DC power is removed from the Dispatch Relay (K23332) and the Test Indicator LED will not illuminate on airplanes with Datalink Recording Activated.

- (c) Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-00-720-004

- (7) Do a functional test of the voice recorder backup power supplied by the Main battery:
- (a) Open this circuit breaker and install safety tag:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

- (b) Push the TEST switch on the voice recorder's control panel for approximately one half second. Then release it.
- 1) Make sure that you hear a tone in the headphone.
- 2) Make sure that the STATUS or TEST light does not come on.

NOTE: With no AC power applied to the AC Undervoltage Sense Relay (K23335), DC power is removed from the Dispatch Relay (K23332) and the Test Indicator LED will not illuminate on airplanes with Datalink Recording Activated.

- (c) Remove the safety tag and close this circuit breaker:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

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SUBTASK 23-71-00-720-005

- (8) Do these steps to make sure that the voice recorder has power for the remaining of 10 ± 1 minutes since the VOX RCDR circuit breaker opened:
- (a) To make sure that the voice recorder has power, continue to listen for the area sound through the headphone.
 - (b) Make sure that you can hear the area sound.
 - (c) When the area sound stopped, stop the clock or stopwatch, STD-836.
 - 1) Make sure that the clock or stopwatch, STD-836 stopped at 10 ± 1 minutes.
- NOTE: When the area sound stopped, this tells you that the voice recorder does not have power.

SUBTASK 23-71-00-440-001

- (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>
F	6	C23425	VOX RCDR

H. Put the Airplane Back to Its Usual Condition

SUBTASK 23-71-00-080-003

- (1) Disconnect the headphone from the voice recorder's control panel.

SUBTASK 23-71-00-860-009

- (2) Set the voice recorder AUTO/ON switch (P5) to the AUTO position.

SUBTASK 23-71-00-410-001

- (3) Close these access panels:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door
825	Bulk Cargo Door

SUBTASK 23-71-00-760-004

- (4) Remove the electrical power if it is not necessary for other tasks (TASK 24-22-00-860-806).

————— END OF TASK —————

TASK 23-71-00-700-802

4. Cockpit Voice Recorder System - Four Channel Microphone Test

NOTE: This procedure is a scheduled maintenance task.

A. References

<u>Reference</u>	<u>Title</u>
23-27-00 P/B 501	DATA COMMUNICATIONS MANAGEMENT FUNCTION (DCMF) - ADJUSTMENT/TEST
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)

B. Tools/Equipment

<u>Reference</u>	<u>Description</u>
STD-1390	Headphone - 600 Ohm, with 1/4 Inch Mono Audio Plug

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(Continued)

Reference	Description
STD-13898	Headset with Boom Mic and two-prong plug (For use on Flight Deck during CVR testing)

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
715	Left Aft Nose Landing Gear Door

D. Prepare Procedure

SUBTASK 23-71-00-760-002

- (1) Make sure that the airplane has electrical power.
 - (a) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-71-00-860-012

- (2) Make sure that the Data Communication Management Function (DCMF) is serviceable (PAGEBLOCK 23-27-00/501).

SUBTASK 23-71-00-860-032

- (3) Set the voice recorder AUTO/ON switch to the ON position.

NOTE: Both engines must be off for at least 10 minutes.

 - (a) Make sure that the voice recorder AUTO/ON switch stays in the ON position.

SUBTASK 23-71-00-420-002

- (4) Connect a headphone, STD-1390 to the voice recorder's control panel.

E. Four Channel Microphone Test

SUBTASK 23-71-00-710-016

- (1) Do an operational test at the voice recorder's control panel:
 - (a) Push the TEST switch on the voice recorder's control panel for approximately one half second. Then release it.
 - 1) Make sure that you hear a tone in the headphone.
 - 2) Make sure that the STATUS or TEST light comes on one time.

SUBTASK 23-71-00-860-030

- (2) Put a cover on the voice recorder's area microphone.

SUBTASK 23-71-00-710-017

- (3) Do the microphone test for the voice recorder system at the captain's position:
 - (a) Connect a boom microphone (on-board boom microphone headset, STD-13898) to the captain's jack panel.
 - (b) Speak into the boom microphone.

NOTE: Make sure that you do not push the PTT or MIC switch.

 - 1) Make sure that you hear your voice through the headphone at the voice recorder's control panel.
 - (c) Disconnect the boom microphone.

SUBTASK 23-71-00-710-018

- (4) Do the microphone test for the voice recorder system at the first officer's position:

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- (a) Connect a boom microphone to the first officer's jack panel.
- (b) Speak into the boom microphone.

NOTE: Make sure that you do not push the PTT or MIC switch.

- 1) Make sure that you hear your voice through the headphone at the voice recorder's control panel.
- (c) Disconnect the boom microphone.

SUBTASK 23-71-00-710-019

- (5) Do the microphone test for the voice recorder system at the first observer's position:

- (a) Connect a boom microphone to the first observer's jack panel.
- (b) Speak into the boom microphone.

NOTE: Make sure that you do not push the PTT or MIC switch.

- 1) Make sure that you hear your voice through the headphone at the voice recorder's control panel.
- (c) Disconnect the boom microphone.

SUBTASK 23-71-00-710-020

- (6) Do a test for the voice recorder's area microphone:

- (a) Remove the cover from the area microphone that you installed before.
- (b) Speak into the area microphone.

NOTE: Keep 3 to 4 feet away from the area microphone while you speak.

- 1) Make sure that you hear your voice through the headphone at the voice recorder's control panel.

SUBTASK 23-71-00-710-021

- (7) Do these steps to erase the memory in the voice recorder:

- (a) Set the parking brake.
- (b) Push and hold the ERASE switch on the voice recorder's control panel for approximately 3 seconds. Then release it.
 - 1) Make sure that you hear a tone in the headphone.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-71-00-080-002

- (1) Disconnect the headphone from the voice recorder's control panel.

SUBTASK 23-71-00-860-031

- (2) Set the voice recorder AUTO/ON switch to the AUTO position.

SUBTASK 23-71-00-760-006

- (3) Remove the electrical power if is not necessary for other tasks (Remove Electrical Power, TASK 24-22-00-860-806).

————— END OF TASK —————

TASK 23-71-00-730-801

5. Cockpit Voice Recorder System - System Test

A. General

- (1) This system test procedure has these test:
 - (a) Operational Test

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- (b) CVR Battery Backup Power Functional Test
- (c) Four Channel Microphone Test
- (d) External CVR Monitor Jack Test
- (e) Voice Recorder AUTO/ON Switch Test
- (f) Bulk Erasure Test

B. References

Reference	Title
23-27-00 P/B 501	DATA COMMUNICATIONS MANAGEMENT FUNCTION (DCMF) - ADJUSTMENT/TEST
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)
32-09-00 P/B 201	AIR/GROUND SYSTEM (AGS) - MAINTENANCE PRACTICES

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1614	Headset - Microphone Part #: 511-50699 Supplier: 0DH85 Part #: H3310 Supplier: 71483 Part #: H3312 Supplier: 71483 Opt Part #: 460A Supplier: 79687 Opt Part #: 511-20010-2 Supplier: 0DH85
COM-8986	Communication Cable - Ground Crew Part #: 4MS-TTCOMM-1 Supplier: 0BC31 Part #: 4MS-TTCOMM-6 Supplier: 0BC31 Part #: 511-20012 Supplier: 0DH85 Part #: C31-50 Supplier: 71483
STD-1390	Headphone - 600 Ohm, with 1/4 Inch Mono Audio Plug

D. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right
715	Left Aft Nose Landing Gear Door

E. Prepare Procedure

SUBTASK 23-71-00-860-013

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-71-00-860-014

- (2) Make sure that the Data Communication Management Function (DCMF) is serviceable (PAGEBLOCK 23-27-00/501).

F. Operational Test

SUBTASK 23-71-00-710-005

- (1) Do this task: Cockpit Voice Recorder System - Operational Test, TASK 23-71-00-700-801.

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G. CVR Battery Backup Power Functional Test

SUBTASK 23-71-00-720-006

- (1) Do this task: Cockpit Voice Recorder System - CVR Battery Backup Power Functional Test, TASK 23-71-00-720-801.

H. Four Channel Microphone Test

SUBTASK 23-71-00-710-006

- (1) Do this task: Cockpit Voice Recorder System - Four Channel Microphone Test, TASK 23-71-00-700-802.

I. External CVR Monitor Jack Test

SUBTASK 23-71-00-860-015

- (1) Set the voice recorder AUTO/ON switch to the ON position.

SUBTASK 23-71-00-480-002

- (2) Connect the headset - microphone, COM-1614 using communication cable, COM-8986, to the cockpit voice jack on the electrical service panel, on the main wheel well service panel, P56.

SUBTASK 23-71-00-710-007

- (3) Do these steps to do a test for the External CVR Monitor Jack:

NOTE: This task uses two persons, one in the flight compartment to speak and the other in the main wheel well service panel, P56 to listen.

- (a) Have a person in the flight compartment speak an usual voice into the voice recorder's area microphone.

NOTE: Keep 3 to 4 feet from the area microphone while you speak.

- 1) Make sure that you hear the voice from the flight compartment through the headset at the P56 panel.

SUBTASK 23-71-00-080-004

- (4) Disconnect the headset from the cockpit voice jack at the P56 panel.

SUBTASK 23-71-00-860-016

- (5) Set the voice recorder AUTO/ON switch to the AUTO position.

J. Voice Recorder AUTO/ON Switch Test

SUBTASK 23-71-00-860-017

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE

SUBTASK 23-71-00-710-008

- (2) Do these steps to do a test for the voice recorder AUTO/ON switch:
 - (a) Make sure that the left and the right engine fuel control switches (P10) are in the CUTOFF position.
 - (b) Make sure that the left and the right engine fire handles are in the Stowed (pushed in) position.
 - (c) Make sure that the voice recorder AUTO/ON switch in the AUTO position.

NOTE: Both engines must be off for at least 10 minutes.

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- (d) Connect a headphone, STD-1390 to the voice recorder's control panel.
 - 1) Speak an usual voice to the area microphone.
 - 2) Make sure that you do not hear your voice through the headphone.
- (e) Set the voice recorder AUTO/ON switch (P5) to the ON position.
 - 1) Make sure that the voice recorder AUTO/ON switch stays in the ON position.
 - 2) Speak an usual voice to the area microphone.

NOTE: Keep 3 to 4 feet away from the area microphone while you speak.

 - a) Make sure that you hear your voice through the headphone.
- (f) Put the left engine fuel control switch to the RUN position.
 - 1) Make sure that the voice recorder AUTO/ON switch moves to the AUTO position.
 - 2) Speak an usual voice to the area microphone.
 - a) Make sure that you hear your voice through the headphone.
- (g) Put the left engine fuel control switch to the CUTOFF position.
 - 1) Make sure that you hear the area sound through the headphone for approximately 10 +/- 1 minutes and then the area sound stops after 10 +/- 1 minutes.

NOTE: The power stays energized to the voice recorder for 10 minutes after the last engine shutdown.
- (h) Set the voice recorder AUTO/ON switch to the ON position.
 - 1) Make sure that the voice recorder AUTO/ON switch stays in the ON position.
 - 2) Speak an usual voice to the area microphone.

NOTE: Keep 3 to 4 feet away from the area microphone while you speak.

 - a) Make sure that you hear your voice through the headphone.
- (i) Put the right engine fuel control switch to the RUN position.
 - 1) Make sure that the voice recorder AUTO/ON switch moves to the AUTO position.
 - 2) Speak an usual voice to the area microphone.
 - a) Make sure that you hear your voice through the headphone.
- (j) Put the right engine fuel control switch to the CUTOFF position.
 - 1) Make sure that you hear the area sound through the headphone for approximately 10 +/- 1 minutes and then the area sound stops after 10 +/- 1 minutes.

NOTE: The power stays energized to the voice recorder for 10 minutes after the last engine shutdown.
- (k) Set the voice recorder AUTO/ON switch to the ON position.
- (l) Open these circuit breakers and make sure the circuit breaker labeled as INOP is open and has a safety tag installed:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	6	C23673	CVR SW

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

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- (m) Make sure that the voice recorder AUTO/ON switch moves to the AUTO position.
- (n) Close these circuit breakers but do not close the circuit breaker labeled as INOP:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	6	C23673	CVR SW

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-00-860-018

- (3) Set the voice recorder AUTO/ON switch to the ON position.

SUBTASK 23-71-00-710-010

- (4) Push the TEST switch on the voice recorder' control panel for approximately one half second. Then release it.
 - (a) Make sure that you hear a tone in the headphone.
 - (b) Make sure that the STATUS or TEST light comes on one time.

SUBTASK 23-71-00-710-011

- (5) Do this test to make sure that the voice recorder is serviceable when the airplane is in the air mode:
 - (a) Make sure that the voice recorder AUTO/ON switch is in the AUTO position.
 - (b) Make sure that the left and the right engine fuel control switches are in the CUTOFF position (P10) for more than 10 minutes.

NOTE: The voice recorder stays energized for 10 minutes after the engines shutdown. You must wait for 10 minutes after the last engine shutdown to continue.
 - (c) Push the TEST switch on the voice recorder's control panel for approximately one half second. Then release it.
 - 1) Make sure that the MONITOR or STATUS light does not come on.



WARNING

PREPARE THE SAFETY-SENSITIVE SYSTEMS FOR THE AIR MODE BEFORE YOU OPEN THE AIR/GROUND CIRCUIT BREAKERS. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (d) Set the airplane in air mode simulation (AIR/GROUND SYSTEM (AGS) - MAINTENANCE PRACTICES, PAGEBLOCK 32-09-00/201).
- (e) Push the TEST switch on the voice recorder's control panel for approximately one half second. Then release it.
 - 1) Make sure that the STATUS light comes on one time.
- (f) Set the airplane back to the ground mode (AIR/GROUND SYSTEM (AGS) - MAINTENANCE PRACTICES, PAGEBLOCK 32-09-00/201).

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SUBTASK 23-71-00-860-019

- (6) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE

K. Bulk Erasure Test

SUBTASK 23-71-00-860-020

- (1) Make sure that the airplane wheels have chocks installed around them.

SUBTASK 23-71-00-860-021

- (2) Set the parking brakes.

SUBTASK 23-71-00-860-022

- (3) Open this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	22	C32615	LDG GEAR PARKING BRAKE VALVE

SUBTASK 23-71-00-860-023



WARNING

PREPARE THE SAFETY-SENSITIVE SYSTEMS FOR THE AIR MODE BEFORE YOU OPEN THE AIR/GROUND CIRCUIT BREAKERS. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (4) Open this circuit breaker and install safety tag:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	26	C32627	AIR/GROUND 2

SUBTASK 23-71-00-860-024

- (5) Set the voice recorder AUTO/ON switch to the ON position.

SUBTASK 23-71-00-480-003

- (6) Connect a headphone to the voice recorder's control panel (P5).
(a) Make sure that you hear the area sound through the headphone.

SUBTASK 23-71-00-710-012

- (7) Push and hold the ERASE switch for a approximately 3 seconds. Then release it.
(a) Make sure that you do not hear a tone in the headphone.

SUBTASK 23-71-00-860-025

- (8) Close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	26	C32627	AIR/GROUND 2

SUBTASK 23-71-00-710-013

- (9) Push and hold the ERASE switch for a approximately 3 seconds. Then release it.
(a) Make sure that you do not hear a tone through the headphone.

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SUBTASK 23-71-00-860-026

- (10) Remove the safety tag and close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	22	C32615	LDG GEAR PARKING BRAKE VALVE

SUBTASK 23-71-00-710-015

- (11) Push and hold the ERASE switch for a approximately 2 seconds. Then release it.
(a) Make sure that you hear a tone in the headphone.

L. Put the Airplane Back to the Usual Condition.

SUBTASK 23-71-00-080-005

- (1) Disconnect the headphone from the voice recorder's control panel.

SUBTASK 23-71-00-860-027

- (2) Set the voice recorder AUTO/ON switch to the AUTO position.

SUBTASK 23-71-00-860-028

- (3) Remove electrical power if it is not necessary (Remove Electrical Power, TASK 24-22-00-860-806).

————— **END OF TASK** —————

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COCKPIT VOICE RECORDER - MAINTENANCE PRACTICES

1. General

- A. This procedure contains scheduled maintenance task data.
- B. You can use a device to copy the data from the cockpit data recorder (CVR) while the CVR is on the airplane. The data copied by the device can then be analyzed at a different location.
- C. This procedure contains:
 - (1) Make a copy of the CVR data with the hand held multipurpose interface (HHMPI) unit.

TASK 23-71-01-970-801

2. Make a Copy of the CVR Data with the Hand Held Multipurpose Interface (HHMPI)

A. General

- (1) This task uses a Hand Held Multipurpose Interface (HHMPI) to make a copy of the cockpit voice recorder (CVR) while the CVR is in the airplane.
- (2) The copied data then can be analyzed at a different location by the applicable airline personnel.

B. References

Reference	Title
20-10-01-000-801	E/E Box Removal (P/B 401)
20-10-01-400-801	E/E Box Installation (P/B 401)
23-71-00-700-801	Cockpit Voice Recorder System - Operational Test (P/B 501)
24-22-00-860-805	Supply Electrical Power (P/B 201)
25-21-07-000-801	Lowered Ceiling Panel Removal (P/B 401)
25-21-07-400-801	Lowered Ceiling Panel Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-14627	Adapter - CVR Rack, ARINC-757 Part #: FDS40-0247 Supplier: Z7C70 Opt Part #: FDS400-247 Supplier: Z7C70
COM-14992	Cable - Interface, HHMPI (For Honeywell HRF5-V or C) Part #: FDS40-0274 Supplier: Z7C70

D. Location Zones

Zone	Area
162	Bulk Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right
264	Area Above Passenger Compartment Ceiling, Right - Section 47

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E. Prepare to Make a Copy of the Cockpit Voice Recorder Data

SUBTASK 23-71-01-760-002

- (1) Supply electrical power (TASK 24-22-00-860-805).

SUBTASK 23-71-01-860-013

- (2) 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>
F	6	C23425	VOX RCDR

Open these circuit breakers and install safety tags:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-01-860-014

- (3) Set the voice recorder AUTO/ON switch (P5) to the ON position.

SUBTASK 23-71-01-010-002

- (4) To get access to the CVR, do this task: Lowered Ceiling Panel Removal, TASK 25-21-07-000-801.

NOTE: The cockpit voice recorder is on the electronic rack, E7 in the aft passenger compartment above the ceiling.

SUBTASK 23-71-01-020-003



DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (5) To remove the CVR, do this task: E/E Box Removal, TASK 20-10-01-000-801.

SUBTASK 23-71-01-700-001

- (6) Make sure the Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694 is OFF.

SUBTASK 23-71-01-700-002

- (7) Install the removable media into the HHMPI, if required.

NOTE: The downloaded CVR data can be stored using one of the following memory options: internal memory, USB flash drive, Compact Flash card, SD card, or optional PCMCIA card.

SUBTASK 23-71-01-860-026

- (8) Do these steps to connect the HHMPI to the CVR:

- (a) Connect the ARINC-757 CVR rack adapter, COM-14627 into the back of the CVR and reconnect aircraft power to the CVR rack adaptor instead.

NOTE: Connecting to the rack adaptor disables record mode. Without disabling record mode, you cannot download CVR data.

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- (b) Connect the HHMPI interface cable (For Honeywell HRF5-V or C), COM-14992 into the CVR front GSE connector and then into the HHMPI.

SUBTASK 23-71-01-860-017

- (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>
F	6	C23425	VOX RCDR

Remove the safety tags and close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-01-860-018

- (10) Turn on the HHMPI.
- (a) Press CANCEL or OK for 2-3 seconds until the unit beeps.

NOTE: The interface cable is detected automatically, and correct connection to the CVR is indicated by a blue aircraft icon found in the status bar of the display.

F. Procedure

SUBTASK 23-71-01-970-001

- (1) Do these steps to copy the CVR data using the HHMPI:
- (a) Select the aircraft type, model and tail number, if required.
- (b) Select DOWNLOAD OPERATIONS from the Main Menu.
- (c) Select one of the CVR download options.
- (d) Select the memory storage device to download the CVR data.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 23-71-01-860-019

- (1) To turn off the HHMPI:
- (a) Press CANCEL until the CONFIRM POWER OFF alert is displayed, and then press OK to confirm.

SUBTASK 23-71-01-860-020

- (2) 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>
F	6	C23425	VOX RCDR

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SUBTASK 23-71-01-860-021

- (3) Open these circuit breakers and install safety tags:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-01-860-027

- (4) Do these steps to disconnect the HHMPI from the CVR:
- Disconnect the HHMPI interface cable (For Honeywell HRF5-V or C), COM-14992 from the CVR front GSE connector and the HHMPI.
 - Disconnect the ARINC-757 CVR rack adapter, COM-14627 from the back of the CVR and equipment rack.

SUBTASK 23-71-01-420-005



CAUTION

DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (5) To install the CVR, do this task: E/E Box Installation, TASK 20-10-01-400-801.

SUBTASK 23-71-01-410-002

- (6) To close the lowered ceiling panel in the aft passenger compartment, do this task: Lowered Ceiling Panel Installation, TASK 25-21-07-400-801.

SUBTASK 23-71-01-860-024

- (7) 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>
F	6	C23425	VOX RCDR

SUBTASK 23-71-01-860-025

- (8) Remove the safety tags and close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-01-860-028

- (9) Set the voice recorder AUTO/ON switch (P5) to the AUTO position.

SUBTASK 23-71-01-710-010

- (10) Do this task: Cockpit Voice Recorder System - Operational Test, TASK 23-71-00-700-801.

————— END OF TASK —————

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COCKPIT VOICE RECORDER - REMOVAL/INSTALLATION

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) A removal of the cockpit voice recorder
 - (2) An installation of the cockpit voice recorder.
- C. The cockpit voice recorder is on the electronics equipment rack, E7 in the aft passenger compartment above the ceiling.

TASK 23-71-01-000-801

2. Cockpit Voice Recorder Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
20-10-01-000-801	E/E Box Removal (P/B 401)
23-71-03-000-801	Underwater Locator Beacon (ULB) Removal (P/B 201)
25-21-07-000-801	Lowered Ceiling Panel Removal (P/B 401)

B. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	COCKPIT VOICE RECORDER	23-71-01-02-005	ARO ALL

C. **Location Zones**

Zone	Area
162	Bulk Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right
264	Area Above Passenger Compartment Ceiling, Right - Section 47

D. **Removal Procedure**

SUBTASK 23-71-01-860-001

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

Left Power Management Panel, P110

Row	Col	Number	Name
F	6	C23425	VOX RCDR

Open these circuit breakers and install safety tags:

APU Auxiliary Panel, P49

Row	Col	Number	Name
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

Row	Col	Number	Name
J	13	C23672	MAIN BAT BKUP PWR CVR

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SUBTASK 23-71-01-010-001

- (2) To get access to the COCKPIT VOICE RECORDER [2], do this task: Lowered Ceiling Panel Removal, TASK 25-21-07-000-801.

NOTE: The cockpit voice recorder is on the electronic equipment rack, E7 in the aft passenger compartment above the ceiling.

SUBTASK 23-71-01-020-001



DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE COCKPIT VOICE RECORDER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COCKPIT VOICE RECORDER.

- (3) To remove the COCKPIT VOICE RECORDER [2], do this task: E/E Box Removal, TASK 20-10-01-000-801.

SUBTASK 23-71-01-020-002

- (4) If the new COCKPIT VOICE RECORDER [2] does not have an ULB installed, remove the ULB from the COCKPIT VOICE RECORDER [2].
- (a) Do this task: Underwater Locator Beacon (ULB) Removal, TASK 23-71-03-000-801

————— **END OF TASK** —————

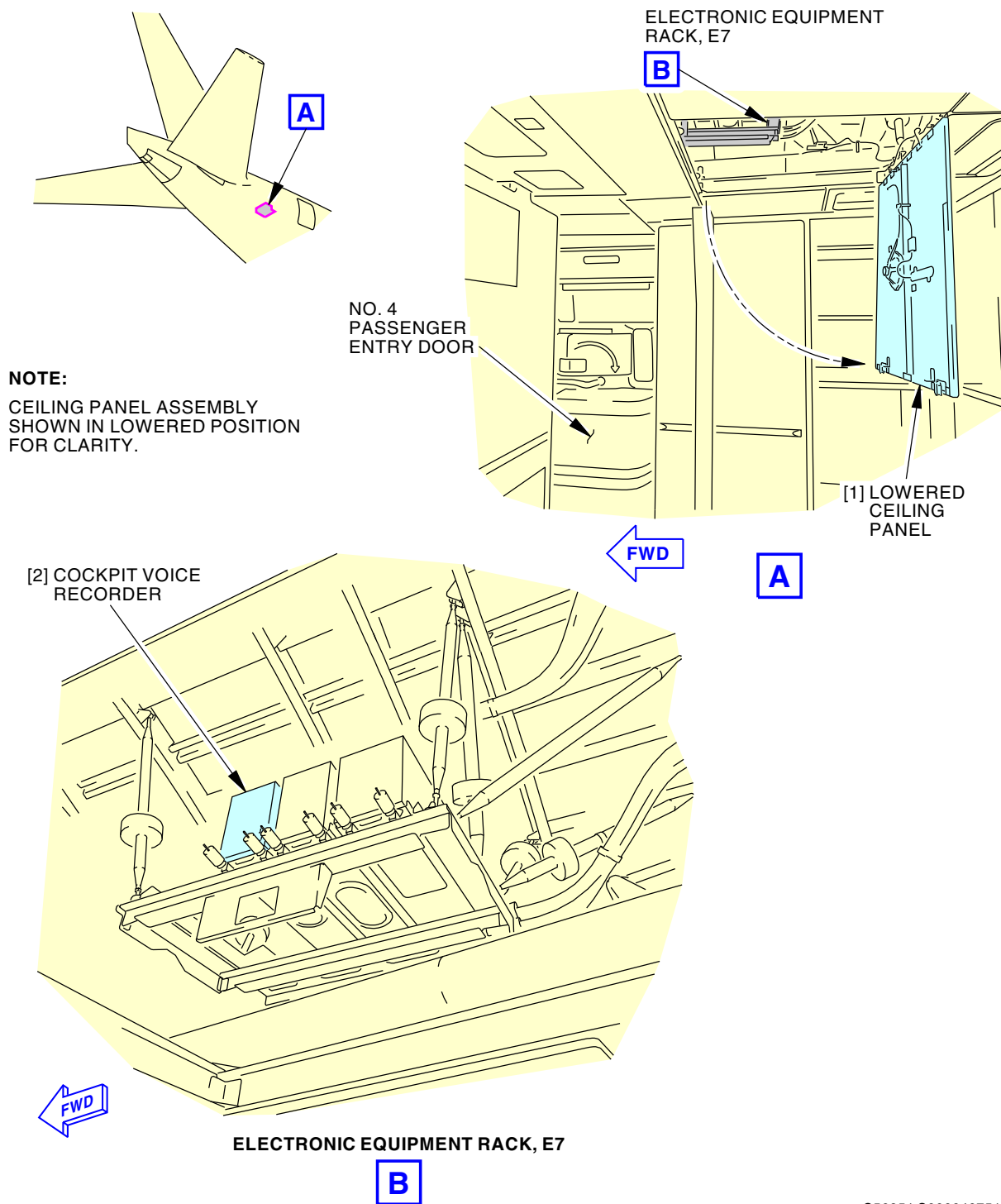
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**Cockpit Voice Recorder Installation
Figure 401/23-71-01-990-802**

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TASK 23-71-01-400-801

3. Cockpit Voice Recorder Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
20-10-01-400-801	E/E Box Installation (P/B 401)
23-71-00-700-801	Cockpit Voice Recorder System - Operational Test (P/B 501)
23-71-03-400-801	Underwater Locator Beacon (ULB) Installation (P/B 201)
25-21-07-400-801	Lowered Ceiling Panel Installation (P/B 401)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	COCKPIT VOICE RECORDER	23-71-01-02-005	ARO ALL

C. Location Zones

Zone	Area
162	Bulk Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right
264	Area Above Passenger Compartment Ceiling, Right - Section 47

D. Installation Procedure

SUBTASK 23-71-01-420-001

- (1) To install an underwater locator beacon (ULB) if the COCKPIT VOICE RECORDER [2] does not have a ULB installed, do this task: Underwater Locator Beacon (ULB) Installation, TASK 23-71-03-400-801.

SUBTASK 23-71-01-860-002

- (2) Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
F	6	C23425	VOX RCDR

Make sure that these circuit breakers are open and have safety tags:

APU Auxiliary Panel, P49

Row	Col	Number	Name
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

Row	Col	Number	Name
J	13	C23672	MAIN BAT BKUP PWR CVR

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SUBTASK 23-71-01-420-002



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE COCKPIT VOICE RECORDER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COCKPIT VOICE RECORDER.

- (3) To install the COCKPIT VOICE RECORDER [2], do this task: E/E Box Installation, TASK 20-10-01-400-801.

SUBTASK 23-71-01-410-001

- (4) To close the lowered ceiling panel [1] in the aft passenger compartment, do this task: Lowered Ceiling Panel Installation, TASK 25-21-07-400-801.

SUBTASK 23-71-01-860-003

- (5) 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>
F	6	C23425	VOX RCDR

Remove the safety tags and close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

E. Installation Test

SUBTASK 23-71-01-710-009

- (1) Do this task: Cockpit Voice Recorder System - Operational Test, TASK 23-71-00-700-801.

————— END OF TASK —————

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COCKPIT VOICE RECORDER PANEL - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the cockpit voice recorder panel.
 - (2) An installation of the cockpit voice recorder panel.
- B. The cockpit voice recorder panel, M23477, is installed on the maintenance panel, P61.

TASK 23-71-02-000-801

2. Cockpit Voice Recorder Panel Removal

(Figure 401)

A. **Location Zones**

<u>Zone</u>	<u>Area</u>
162	Bulk Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

B. **Removal Procedure**

SUBTASK 23-71-02-860-004

- (1) 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>
F	6	C23425	VOX RCDR

Open these circuit breakers and install safety tags:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-02-000-001

- (2) Remove the CVR PANEL [1].

NOTE: Cockpit voice recorder is referred to as CVR.

- (a) Loosen the quarter-turn fasteners [2] on the CVR PANEL [1].
- (b) Remove the CVR PANEL [1] to get access to the connector [3].
- (c) Disconnect the electrical connector [3] from the CVR PANEL [1].
- (d) Put protective covers on the electrical connector [3] on the CVR PANEL [1] and on the wire bundle.

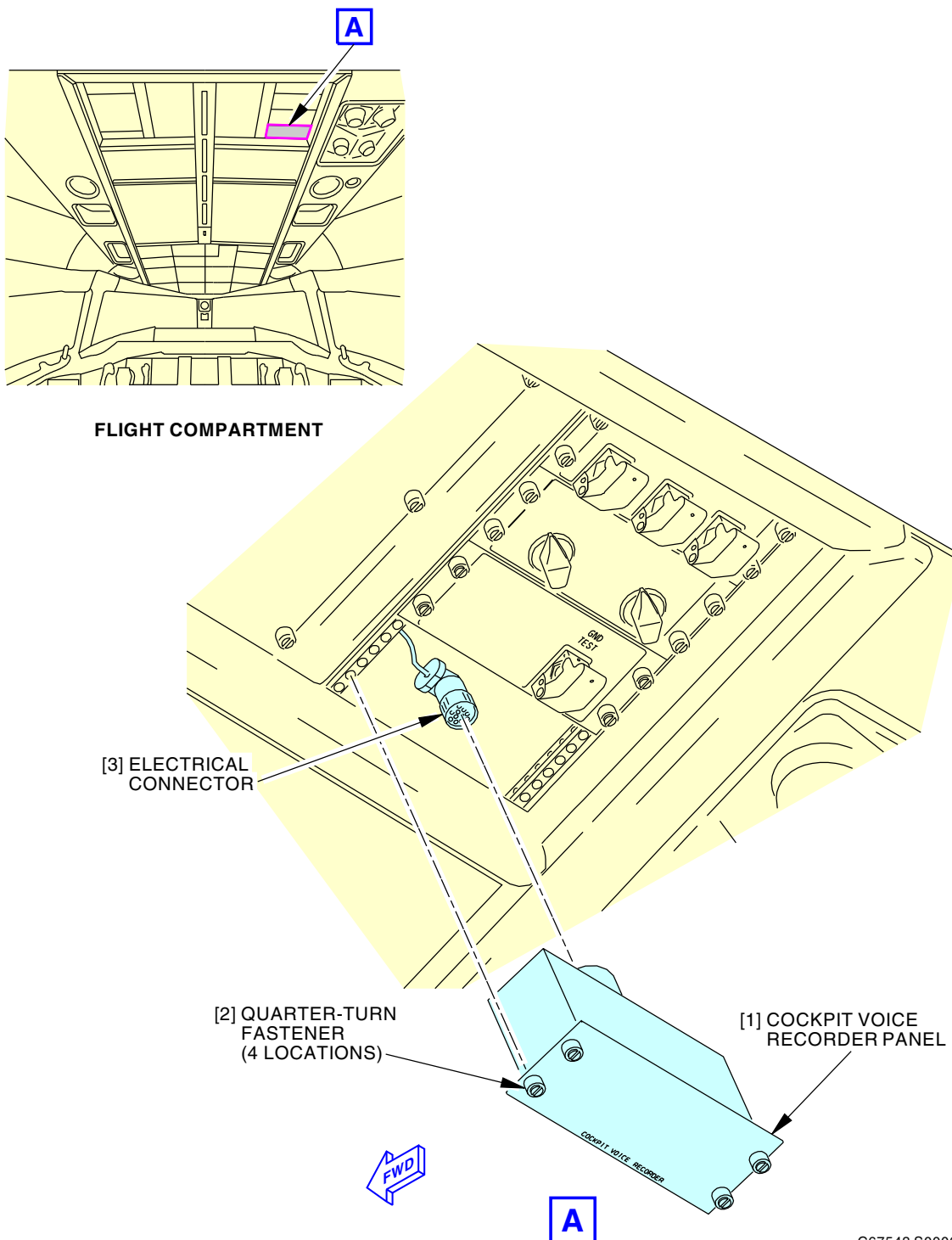
———— **END OF TASK** ————

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**Cockpit Voice Recorder Panel Installation
Figure 401/23-71-02-990-802**

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TASK 23-71-02-400-801

3. Cockpit Voice Recorder Panel Installation

(Figure 401)

A. References

Reference	Title
23-27-00 P/B 501	DATA COMMUNICATIONS MANAGEMENT FUNCTION (DCMF) - ADJUSTMENT/TEST
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)

B. Tools/Equipment

Reference	Description
STD-1390	Headphone - 600 Ohm, with 1/4 Inch Mono Audio Plug

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	CVR PANEL	23-71-51-01A-007	ARO ALL
		31-12-16-01A-070	ARO ALL

D. Location Zones

Zone	Area
162	Bulk Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

E. Installation Procedure

SUBTASK 23-71-02-860-002

- (1) Make sure that this circuit breaker is open and has safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
F	6	C23425	VOX RCDR

Make sure that these circuit breakers are open and have safety tags:

APU Auxiliary Panel, P49

Row	Col	Number	Name
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

Row	Col	Number	Name
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-02-400-001

- (2) Install the CVR PANEL [1].

NOTE: Cockpit voice recorder is referred to as CVR.

- (a) Remove the protective covers from the electrical connectors.
- (b) Examine the electrical connectors for bent or broken pins, dirt, and damage.
- (c) Connect the electrical connector [3] to the CVR PANEL [1].
- (d) Install the CVR PANEL [1].

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- (e) Tighten the quarter-turn fasteners [2] on the CVR PANEL [1].

SUBTASK 23-71-02-760-007

- (3) 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>
F	6	C23425	VOX RCDR

Remove the safety tags and close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

F. Installation Test

SUBTASK 23-71-02-760-003

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-71-02-860-005

- (2) Make sure that the Data Communication Management Function (DCMF) is serviceable (PAGEBLOCK 23-27-00/501).

SUBTASK 23-71-02-580-001

- (3) Set the parking brake.

SUBTASK 23-71-02-700-002

- (4) Set the voice recorder AUTO/ON switch to the ON position, on the therapeutic oxygen/misc switching panel, P5.

NOTE: Both engines must be off for at least 10 minutes.

SUBTASK 23-71-02-480-001

- (5) Connect a headphone, STD-1390 to the voice recorder's control panel.

SUBTASK 23-71-02-710-008

- (6) Push the TEST switch on the CVR PANEL [1] for approximately one half second. Then release it.

(a) Make sure that you hear a tone in the headphone.

(b) Make sure that the STATUS or TEST light comes on one time.

SUBTASK 23-71-02-730-002

- (7) Push and hold the ERASE switch on the CVR PANEL [1] for approximately 3 seconds. Then release it.

(a) Make sure that you hear a tone in the headphone.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 23-71-02-020-001

- (1) Disconnect the headphone from the voice recorder's control panel.

SUBTASK 23-71-02-710-002

- (2) Set the voice recorder ON/AUTO switch on the P5 panel to the AUTO position.

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SUBTASK 23-71-02-760-009

- (3) Remove the electrical power if it is not necessary for other tasks (Remove Electrical Power, TASK 24-22-00-860-806).

————— **END OF TASK** —————

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UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) A removal of the underwater locator beacon (ULB).
 - (2) A replacement of the ULB battery.
 - (3) A test of the ULB.
 - (4) An installation of the ULB.
- C. The underwater locator beacon (ULB) is attached to the front of the cockpit voice recorder. The cockpit voice recorder is on the electronics equipment rack, E7 in the aft passenger compartment above the ceiling.

TASK 23-71-03-000-801

2. Underwater Locator Beacon (ULB) Removal

(Figure 201)

NOTE: This procedure is a scheduled maintenance task.

A. **General**

- (1) The ULB [4] has a battery as the power source. The ULB [4] has no external electrical connections.

B. **References**

Reference	Title
23-71-01-000-801	Cockpit Voice Recorder Removal (P/B 401)

C. **Location Zones**

Zone	Area
264	Area Above Passenger Compartment Ceiling, Right - Section 47

D. **Removal Procedure**

SUBTASK 23-71-03-020-004

- (1) Do this task: Cockpit Voice Recorder Removal, TASK 23-71-01-000-801.

SUBTASK 23-71-03-020-005

ARO 015-999

- (2) Remove the ULB [4] from the cockpit voice recorder:
 - (a) Loosen the four screws [1] that hold the ULB [4].
 - (b) Remove the two screws [1] and the clamp from one end of the ULB.
 - (c) Remove the ULB [4].
 - (d) Keep the screws [1] and the clamp.

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- (3) Remove the ULB [4] from the cockpit voice recorder:
 - (a) Loosen the two screws [1] that hold the ULB [4].
 - (b) Remove the screws [1] from the clamp that hold the ends of the ULB.
 - (c) Remove the ULB [4] from its support brackets.

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- (d) Keep the screws [1] for installation.

———— **END OF TASK** ————

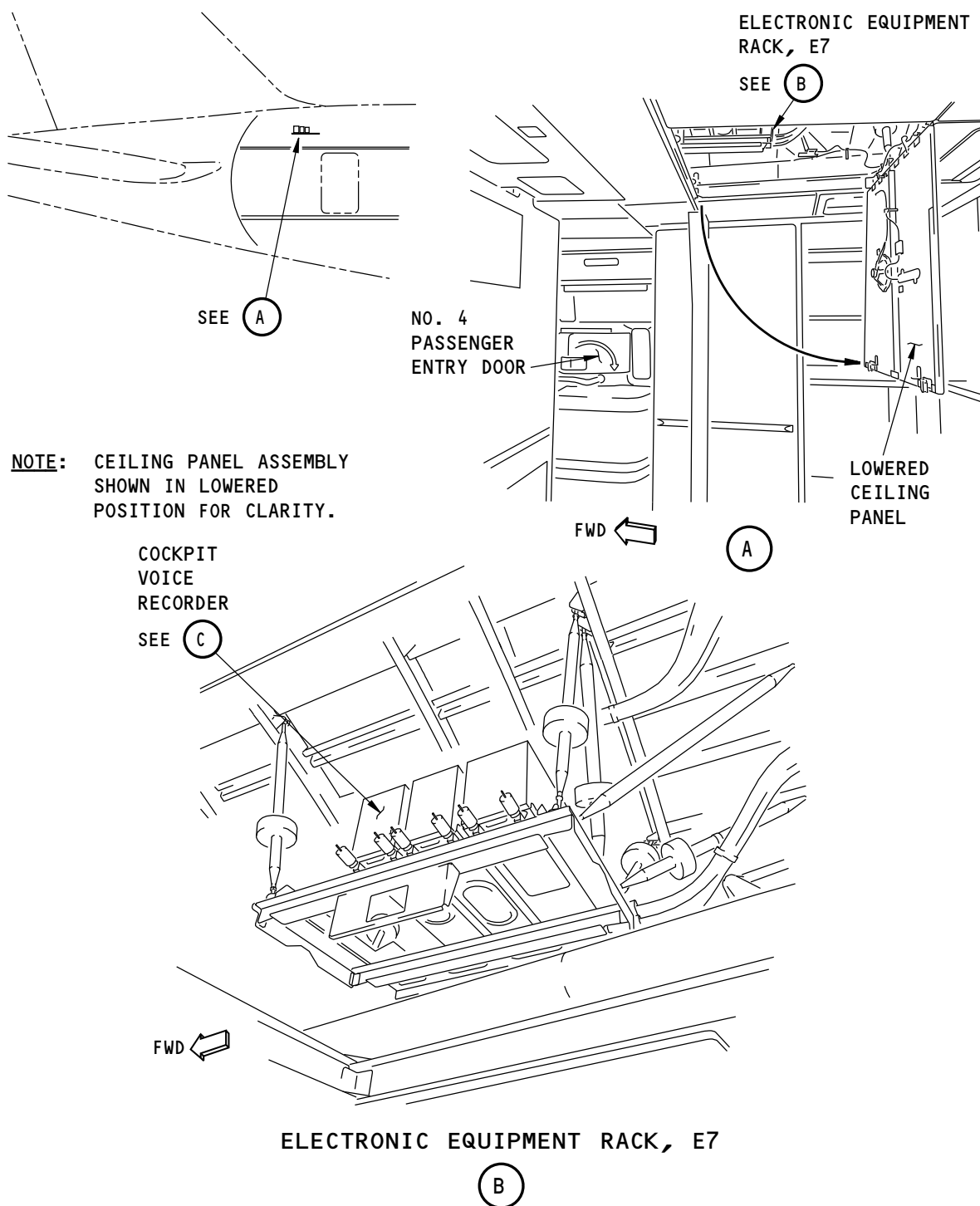
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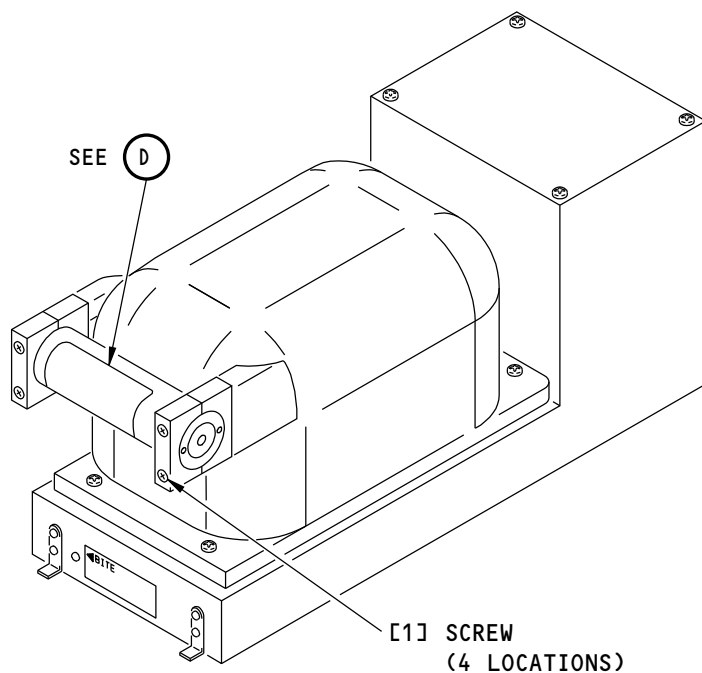
**Underwater Locator Beacon Installation
Figure 201/23-71-03-990-801 (Sheet 1 of 3)**

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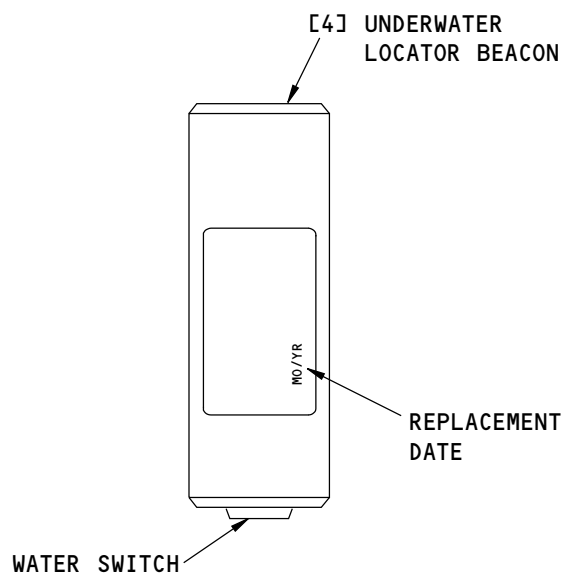
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COCKPIT VOICE RECORDER

(C)



UNDERWATER LOCATOR BEACON

(D)

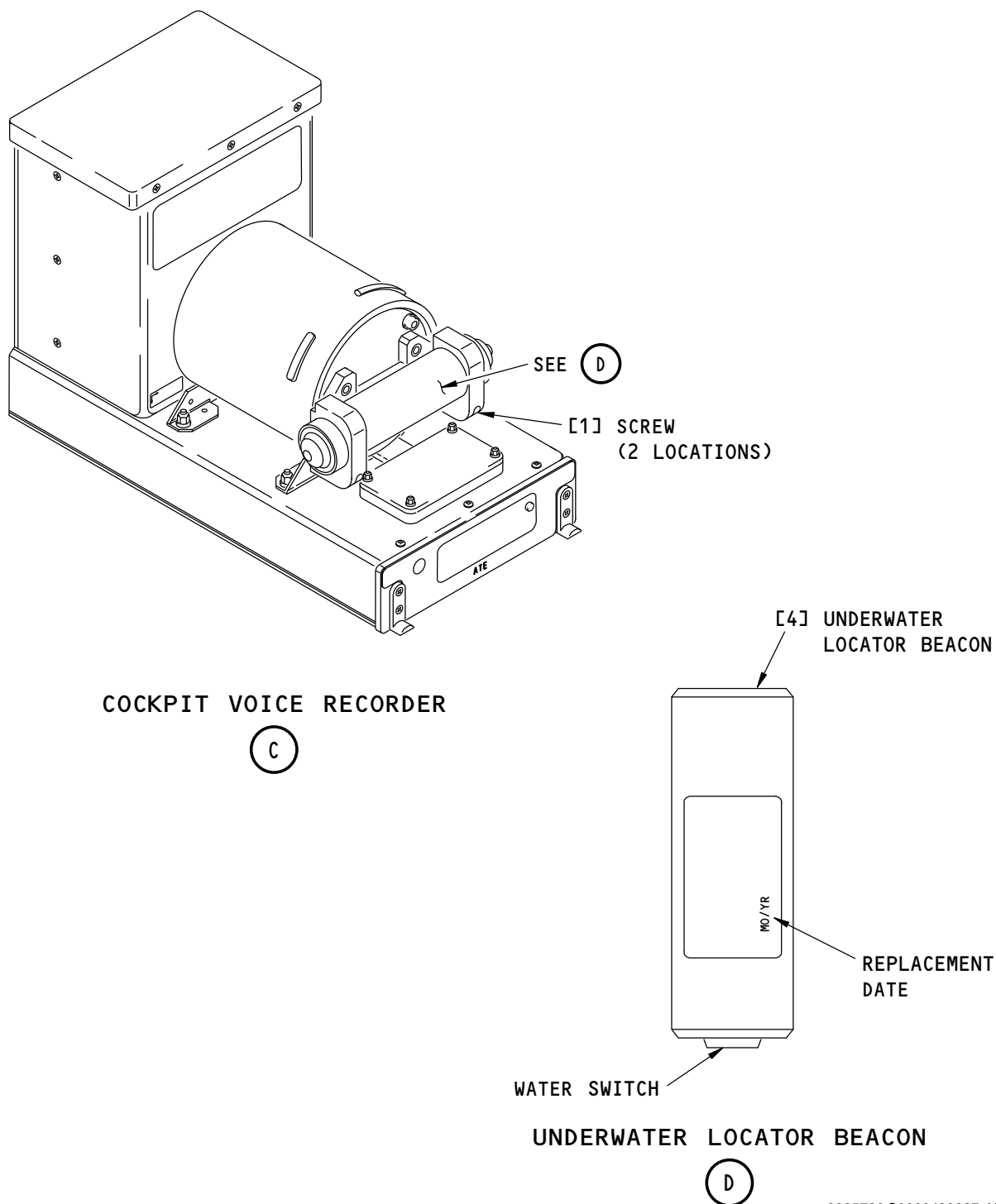
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**Underwater Locator Beacon Installation
Figure 201/23-71-03-990-801 (Sheet 2 of 3)**

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**Underwater Locator Beacon Installation
Figure 201/23-71-03-990-801 (Sheet 3 of 3)**

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TASK 23-71-03-960-801

3. Dukane Underwater Locator Beacon Battery - Replacement

(Figure 202)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) This procedure contains the steps to replace the Dukane ULB battery.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1619	Wrench - Spanner, Used on Underwater Locator Beacon Part #: 810-2007/KVS Supplier: 94970 Part #: 810-325 Supplier: 94970 Part #: B362-09111 Supplier: 61257 Opt Part #: 008407 Supplier: 26858 Opt Part #: B362-04180A Supplier: 26858
STD-1066	Hose - Radiator, Split, 1-1/4 Inch Diameter, 5 Inch Length

C. Consumable Materials

Reference	Description	Specification
D50082	Lubricant - 810-346	

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Underwater Locator Beacon	23-71-03-01-365	ARO 001-014
26	O-ring	23-71-03-01-365	ARO 001-014
28	Battery	23-71-03-01-365	ARO 001-014

E. Removal Procedure

SUBTASK 23-71-03-510-001



DO NOT REMOVE THE BATTERY FROM THE DK100/DK130 ULB. DO NOT CAUSE DAMAGE TO THE DK100/DK130 ULB. DO NOT DISCARD THE DK100/DK130 ULB. THE MANUFACTURER HAS A REPLACEMENT PROGRAM FOR EXPIRED ULBS. ON OR BEFORE THE EXPIRED DATE, SEND THE DK100/DK130 ULB TO THE MANUFACTURER FOR SERVICING. THE BATTERY CONTAINS DANGEROUS CHEMICAL MATERIALS WHICH CAN CAUSE INJURIES TO PERSONNEL.

- (1) If you have a DK100/DK130 ULB [4], send it to the manufacturer for servicing.

SUBTASK 23-71-03-020-002

- (2) If you do not have a DK100/DK130 ULB [4], remove the ULB battery [28]:



DO NOT HOLD THE ULB [4] WITH A VISE. THIS CAN CAUSE DAMAGE TO THE ULB [4].

- (a) Hold the ULB [4] body with a radiator hose - 1-1/4 Inch Diameter, 5 Inch Length, STD-1066 [22].

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- (b) Use the spanner wrench, COM-1619 [21] to remove the end cap [25] that is identified BATTERY ACCESS.
- (c) Remove the rubber shock cushion [27] from the battery end if it is not removed with the end cap [25].
- (d) Hit the ULB [4] body lightly to remove the battery [28].

F. Installation Procedure

SUBTASK 23-71-03-420-001

- (1) Make sure that the new battery is the same as the battery code on the ULB label. See the table below.

NOTE: It is necessary to replace the removed Battery Code C with a new Battery Code C. Battery Codes B and D are interchangeable.

BATTERY CODE	REQUIRED BATTERY KIT
B	810-2007/K
C	810-2008/K
D	810-2007/K

- (2) Install the ULB battery [28]:

NOTE: The Dukane 810-2007/K battery or the Dukane 810-2008/K are 6 year lithium batteries used in the Dukane model DK120 and DK140 ULB.

NOTE: Battery, O-ring and lubricant are provided in battery replacement kit.

- (a) Put a new battery replacement date label [23] on the Underwater Locator Beacon [4] body.
- (b) On the date label [23], write the next scheduled replacement date for the new ULB battery that you installed.

NOTE: The date label [23] is blank so you can write in a replacement date based on your maintenance schedule.



CAUTION

INSTALL THE ULB BATTERY [28] CORRECTLY. INCORRECT POLARITY WILL CAUSE PERMANENT DAMAGE TO THE ULB [4].

- (c) Put the new battery [28] in the ULB [4] with the end identified INSERT THIS END in first.
- (d) Remove and discard the used O-ring [26] from the end cap [25].



CAUTION

DIRT OR OTHER UNWANTED MATERIALS CAN CAUSE DAMAGE TO THE THREADS AND THE O-RING SEAL. THIS CAN PERMIT WATER LEAKAGE.

- (e) Clean the threads and the O-ring groove in the ULB [4] body.
- (f) Apply a thin layer of lubricant, D50082 to the new O-ring [26], O-ring groove, and threads.
- (g) Install the new O-ring [26] on the end cap [25].
- (h) Put the rubber shock cushion [27] smoothly on the end cap [25].
- (i) Put the end cap [25] into the ULB [4] body.

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- (j) Use the spanner wrench, COM-1619 [21] to tighten the end cap [25] until the cap flange touches the ULB [4] body.

NOTE: Only use hand force on the spanner wrench, COM-1619 [21].

SUBTASK 23-71-03-700-003

- (3) Do a test of the ULB. To do a test of the ULB, do this task: Underwater Locator Beacon Test with a PL3 Test Set, TASK 23-71-03-700-804 or Underwater Locator Beacon Test with a 42A12 Series Test Set, TASK 23-71-03-700-801 or Underwater Locator Beacon Test with a PL1 Test Set, TASK 23-71-03-700-802 or Underwater Locator Beacon Test with an ATS-260 Test Set, TASK 23-71-03-700-803 or Underwater Locator Beacon Test with a TS100 Test Set, TASK 23-71-03-700-809

———— **END OF TASK** ————

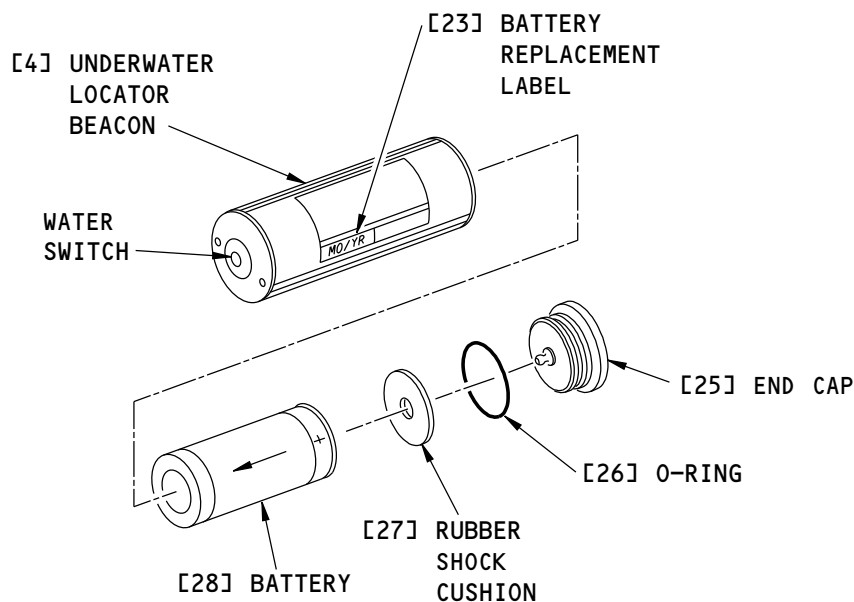
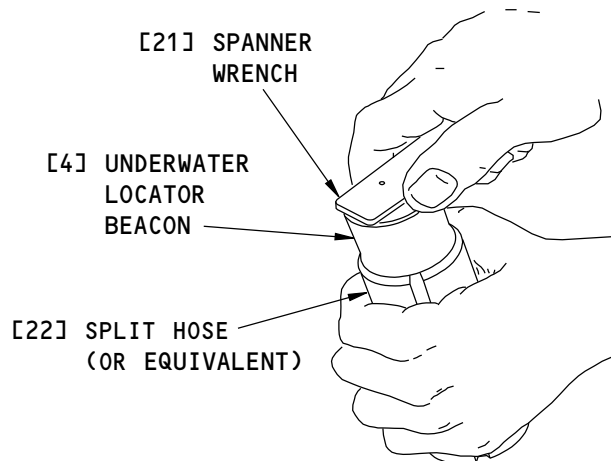
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**Underwater Locator Beacon Battery Replacement
Figure 202/23-71-03-990-802**

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TASK 23-71-03-960-802

4. Teledyne Benthos Underwater Locator Beacon Battery - Replacement

(Figure 202)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This procedure contains the steps to replace the Teledyne Benthos ULB battery.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-2543	Torque - Adapter, Used on Underwater Locator Beacon Part #: B362-09111 Supplier: 61257 Opt Part #: 008407 Supplier: 26858 Opt Part #: B362-04180A Supplier: 26858
STD-1066	Hose - Radiator, Split, 1-1/4 Inch Diameter, 5 Inch Length

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Underwater Locator Beacon	23-71-03-01-365	ARO 001-014
26	O-ring	23-71-03-01-365	ARO 001-014
28	Battery	23-71-03-01-365	ARO 001-014

D. Prepare for the Removal

SUBTASK 23-71-03-860-001

- (1) Measure the battery voltage of the ELP-362D ULB [4]. Use a high-impedance digital voltmeter with a minimum input impedance of 10 Megohms.
 - (a) Put the negative meter lead on the water switch.
 - (b) Put the positive meter lead on the bare aluminum surface of the beacon housing.
 - (c) Read the voltmeter.

E. Removal Procedure

SUBTASK 23-71-03-510-002

- (1) If the measured voltage is less than 6.0 Volts, send the ELP-362D ULB [4] to the manufacturer for servicing.

SUBTASK 23-71-03-020-003

- (2) If the measured voltage is 6.0 Volts or more, remove the battery [28] from the ELP-362D ULB [4]:



CAUTION

DO NOT HOLD THE ULB [4] WITH A VISE. THIS CAN CAUSE DAMAGE TO THE ULB [4].

- (a) Hold the ULB [4] body with a radiator hose - 1-1/4 Inch Diameter, 5 Inch Length, STD-1066.
- (b) Use the underwater locator beacon torque adapter, COM-2543 to remove the end-cap [25] identified as "BATTERY ACCESS".

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- (c) Turn the housing up to remove the battery [28] from the unit.
- (d) Discard the battery [28].

NOTE: Refer to local instructions when you discard the battery [28].

F. Installation Procedure

SUBTASK 23-71-03-420-002

- (1) Install the new ULB battery [28]:

NOTE: The Teledyne Benthos C362-04270-2 is a six year battery.

NOTE: Battery, O-ring and lubricant are provided in battery replacement kit.

- (a) Set the battery [28] until the arrow points to the top end of the unit.

NOTE: The battery label has an arrow mark.

- (b) On the date label [23], write the next scheduled replacement date for the new ULB battery that you installed.

NOTE: The date label [23] is blank so you can write in a replacement date based on your maintenance schedule.



CAUTION

INSTALL THE ULB BATTERY [28] CORRECTLY. INCORRECT POLARITY WILL CAUSE PERMANENT DAMAGE TO THE ULB [4].

- (c) Put the new battery [28] in the Underwater Locator Beacon [4] with the end identified INSERT THIS END in first.
- (d) Remove the O-ring [26] from its groove in the end-cap [25].



CAUTION

DIRT OR OTHER UNWANTED MATERIALS CAN CAUSE DAMAGE TO THE THREADS AND THE O-RING SEAL. THIS CAN PERMIT WATER LEAKAGE.

- (e) Clean the O-ring groove of dirt, lint, and other unwanted materials.
- (f) Apply the O-ring lubricant to the new O-ring [26].
- (g) Put the lubricated O-ring [26] in the end-cap groove.
- (h) Attach the end-cap [25] to the housing.
- (i) Use the underwater locator beacon torque adapter, COM-2543 to install the end-cap [25] tightly.

NOTE: Only use hand force on the underwater locator beacon torque adapter, COM-2543.
- (j) Torque the end-cap [25] to 25 to 30 inch pounds.

SUBTASK 23-71-03-700-004

- (2) Do a test of the ULB. To do a test of the ULB, do this task: Underwater Locator Beacon Test with a PL3 Test Set, TASK 23-71-03-700-804 or Underwater Locator Beacon Test with a 42A12 Series Test Set, TASK 23-71-03-700-801 or Underwater Locator Beacon Test with a PL1 Test Set, TASK 23-71-03-700-802 or Underwater Locator Beacon Test with an ATS-260 Test Set, TASK 23-71-03-700-803 or Underwater Locator Beacon Test with a TS100 Test Set, TASK 23-71-03-700-809

————— **END OF TASK** —————

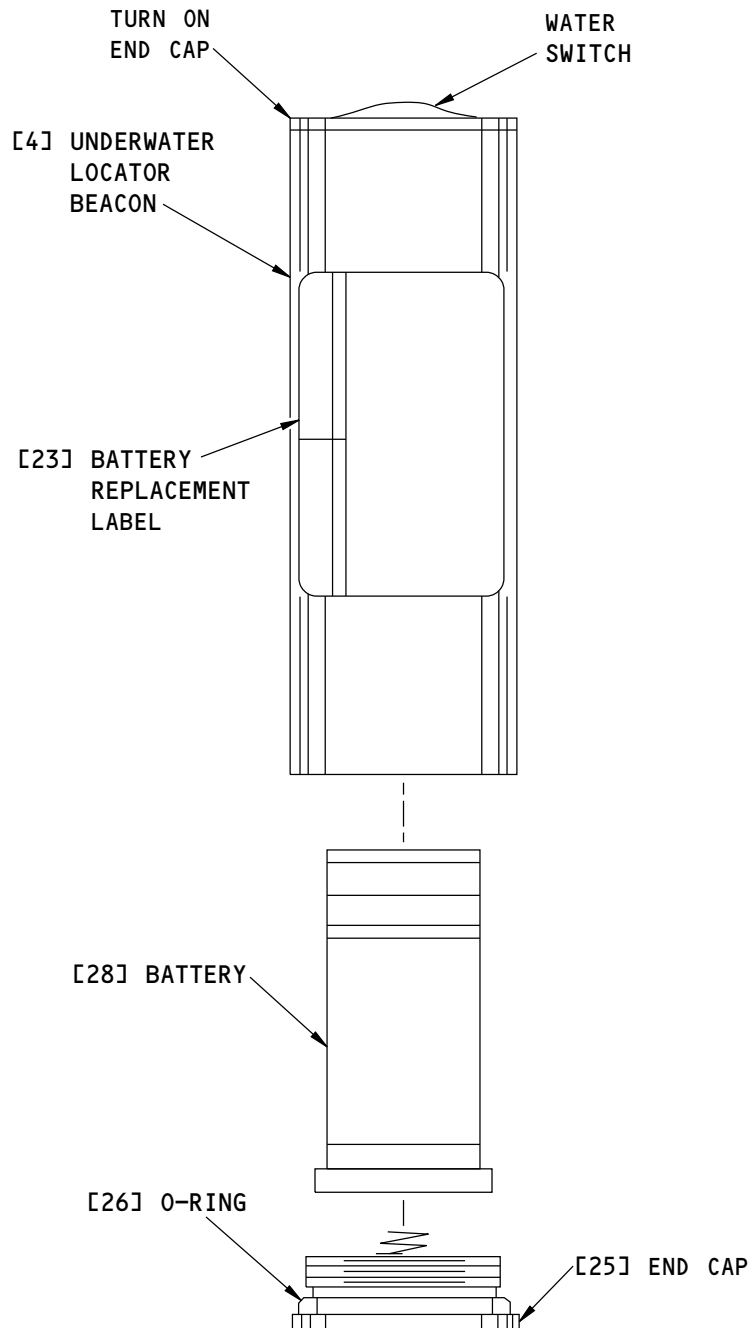
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Underwater Locator Beacon Battery Replacement
Figure 203/23-71-03-990-803

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TASK 23-71-03-700-801

5. Underwater Locator Beacon Test with a 42A12 Series Test Set

NOTE: This procedure is a scheduled maintenance task.

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-10768	Test Set - 42A12, Underwater Locator Beacon (ULB) Part #: 42A12-1 Supplier: 94970

B. Procedure

SUBTASK 23-71-03-720-006

- (1) If you have a 42A12 ULB Test Set, COM-10768, do this test of the ULB:

NOTE: 42A12 series can do a test for all Boeing approved ULBs.

- (a) Put the 42A12 ULB Test Set, COM-10768 as close as possible to the ULB.
- (b) Set the GAIN control switch on the 42A12 ULB Test Set, COM-10768 to the maximum clockwise position.

NOTE: A background noise is heard. If you do not hear noise from the test set, replace the test set battery.

- (c) Set the TUNING control switch to the middle position.
- (d) Make sure that the 42A12 ULB Test Set, COM-10768 operates correctly.
 - 1) Rub your thumb and fingers together in front of the microphone to make sure that it operates.

NOTE: This will produce a rushing noise from the speaker.

- a) Make sure that you hear sounds through the speaker.

- (e) Use tape to attach a piece of wire, a shorting tab, or other conductive material to the ULB case and to the center of the water switch.

NOTE: This will make a short circuit from the center of the water switch to the outer part of the ULB.

- (f) Set the GAIN control switch to a comfortable listening level.
- (g) Point the microphone of the test set towards the water switch end of the beacon for best results.
 - 1) Make sure that you hear a pulse tone.
- (h) Set the GAIN control switch to the OFF position.
- (i) Make sure that the water switch on the ULB has no grease or dirt.
- (j) If necessary, do the steps that follow:
 - 1) Clean the switch with water and detergent.
 - 2) Dry the switch with a clean cloth.

———— **END OF TASK** ————

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TASK 23-71-03-700-802

6. Underwater Locator Beacon Test with a PL1 Test Set

NOTE: This procedure is a scheduled maintenance task.

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-10771	Test Set - Underwater Locator Beacon (ULB) Part #: 42A12-1 Supplier: 94970 Opt Part #: PL1 Supplier: 94970

B. Consumable Materials

Reference	Description	Specification
B00541	Cleaner - General Purpose Household Detergent	
G00270	Tape - Scotch Flatback Masking 250	ASTM D6123 (Supersedes A-A-883)

C. Procedure

SUBTASK 23-71-03-720-002

- (1) If you have a ULB Test Set, COM-10771, do this test of the ULB [4]:

NOTE: PL1 can only do a test for the DK100 ULB.

- (a) Use Scotch Flatback Masking Tape 250, G00270 to attach a piece of wire or other conductive material to the ULB [4] case and the center of the water switch.

NOTE: This will make a short circuit from the center of the water switch to the outer part of the ULB [4].

- (b) Put the end of the ULB Test Set, COM-10771 against the ULB [4], approximately one inch from the water switch.
- (c) Push and hold the operation switch on the ULB Test Set, COM-10771.
- 1) Make sure that the BEACON ACTIVE WHEN FLASHING light flashes.
 - 2) Remove the piece of wire or other conductive material from the ULB [4] case and the center of the water switch.
 - 3) Make sure the BEACON ACTIVE WHEN FLASHING light does not flash.
- (d) Release the operation switch on the ULB Test Set, COM-10771.
- (e) Remove the ULB Test Set, COM-10771.
- (f) Make sure that the water switch end of the ULB [4] has no grease or dirt.
- 1) If necessary, clean the water switch with a weak general purpose household detergent cleaner, B00541.

————— END OF TASK —————

TASK 23-71-03-700-804

7. Underwater Locator Beacon Test with a PL3 Test Set

NOTE: This procedure is a scheduled maintenance task.

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A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt.", which stands for Optional.

Reference	Description
COM-10772	Test Set - Underwater Locator Beacon (ULB) Part #: 42A12-1 Supplier: 94970

B. Consumable Materials

Reference	Description	Specification
B00541	Cleaner - General Purpose Household Detergent	

C. Procedure

SUBTASK 23-71-03-720-004

- (1) If you have a ULB test set, COM-10772, do this test of the ULB [4]:

NOTE: PL3 can only do a test for the DK100 and DK120 ULBs.

- (a) Push and hold the ULB test set, COM-10772, against the ULB [4] water switch.
 - 1) Make sure that you hear a pulse sound.
 - 2) Make sure that you see the LED light comes on and off.
- (b) Remove the ULB test set, COM-10772.
- (c) Make sure that the water switch end of the ULB [4] has no grease or dirt.
 - 1) If necessary, clean the water switch with a weak general purpose household detergent cleaner, B00541.

————— END OF TASK —————

TASK 23-71-03-700-803

8. Underwater Locator Beacon Test with an ATS-260 Test Set

NOTE: This procedure is a scheduled maintenance task.

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt.", which stands for Optional.

Reference	Description
COM-978	Test Set - ATS-260, Underwater Locator Beacon (ULB) Part #: ATS-260 Supplier: 26858

B. Consumable Materials

Reference	Description	Specification
B00541	Cleaner - General Purpose Household Detergent	

C. Procedure

SUBTASK 23-71-03-720-003

- (1) If you have an ATS-260 ULB test set, COM-978, do this test of the ULB [4]:

NOTE: ATS-260 can only do a test for the ELP-362D ULB.

- (a) Put the ATS-260 ULB test set, COM-978 clip on the ULB [4].

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- (b) Push and hold the PUSH TO TEST button.
- (c) Put the ATS-260 ULB test set, COM-978 probe on the ULB [4] water switch.
 - 1) Make sure a green LED shows.
 - 2) Make sure that you can hear sounds from the ATS-260 ULB test set, COM-978 and/or the amber LED flashes.
- (d) Release the PUSH TO TEST button.
- (e) Remove the ATS-260 ULB test set, COM-978.
- (f) Make sure that the water switch end of the ULB [4] has no grease or dirt.
 - 1) If necessary, clean the water switch with a weak general purpose household detergent cleaner, B00541.

————— **END OF TASK** —————

TASK 23-71-03-700-809

9. Underwater Locator Beacon Test with a TS100 Test Set

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-10769	Test Set - TS100, Underwater Locator Beacon (ULB) Part #: TS200 Supplier: 94970 Opt Part #: TS100 Supplier: 94970

B. Procedure

SUBTASK 23-71-03-720-005

- (1) If you have a TS100 ULB Test Set, COM-10769, do this test of the ULB:

NOTE: TS100 can only do a test for the DK100 and DK120 ULBs.

- (a) Connect the probe head of the TS100 ULB Test Set, COM-10769 to the ULB in its mount.
- (b) Slide the switch on the side of the TS100 ULB Test Set, COM-10769 housing to ON.
 - 1) Make sure that the LCD shows "TESTING".
- (c) Push the button in the center of the TS100 ULB Test Set, COM-10769 to start a retest.
 - 1) Make sure that the LCD display shows "TESTING".
- (d) In seconds, the LCD will change to show one of these Pass / Fault messages:

LCD Message	Explanation
Beacon Passed	Beacon is operating properly
Battery Fault	Beacon is NOT operating properly
No Pulse Output	Beacon is NOT operating properly
Pulse Fault	Beacon is NOT operating properly
Free-Run Fault	Beacon is NOT operating properly
Test Set Fault	Test Set batteries must be replaced
Need Service	Beacon is NOT operating properly

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LCD Message	Explanation
Open Probe/Batt.	Probe head is not properly attached or the beacon battery is dead. 1) Make sure that the LCD shows "Beacon Passed". <u>NOTE:</u> THE PASS / FAULT MESSAGE WILL BE DISPLAYED FOR APPROXIMATELY 10 SECONDS BEFORE RETURNING TO "READY FOR TEST". (e) Remove the TS100 ULB Test Set, COM-10769. (f) Make sure that the water switch end of the ULB has no grease or dirt. (g) If necessary, do the steps that follow: 1) Clean the switch with water and detergent. 2) Dry the switch with a clean cloth.

————— **END OF TASK** —————

TASK 23-71-03-700-808

10. Underwater Locator Beacon Test with a TS200 Test Set

NOTE: This procedure is a scheduled maintenance task.

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt.", which stands for Optional.

Reference	Description
COM-10770	Test Set - TS200, Underwater Locator Beacon (ULB) Part #: TS200 Supplier: 94970

B. Procedure

SUBTASK 23-71-03-700-006

- (1) If you have a TS200 ULB test set, COM-10770, do this test of the ULB:

NOTE: TS200 can do a test for all Dukane ULBs.

- (a) Attach the test probe clip of the TS200 ULB test set, COM-10770 to the beacon in its mount.
- (b) Put the tip of the probe on the silver pad of the water switch at the end of the beacon.
- (c) Refer to the applicable battery code for the minimum permitted range of the beacon battery voltage:

NOTE: Examine the battery replacement label to find the battery code.

- 1) Code A – 3.55 Volts
 - 2) Code B – 2.97 Volts
 - 3) Code C – 2.97 Volts
 - 4) Code D – 2.97 Volts
 - 5) Code F – 2.97 Volts
- (d) Push the red button on the TS200 ULB test set, COM-10770.

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- 1) The beacon starts and you hear a pinging noise from the TS200 ULB test set, COM-10770.
- (e) Remove the test probe clip of the TS200 ULB test set, COM-10770 from the ULB.
- (f) Replace the ULB if necessary.

————— **END OF TASK** —————

TASK 23-71-03-400-801

11. Underwater Locator Beacon (ULB) Installation

(Figure 201)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
23-71-01-400-801	Cockpit Voice Recorder Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
B00541	Cleaner - General Purpose Household Detergent	

C. Location Zones

Zone	Area
264	Area Above Passenger Compartment Ceiling, Right - Section 47

D. Installation Procedure

SUBTASK 23-71-03-420-005

- (1) Install the ULB [4] on the cockpit voice recorder:
 - (a) Make sure that the water switch end of the ULB [4] has no grease or dirt.
 - 1) Clean the water switch with a weak general purpose household detergent cleaner, B00541.
 - (b) Put the ULB [4] on its support brackets.
 - 1) Make sure that you put the ULB with its water-sensitive switch end on left.
 - (c) Put the support clamps over the ends of the ULB.
 - (d) Install the screws to the support clamps that hold the ends of the ULB.
 - (e) Make sure that you can read the replacement/expiration date on the ULB [4].
 - (f) Tighten the two ULB mounting screws [1] to 23 ±3 in-lb (3 ±1 N·m) to hold the ULB in position.

SUBTASK 23-71-03-700-005

- (2) Make sure that the ULB is operational.
 - (a) If you can not verify that the ULB is operational, do one of these tasks:
 - Underwater Locator Beacon Test with a PL3 Test Set, TASK 23-71-03-700-804 or Underwater Locator Beacon Test with a 42A12 Series Test Set, TASK 23-71-03-700-801 or Underwater Locator Beacon Test with a PL1 Test Set, TASK 23-71-03-700-802 or Underwater Locator Beacon Test with an ATS-260 Test Set, TASK 23-71-03-700-803 or Underwater Locator Beacon Test with a TS100 Test Set, TASK 23-71-03-700-809
 - Underwater Locator Beacon Test with a TS200 Test Set, TASK 23-71-03-700-808.

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SUBTASK 23-71-03-420-004

(3) Do this task: Cockpit Voice Recorder Installation, TASK 23-71-01-400-801.

———— **END OF TASK** ————

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COCKPIT VOICE RECORDER MICROPHONE - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the cockpit voice recorder microphone
 - (2) An installation of the cockpit voice recorder microphone.
- B. The cockpit voice recorder microphone is installed on the overhead panel, P5, in the flight compartment.

TASK 23-71-04-000-801

2. Cockpit Voice Recorder Microphone Removal

(Figure 401)

A. Location Zones

<u>Zone</u>	<u>Area</u>
162	Bulk Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

B. Removal Procedure

SUBTASK 23-71-04-760-001

- (1) 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>
F	6	C23425	VOX RCDR

Open these circuit breakers and install safety tags:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-04-010-001

- (2) Remove the signs module assembly [2] from the overhead panel.
- (a) Loosen the quarter-turn fasteners [1].

SUBTASK 23-71-04-000-001

- (3) Remove the cockpit voice recorder microphone [4]:
- (a) Remove and keep the screws [3] that attach the cockpit voice recorder microphone [4] to the signs module assembly [2].
 - (b) Disconnect the electrical connector from the cockpit voice recorder microphone [4].
 - (c) Put protective covers on the electrical connectors on the cockpit voice recorder microphone [4] and on the wire bundle.

————— **END OF TASK** —————

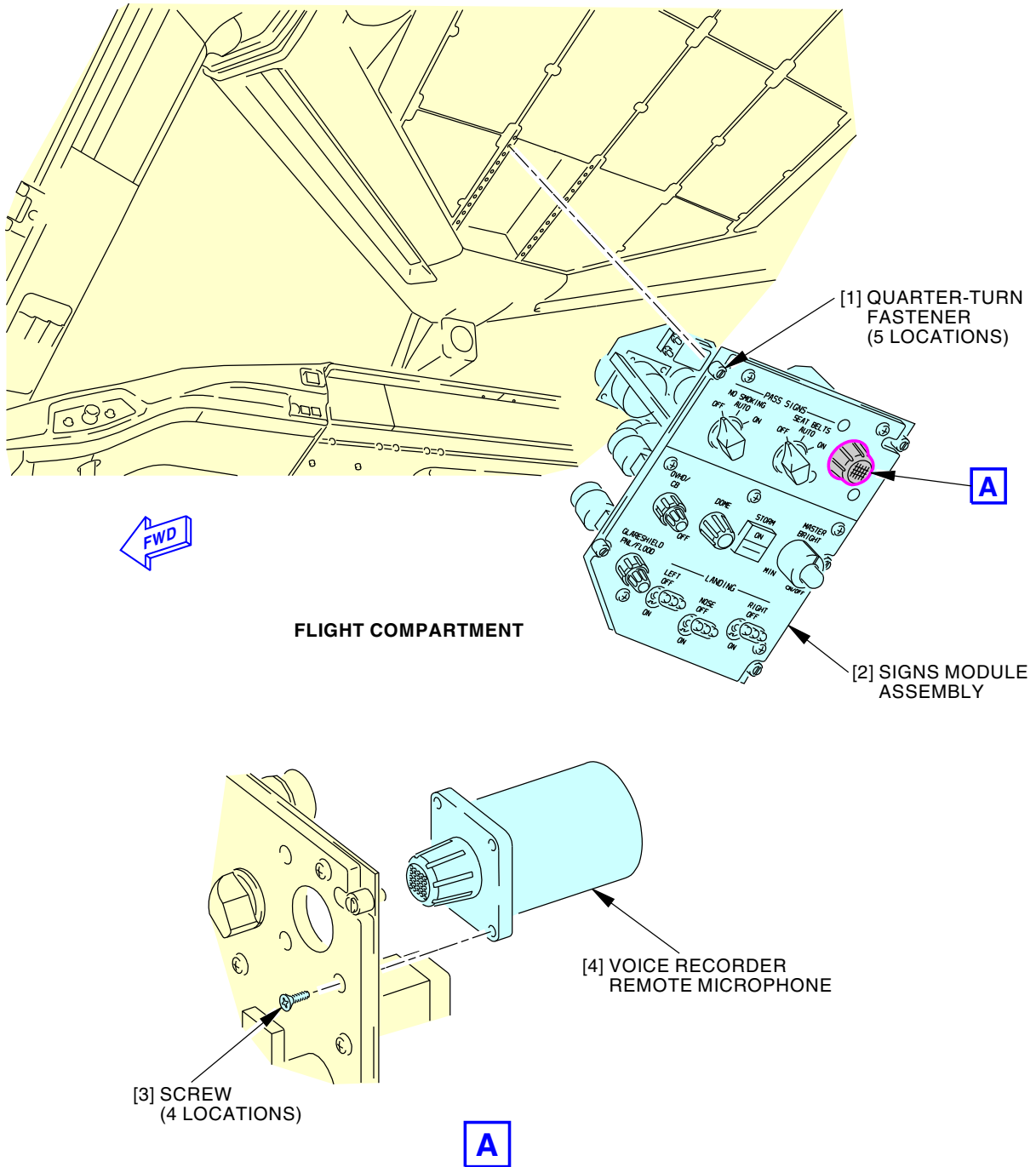
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Voice Recorder Remote Microphone Installation
Figure 401/23-71-04-990-802

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TASK 23-71-04-400-801

3. Cockpit Voice Recorder Microphone Installation

(Figure 401)

A. References

Reference	Title
23-27-00 P/B 501	DATA COMMUNICATIONS MANAGEMENT FUNCTION (DCMF) - ADJUSTMENT/TEST
24-22-00-860-805	Supply Electrical Power (P/B 201)
24-22-00-860-806	Remove Electrical Power (P/B 201)

B. Tools/Equipment

Reference	Description
STD-1390	Headphone - 600 Ohm, with 1/4 Inch Mono Audio Plug

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Microphone	23-71-04-01A-005	ARO ALL
		23-71-51-01A-008	ARO ALL
		31-12-11-01B-110	ARO ALL

D. Location Zones

Zone	Area
162	Bulk Cargo Compartment, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

E. Installation Procedure

SUBTASK 23-71-04-860-001

- (1) Make sure that this circuit breaker is open:

Left Power Management Panel, P110

Row	Col	Number	Name
F	6	C23425	VOX RCDR

Make sure that these circuit breakers are open and have safety tags:

APU Auxiliary Panel, P49

Row	Col	Number	Name
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

Row	Col	Number	Name
J	13	C23672	MAIN BAT BKUP PWR CVR

SUBTASK 23-71-04-400-001

- (2) Install the cockpit voice recorder microphone [4]:
- Remove the protective covers from the electrical connectors.
 - Examine the electrical connectors for bent or broken pins, dirt, and damage.
 - Attach the electrical connector to the cockpit voice recorder microphone [4].
 - Put the cockpit voice recorder microphone [4] into the signs module assembly [2].

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- (e) Install the screws [3].

SUBTASK 23-71-04-410-001

- (3) Install the signs module assembly [2] into the overhead panel.

- (a) Tighten the quarter-turn fasteners [1].

SUBTASK 23-71-04-760-002

- (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>
F	6	C23425	VOX RCDR

Remove the safety tags and close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C23671	APU BAT BKUP PWR CVR

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	13	C23672	MAIN BAT BKUP PWR CVR

F. Installation Test

SUBTASK 23-71-04-760-003

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-71-04-860-005

- (2) Make sure that the Data Communication Management Function (DCMF) is serviceable (PAGEBLOCK 23-27-00/501).

SUBTASK 23-71-04-480-001

- (3) Connect a headphone, STD-1390 to the voice recorder's control panel on the maintenance panel, P61.

SUBTASK 23-71-04-860-002

- (4) Set the voice recorder AUTO/ON switch to the ON position.

NOTE: Both engines must be off for at least 10 minutes.

SUBTASK 23-71-04-710-001

- (5) Speak an usual voice into the area microphone.

NOTE: Keep 3 to 4 feet away from the voice recorder's area microphone while you speak.

- (a) Make sure that you hear your voice in the headphone.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 23-71-04-080-001

- (1) Disconnect the headphone from the voice recorder's control panel.

SUBTASK 23-71-04-700-001

- (2) Set the voice recorder AUTO/ON switch to the AUTO position.

SUBTASK 23-71-04-760-009

- (3) Remove the electrical power if it is not necessary for other tasks Remove Electrical Power, TASK 24-22-00-860-806.

————— END OF TASK —————

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PC POWER SYSTEM (FLIGHT COMPARTMENT) - ADJUSTMENT/TEST

1. General

- A. This procedure contains an operational test for the PC Power System. Do this test when you replace a PC Power System component.

NOTE: The WDM for the PC Power system are in 25-25-XX. The IPC for the PC Power components are in chapters 23, 24 or 25 (depending on the location of the components).

TASK 23-82-00-710-801

2. PC Power System - Operational Test

A. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

C. Procedure

SUBTASK 23-82-00-861-001

- (1) Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-82-00-865-001

- (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>
H	16	C25332	PWR OUTLETS FLT DK & CREW RST

SUBTASK 23-82-00-860-001

- (3) Make sure that the PC Power System has electrical power:

- (a) Make sure that the IFE/PASS SEAT switch in the flight compartment is ON (if applicable).

SUBTASK 23-82-00-710-001

- (4) Examine the outlet unit LEDs on the captain and first officer's consoles (P13 and P14).

- (a) Make sure that the outlet unit status LEDs are on and green in color. This shows that there were no faults during the BITE test.

———— **END OF TASK** ————

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OUTLET UNIT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) The removal of an outlet unit.
- (2) The installation of an outlet unit.

NOTE: The WDM for the PC Power system are in 25-25-XX. The IPC for the PC Power components are in chapters 23, 24 or 25 (depending on the location of the components).

B. The outlet unit(s) is installed at:

- (1) Above the interphone speakers in the captain and first officer's forward consoles (P13 and P14).

TASK 23-82-01-000-801

2. Outlet Unit Removal

Figure 401

A. Location Zones

Zone	Area

211	Flight Compartment, Left
212	Flight Compartment, Right

B. Removal Procedure

SUBTASK 23-82-01-865-001

- (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	16	C25332	PWR OUTLETS FLT DK & CREW RST

SUBTASK 23-82-01-020-001

- (2) Do the steps that follow to remove the outlet unit (OU) [1]:
 - (a) Remove the fasteners that attach the adapter plate to the console.
 - (b) Pull the adapter plate out of the console.

NOTE: Do not pull out too hard, the wires are still attached to the back of the outlet.
 - (c) For the outlets on the captain and first officer forward consoles, remove the keyboard jack for easy access to the OU [1] if necessary.
 - (d) Loosen the screws [2] on the front panel of the OU [1].
 - (e) Remove the OU [1] from the adapter plate.
 - (f) If the OU cable is attached to the adapter plate, disconnect it from the adapter plate.
 - (g) Disconnect the electrical connectors.
 - (h) Remove the OU [1].
 - (i) Put protective covers on the electrical connectors.

————— **END OF TASK** —————

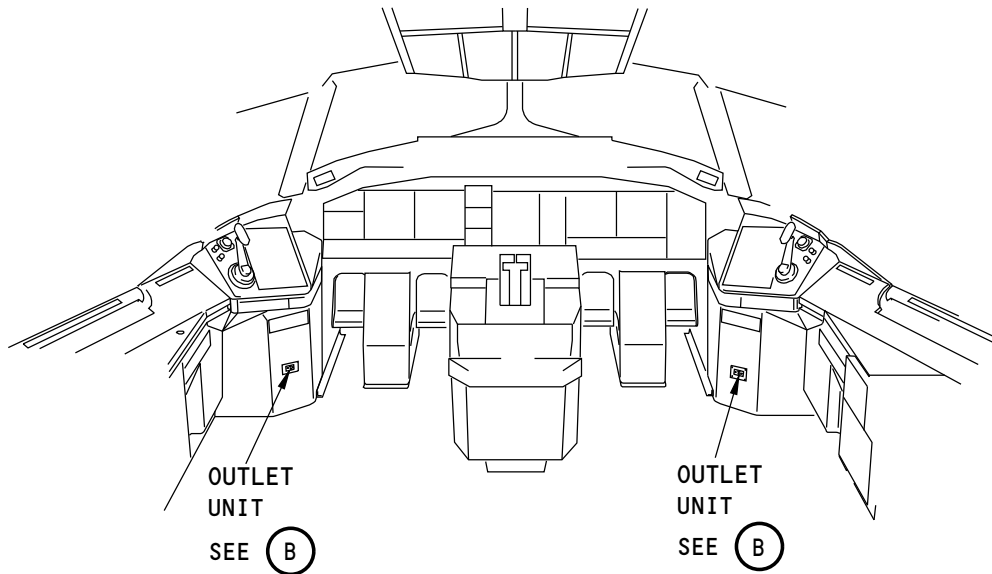
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FLIGHT COMPARTMENT

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Outlet Unit Installation
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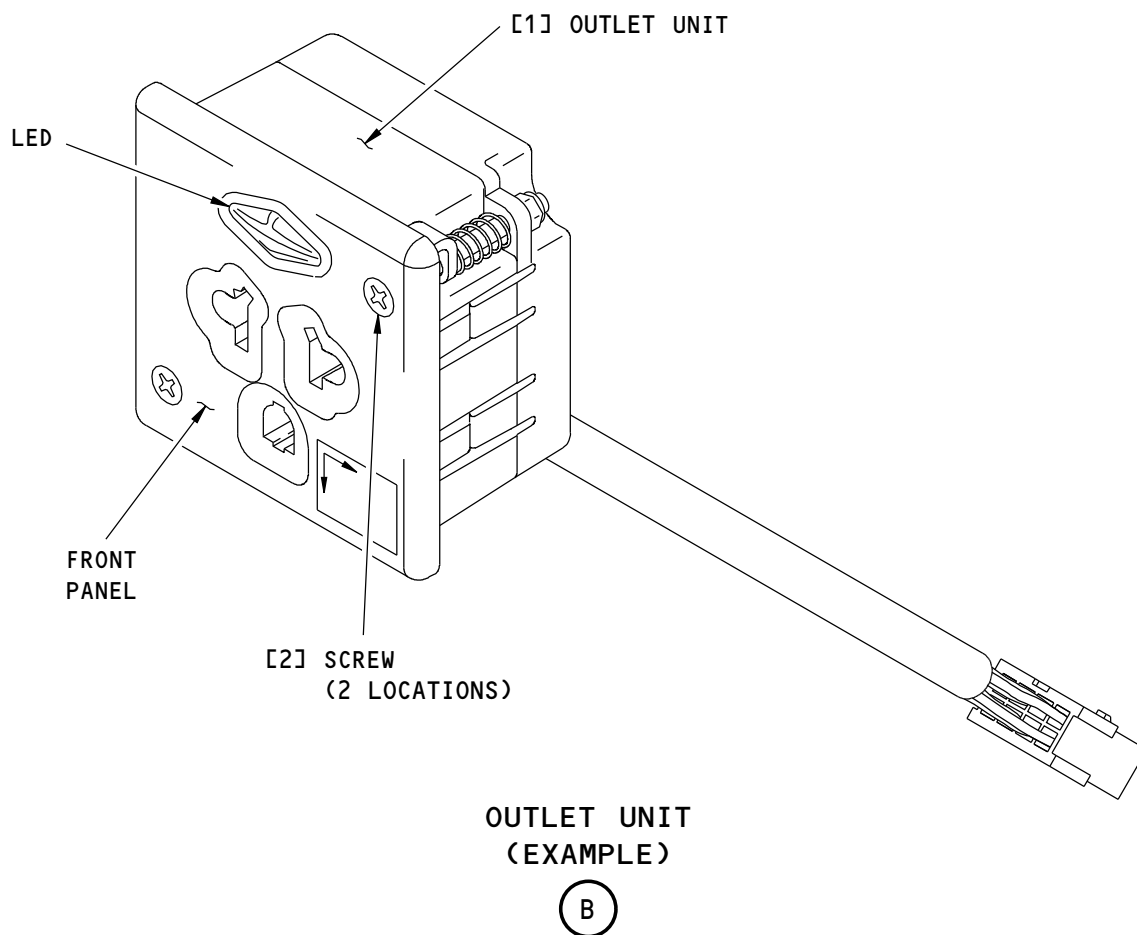
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Outlet Unit Installation
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TASK 23-82-01-400-801

3. Outlet Unit Installation

Figure 401

A. References

Reference	Title
23-82-00-710-801	PC Power System - Operational Test (P/B 501)

B. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

C. Installation Procedure

SUBTASK 23-82-01-865-002

- (1) Make sure that this circuit breaker is open and has safety tag:

Right Power Management Panel, P210

Row	Col	Number	Name
H	16	C25332	PWR OUTLETS FLT DK & CREW RST

SUBTASK 23-82-01-420-001

- (2) Do the steps that follow to install the Outlet Unit (OU) [1]:



CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (a) Remove the electrical connector covers.
- (b) Connect the electrical connectors to the OU [1].
- (c) If applicable, attach the OU cable to the adapter plate.
- (d) Put the OU assembly into the adapter cutout.
- (e) Tighten the screws [2] on the front panel of the OU [1] to 5 ± 1 in-lb (1 ± 1 N·m) to attach the OU [1] to the adapter plate.
- (f) If applicable, install the keyboard jack to the adapter plate.
- (g) Install the fasteners to attach the adapter plate to the console.

SUBTASK 23-82-01-865-003

- (3) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

Row	Col	Number	Name
H	16	C25332	PWR OUTLETS FLT DK & CREW RST

D. Installation Test

SUBTASK 23-82-01-710-001

- (1) Do an operational test of the PC power system:
- (a) Do this task: PC Power System - Operational Test, TASK 23-82-00-710-801.

————— END OF TASK —————

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IN-SEAT POWER SUPPLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) The removal of an In-Seat Power Supply (ISPS).
- (2) The installation of an In-Seat Power Supply (ISPS).

NOTE: The WDM for the PC Power system are in 25-25-XX. The IPC for the PC Power components are in chapters 23, 24 or 25 (depending on the location of the components).

B. The ISPS is installed at one of these locations in the flight compartment:

- (1) The first officer's side console.
- (2) The second observer's console (P18).

TASK 23-82-03-000-801

2. In-Seat Power Supply Removal

Figure 401

A. References

Reference	Title
35-11-18-000-801	Stowage Box Assembly Removal (P/B 201)

B. Location Zones

Zone	Area
212	Flight Compartment, Right
223	Area Above Passenger Compartment Ceiling, Left - Section 41

C. Removal Procedure

SUBTASK 23-82-03-865-001

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

Right Power Management Panel, P210

Row	Col	Number	Name
H	16	C25332	PWR OUTLETS FLT DK & CREW RST

SUBTASK 23-82-03-010-001

- (2) To get access to the In-Seat Power Supply (ISPS) [1], remove the oxygen stowage box assembly [5] from the flight compartment's right side console.
 - (a) Do this task: Stowage Box Assembly Removal, TASK 35-11-18-000-801.

SUBTASK 23-82-03-020-001

- (3) Do the steps that follow to remove the ISPS [1]:



CAUTION

DO NOT TOUCH THE ELECTRICAL CONNECTOR CONTACT PINS. STATIC ELECTRICAL CHARGES THAT COLLECT ON THE SKIN CAN CAUSE DAMAGE TO THE ELECTROSTATIC SENSITIVE COMPONENTS INSTALLED IN THIS DEVICE.

- (a) Disconnect the electrical connectors [3] from the ISPS [1].
- (b) Remove the quarter-turn fasteners [2].
- (c) Remove the ISPS [1] from the mounting bracket [4].

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- (d) If termination plugs are installed, remove and keep the termination plugs.
- (e) Put protective covers on the electrical connectors [3].

———— **END OF TASK** ————

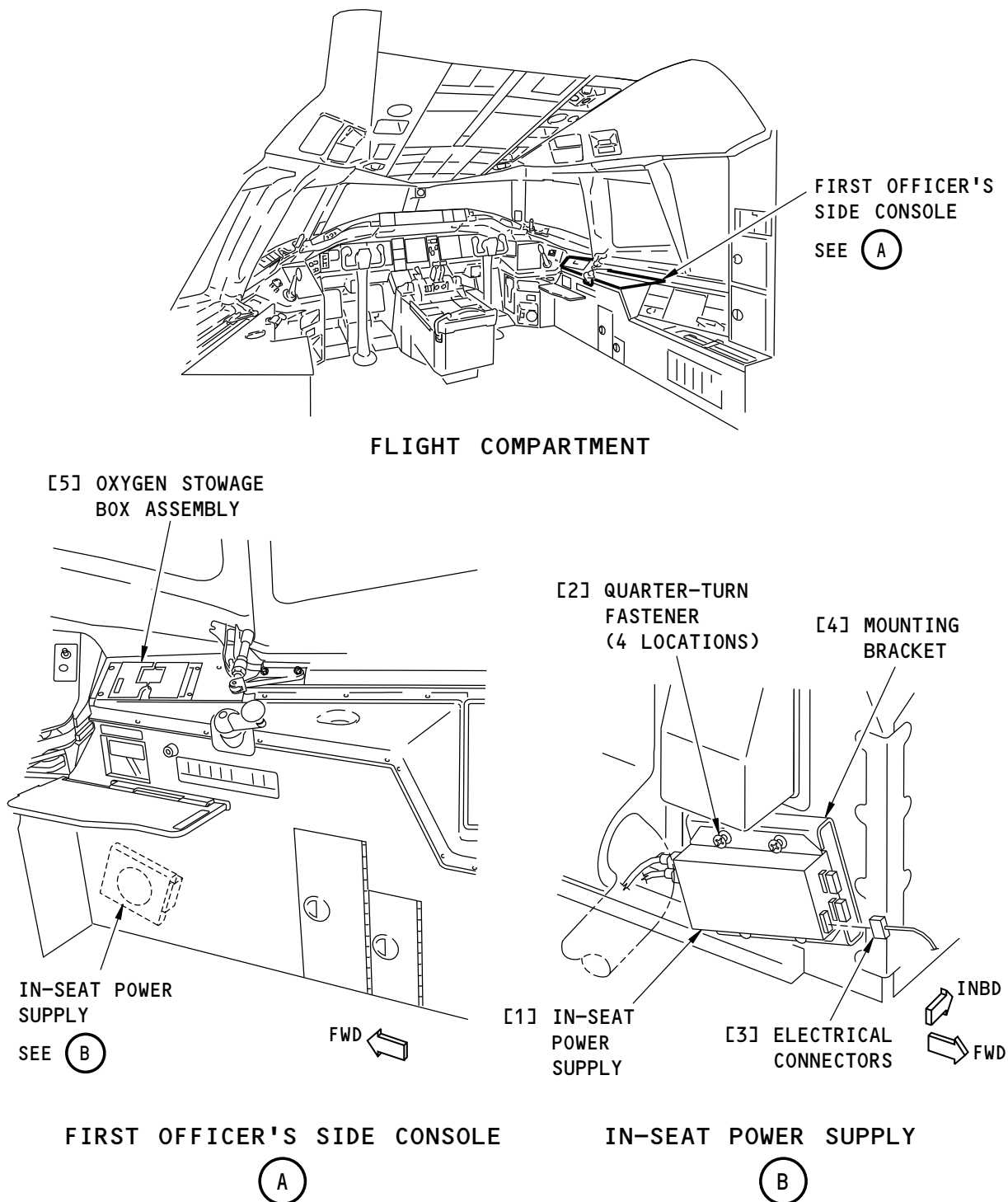
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In-Seat Power Supply Installation
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TASK 23-82-03-400-801

3. In-Seat Power Supply Installation

Figure 401

A. References

Reference	Title
23-82-00-710-801	PC Power System - Operational Test (P/B 501)
35-11-18-400-802	Stowage Box Assembly Installation (P/B 201)

B. Location Zones

Zone	Area
212	Flight Compartment, Right
223	Area Above Passenger Compartment Ceiling, Left - Section 41

C. Installation Procedure

SUBTASK 23-82-03-865-002

- (1) Make sure that this circuit breaker is open and has safety tag:

Right Power Management Panel, P210

Row	Col	Number	Name
H	16	C25332	PWR OUTLETS FLT DK & CREW RST

SUBTASK 23-82-03-420-001

- (2) Do the steps that follow to install the In-Seat Power Supply (ISPS) [1]:



CAUTION

DO NOT TOUCH THE ELECTRICAL CONNECTOR CONTACT PINS. STATIC ELECTRICAL CHARGES THAT COLLECT ON THE SKIN CAN CAUSE DAMAGE TO THE ELECTROSTATIC SENSITIVE COMPONENTS INSTALLED IN THIS DEVICE.

- (a) Remove the electrical connector covers.
- (b) Examine the electrical connectors [3] for bent or broken pins, dirt, and damage.
- (c) If you removed termination plugs from the removal procedure, install the termination plugs on the new ISPS [1].
- (d) Attach the ISPS [1] to the mounting bracket [4].
 - 1) Install the quarter-turn fasteners [2].
- (e) Connect the electrical connectors [3] to the ISPS [1].

SUBTASK 23-82-03-865-003

- (3) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

Row	Col	Number	Name
H	16	C25332	PWR OUTLETS FLT DK & CREW RST

D. Installation Test

SUBTASK 23-82-03-710-001

- (1) Do an operational test of the PC power system:
- (a) Do this task: PC Power System - Operational Test, TASK 23-82-00-710-801.

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E. Put the Airplane Back to Its Initial Condition

SUBTASK 23-82-03-410-002

- (1) If applicable, install the oxygen stowage box assembly [5] in the flight compartment's right side console.
 - (a) Do this task: Stowage Box Assembly Installation, TASK 35-11-18-400-802.

———— **END OF TASK** ————

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ARINC 629 MULTI-TRANSMITTER DATA BUS - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

- (1) An operational test of the ARINC 629 multi-transmitter data bus
- (2) A system test of the ARINC 629 multi-transmitter data bus

NOTE: The System test should be done only if the operational test cannot be done.

- (3) An ARINC 629 Current Mode Coupler Test.

TASK 23-91-00-710-801

2. ARINC 629 Multi-Transmitter Data Bus - Operational Test

A. **General**

- (1) The operational test makes sure the ARINC 629 system buses are operational through a software configuration check of one LRU on each bus.
- (2) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808

B. **References**

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. **Location Zones**

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
212	Flight Compartment, Right

D. **Prepare to Test**

SUBTASK 23-91-00-840-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

E. **Left System Bus Operational Test**

SUBTASK 23-91-00-860-001

- (1) Open these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	24	C22604	AFDC-C
F	24	C22602	AFDC-R

SUBTASK 23-91-00-710-001

- (2) Use a maintenance access terminal (MAT) to do a software configuration check:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) SYSTEM CONFIGURATION

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- 4) 22 Autopilot Flight Director System
- 5) CONTINUE.
- (b) Make sure the hardware and software part numbers are shown for the Auto Flight Director Computer (Left) on the MAT.
- (c) Make sure that CONFIGURATION DATA NOT AVAILABLE is shown for the Auto Flight Director Computer (right) and Auto Flight Director Computer (center) on the MAT.

SUBTASK 23-91-00-860-013

- (3) Close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	24	C22602	AFDC-R

F. Right System Bus Operational Test

SUBTASK 23-91-00-860-002

- (1) Open this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C22603	AFDC-L

SUBTASK 23-91-00-710-006

- (2) Software Configuration Check
 - (a) Make these selections on the MAT:
 - 1) NEW ATA
 - 2) 22 Autopilot Flight Director System
 - 3) CONTINUE.
 - (b) Make sure the hardware and software part numbers are shown for the Auto Flight Director Computer (Right) on the MAT.
 - (c) Make sure that CONFIGURATION DATA NOT AVAILABLE is shown for the Auto Flight Director Computer (left) and Auto Flight Director Computer (center).

SUBTASK 23-91-00-860-014

- (3) Close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	24	C22604	AFDC-C

G. Center 1 System Bus Operational Test

SUBTASK 23-91-00-860-003

- (1) Open this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	24	C22602	AFDC-R

SUBTASK 23-91-00-710-007

- (2) Software Configuration Check
 - (a) Make these selections on the MAT:

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- 1) NEW ATA
 - 2) 22 Autopilot Flight Director System
 - 3) CONTINUE.
- (b) Make sure the hardware and software part numbers are shown for the Auto Flight Director Computer (Center) on the MAT.
- (c) Make sure that CONFIGURATION DATA NOT AVAILABLE is shown for the Auto Flight Director Computer (Left) and Auto Flight Director Computer (right).

SUBTASK 23-91-00-860-004

- (3) Close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	10	C22603	AFDC-L
F	24	C22602	AFDC-R

H. Center 2 System Bus Operational Test

SUBTASK 23-91-00-860-005

- (1) Open these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	17	C73601	L EDIU 2A
M	18	C73603	L EDIU 1B

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
N	10	C73604	R EDIU 1B

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	1	C73605	L EDIU 1A
E	2	C73606	R EDIU 1A
E	3	C73607	L EDIU 2B
E	4	C73608	R EDIU 2B

SUBTASK 23-91-00-710-002

- (2) Software Configuration Check
- (a) Make these selections on the MAT:
- 1) NEW ATA
 - 2) 71-80 Right Engine
 - 3) CONTINUE.
- (b) Make sure the hardware and software part numbers are shown for Engine Data Interface Unit (R Eng ch A).
- (c) Make sure that CONFIGURATION DATA NOT AVAILABLE is shown for Engine Data Interface Unit (R Eng, ch B) and Engine Data Interface Unit (R Eng, ch C).

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SUBTASK 23-91-00-860-006

- (3) Close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	17	C73601	L EDIU 2A
M	18	C73603	L EDIU 1B

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
N	10	C73604	R EDIU 1B

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	1	C73605	L EDIU 1A
E	2	C73606	R EDIU 1A
E	3	C73607	L EDIU 2B
E	4	C73608	R EDIU 2B

I. Left Flight Controls Bus Operational Test

SUBTASK 23-91-00-860-007

- (1) Open these circuit breakers:
- (a) On the Power Assembly Center, M24301
 - 1) C07 - Pitot ADM
 - (b) On the Power Assembly Right, M24201
 - 1) C07 - Pitot ADM.

SUBTASK 23-91-00-710-003

- (2) Software Configuration Check
- (a) Make these selections on the MAT:
 - 1) NEW ATA
 - 2) 34 Air Data Inertial Reference System
 - 3) CONTINUE.
 - (b) Make sure the hardware and software part numbers are shown for the Air Data Inertial Reference Unit and the Air Data Module (Left Pitot).
 - (c) Make sure that CONFIGURATION DATA NOT AVAILABLE is shown for Air Data Module (Right Pitot) and Air Data Module (Center Pitot).

SUBTASK 23-91-00-860-008

- (3) Close these circuit breakers:
- (a) On the Power Assembly Center, M24301
 - 1) C07 - Pitot ADM
 - (b) On the Power Assembly Right, M24201
 - 1) C07 - Pitot ADM.

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J. Right Flight Controls Bus Operational Test

SUBTASK 23-91-00-860-009

- (1) Open these circuit breakers:
 - (a) On the Power Assembly Left, M24101
 - 1) C07 - Pitot ADM
 - (b) On the Power Assembly Center, M24301
 - 1) C07 - Pitot ADM.

SUBTASK 23-91-00-710-004

- (2) Software Configuration Check
 - (a) Make these selections on the MAT:
 - 1) NEW ATA
 - 2) 34 Air Data Inertial Reference System
 - 3) CONTINUE.
 - (b) Make sure the hardware and software part numbers are shown for the Air Data Inertial Reference Unit and the Air Data Module (Right Pitot).
 - (c) Make sure that CONFIGURATION DATA NOT AVAILABLE is shown for the Air Data Module (Left Pitot) and Air Data Module (Center Pitot).

SUBTASK 23-91-00-860-010

- (3) Close these circuit breakers:
 - (a) On the Power Assembly Left, M24101
 - 1) C07 - Pitot ADM
 - (b) On the Power Assembly Center, M24301
 - 1) C07 - Pitot ADM.

K. Center Flight Controls Bus Operational Test

SUBTASK 23-91-00-860-011

- (1) Open these circuit breakers:
 - (a) On the Power Assembly Left, M24101
 - 1) C07 - Pitot ADM
 - (b) On the Power Assembly Right, M24201
 - 1) C07 - Pitot ADM.

SUBTASK 23-91-00-710-005

- (2) Software Configuration Check
 - (a) Make these selections on the MAT:
 - 1) NEW ATA
 - 2) 34 Air Data Inertial Reference System
 - 3) CONTINUE.
 - (b) Make sure the hardware and software part numbers are shown for the Air Data Inertial Reference Unit and the Air Data Module (Center Pitot).
 - (c) Make sure that CONFIGURATION DATA NOT AVAILABLE is shown for the Air Data Module (Left Pitot) and Air Data Module (Right Pitot).

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SUBTASK 23-91-00-860-012

- (3) Close these circuit breakers:
 - (a) On the Power Assembly Left, M24101
 - 1) C07 - Pitot ADM
 - (b) On the Power Assembly Right, M24201
 - 1) C07 - Pitot ADM.

————— END OF TASK —————

TASK 23-91-00-730-801

3. ARINC 629 Multi-Transmitter Data Bus - System Test

A. General

- (1) The system test should be done only if the operational test cannot be done.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1579	Analyzer - Databus, Datatrak Models 600, 650, 650H Part #: DT-600 Supplier: 0Z3C6 Opt Part #: 01-1405-00 Supplier: 41364 Opt Part #: 01-1406-00 Supplier: 41364 Opt Part #: 01-1407-00 Supplier: 41364 Opt Part #: 100-600-001 Supplier: 41364 Opt Part #: 100-650-001 Supplier: 41364 Opt Part #: 100-655-001 Supplier: 41364

C. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
161	Bulk Cargo Compartment, Left

D. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

E. Left System Bus Test

SUBTASK 23-91-00-010-001

- (1) To get access to the main equipment center, do this step:
Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-91-00-010-002

- (2) Remove the cover to the P111 panel.

SUBTASK 23-91-00-480-001

- (3) Do these steps to connect databus analyzer, COM-1579:

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- (a) Disconnect the stub cable from coupler B23102, AMU-L, location D-3.
- (b) Disconnect the stub cable from coupler B49101, APU-L, location 5.
- (c) Connect the analyzer to coupler B23102, AMU-L.
- (d) Connect a second analyzer to coupler B49101, APU-L.

SUBTASK 23-91-00-730-001

- (4) Use the analyzer to transmit these parameters on coupler B31112:
 - (a) Transmit interval (TI) of 25
 - (b) Terminal Gap (TG) of 10
 - (c) Sync Gap (SG) of 127
 - (d) Number of words: 4.
 - (e) Label: 100
 - (f) Data Words (in hex): AAAA, 5555, 1111, FFFF.

SUBTASK 23-91-00-730-002

- (5) Make sure the message is received by the second data bus analyzer.

SUBTASK 23-91-00-080-001

- (6) Do these steps to disconnect the analyzers:
 - (a) Disconnect the analyzer from coupler B23102, AMU-L.
 - (b) Disconnect the analyzer from coupler B49101, APU-L.
 - (c) Connect the stub cable to coupler B23102, AMU-L, location D-3.
 - (d) Connect the stub cable to coupler B49101, APU-L, location 5.

SUBTASK 23-91-00-410-001

- (7) Install the cover on the P111 panel.

F. Right System Bus Test

SUBTASK 23-91-00-730-003

- (1) Do the steps in the Left System Bus Test again except:
 - (a) Open the P211 panel in the E/E bay.
 - (b) Use coupler B31213, RS-CDU-R, location C-6.
 - (c) Use coupler B49201 APU-L, location 2.
 - (d) Make sure you connect the stub cable to the same connector that you disconnected it from.

G. Center 1 System Bus Test

SUBTASK 23-91-00-730-004

- (1) Do the steps in the Left System Bus Test again except:
 - (a) Open the P311 panel in the E/E bay.
 - (b) Use coupler B73205, R EDIU CH B, location B-9.
 - (c) Use coupler B31307 WEU-R2, location B-5.
 - (d) Make sure you connect the stub cable to the same connector that you disconnected it from.

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H. Center 2 System Bus Test

SUBTASK 23-91-00-730-005

- (1) Do the steps in the Left System Bus Test again except:
 - (a) Open the P313 panel in the E/E bay.
 - (b) Use coupler B73204, R EDIU CH C, location A-6.
 - (c) Use coupler B73106 L EDIU CH 3, location A-8.
 - (d) Make sure you connect the stub cable to the same connector that you disconnected it from.

I. Left Flight Controls System Bus Test

SUBTASK 23-91-00-730-006

- (1) Do the steps in the Left System Bus Test again except:
 - (a) Open the P112 panel in the E/E bay.
 - (b) Use coupler B34106, ADIRU #2, location E-1.
 - (c) Use coupler B34105 ADIRU #1, location E-6.
 - (d) Change these parameters on the data bus analyzer:
 - 1) Transmit interval (TI) of 5ms
 - 2) Sync Gap (SG) of 32ms
 - (e) Make sure you connect the stub cable to the same connector that you disconnected it from.

J. Right Flight Controls System Bus Test

SUBTASK 23-91-00-730-007

- (1) Do the steps in the Left System Bus Test again except:
 - (a) Open the P212 panel in the E/E bay.
 - (b) Use coupler B24201, PSA-R, location A-1.
 - (c) Use coupler B31208 AIMS-R1, location E-5.
 - (d) Change these parameters on the data bus analyzer:
 - 1) Transmit interval (TI) of 5ms
 - 2) Sync Gap (SG) of 32ms
 - (e) Make sure you connect the stub cable to the same connector that you disconnected it from.

K. Center Flight Controls System Bus Test

SUBTASK 23-91-00-730-008

- (1) Do the steps in the Left System Bus Test again except:
 - (a) Open the P312 panel in the E/E bay.
 - (b) Use coupler B27143, ACE-C, location E-2.
 - (c) Use coupler B27093 PFC-C LANE 3, location D-5.
 - (d) Change these parameters on the data bus analyzer:
 - 1) Transmit interval (TI) of 5ms
 - 2) Sync Gap (SG) of 32ms

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- (e) Make sure you connect the stub cable to the same connector that you disconnected it from.

L. Put the Airplane Back to Its Usual Condition

SUBTASK 23-91-00-840-002

- (1) Open and close the circuit breakers to the systems for which you disconnected the stub cables.

SUBTASK 23-91-00-010-003

- (2) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

————— END OF TASK —————

TASK 23-91-00-750-801

4. ARINC 629 Current Mode Coupler Test

A. General

- (1) This test provides a quick check of an ARINC 629 Current Mode Coupler.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

<u>Reference</u>	<u>Description</u>
COM-1579	Analyzer - Databus, Datatrak Models 600, 650, 650H Part #: DT-600 Supplier: 0Z3C6 Opt Part #: 01-1405-00 Supplier: 41364 Opt Part #: 01-1406-00 Supplier: 41364 Opt Part #: 01-1407-00 Supplier: 41364 Opt Part #: 100-600-001 Supplier: 41364 Opt Part #: 100-650-001 Supplier: 41364 Opt Part #: 100-655-001 Supplier: 41364

C. Location Zones

<u>Zone</u>	<u>Area</u>
117	Main Equipment Center, Left
118	Main Equipment Center, Right

D. ARINC 629 Current Mode Coupler Test

SUBTASK 23-91-00-860-015

- (1) Make sure that the coupler is connected to an ARINC 629 Data Bus.

SUBTASK 23-91-00-860-016

- (2) Open the circuit breaker(s) of the system for which you will test the coupler.

NOTE: You can find the circuit breaker(s) for the system in the AMM Removal/Installation procedure for that system.

SUBTASK 23-91-00-020-001

- (3) Disconnect the stub cable from the coupler.

SUBTASK 23-91-00-860-017

- (4) Put a protective cover on the electrical connector of the stub cable.

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SUBTASK 23-91-00-480-002

- (5) Connect the databus analyzer, COM-1579 to the coupler.

SUBTASK 23-91-00-730-009

- (6) On the databus analyzer:
- (a) Select the top-level transmitter setup screen.
 - (b) Select the Coupler option for the Setup Mode.
 - (c) Do these transmit setup steps:
 - 1) 629 channel setup
 - 2) Word string setup
 - 3) Message schedule setup.
- NOTE: The actual parameters are not important for this test.
- (d) In the Coupler Test Mode, the databus analyzer display shows:
- 1) "Two Good Channels" or
 - 2) "One Good Channel" or
 - 3) "No Good Channels".

SUBTASK 23-91-00-080-002

- (7) Disconnect the DT650 ARINC 629 databus analyzer from the coupler.

SUBTASK 23-91-00-840-003

- (8) Remove the protective cover from the electrical connector of the stub cable.

SUBTASK 23-91-00-420-001

- (9) Connect the stub cable to the coupler.

SUBTASK 23-91-00-860-018

- (10) Close the circuit breaker(s) that you opened for the coupler test.

————— **END OF TASK** —————

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ARINC 629 CURRENT-MODE COUPLER - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
 - (1) A removal of an ARINC 629 current-mode coupler.
 - (2) An installation of an ARINC 629 current-mode coupler.
- B. The couplers are installed on 7 panels in the main equipment center, and 2 panels in the bulk cargo compartment. The removal and installation is the same for all couplers.
- C. There are two types of couplers. The two types are interchangeable.

TASK 23-91-01-000-801

2. ARINC 629 Current-Mode Coupler Removal

(Figure 401)

A. **Location Zones**

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
163	Area Below Bulk Cargo Compartment, Left
164	Area Below Bulk Cargo Compartment, Right

B. **Access Panels**

Number	Name/Location
117AL	Main Equipment Center Access Door

C. **Prepare for Removal**

SUBTASK 23-91-01-800-001

- (1) The location of each coupler and its related LRU / SYSTEM is shown in the tables that follow for each panel.

Table 401/23-91-01-993-801

P111 PANEL ARINC 629 SYSTEM BUS - LEFT			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B21631	P111-B12	E1-2	CABIN TEMPERATURE CONTROL UNIT-LEFT (CACTUS)
B21633	P111-A05	E2-2	CABIN TEMPERATURE CONTROL UNIT-RIGHT (CACTUS)
B22104	P111-D07	E1-3	AUTOPILOT FLIGHT DIRECTOR COMPUTER-LEFT (AFDC)
B23102	P111-D03	E1-4	AUDIO MANAGEMENT UNIT (AMU)
B23126	P111-B04	STA 0216	OVERHEAD PANEL BUS CONTROLLER-LEFT (OPBC)
B23127	P111-B05	STA 0237	OVERHEAD PANEL BUS CONTROLLER-RIGHT (OPBC)
B23128	P111-D01	E1-4	PASSENGER ADDRESS CABIN INTERPHONE (PACI)
B24102	P111-A09	E4-4	BACKUP CONVERTER
B24103	P111-C10	E1-1	GENERATOR CONTROL UNIT-LEFT (GCU)
B24104	P111-A04	E2-2	GENERATOR CONTROL UNIT-RIGHT (GCU)
B24105	P111-A02	E2-3	GENERATOR CONTROL UNIT-APU (GCU)

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Table 401/23-91-01-993-801 (Continued)

P111 PANEL ARINC 629 SYSTEM BUS - LEFT			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B24106	P111-C11	E1-1	BUS POWER CONTROL UNIT (BPCU)
B24107	P111-B08	P110	ELECTRICAL LOAD MANAGEMENT SYSTEM-LEFT (ELMS)
B24108	P111-B01	P210	ELECTRICAL LOAD MANAGEMENT SYSTEM-RIGHT (ELMS)
B24109	P111-B06	P310	ELECTRICAL LOAD MANAGEMENT SYSTEM-CENTER (ELMS)
B27101	P111-C02	E1-6	FLAT/SLAT ELECTRONIC UNIT 1 (FSEU)
B27102	P111-C01	E1-6	FLAT/SLAT ELECTRONIC UNIT 1 (FSEU)
B28041	P111-A01	E5-3	FUEL QUANTITY PROCESSOR UNIT (FQPU)
B31101	P111-B03	P85	SYSTEMS CARDFILE-LEFT
B31112	P111-B07	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)
B31113	P111-A07	P9	CONTROL DISPLAY UNIT-LEFT (CDU)
B31114	P111-B02	P8	CONTROL DISPLAY UNIT-CENTER (CDU)
B31115	P111-A08	P9	CONTROL DISPLAY UNIT-RIGHT (CDU)
B31116	P111-A06	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B31122	P111-C04	E1-5	WARNING ELECTRONIC SYSTEM-LEFT (WES)
B31123	P111-B11	E1-5	WARNING ELECTRONIC SYSTEM-LEFT (WES)
B31201	P111-B09	P84	SYSTEMS CARDFILE-RIGHT
B32115	P111-C05	E1-5	PROXIMITY SENSOR ELECTRONICS UNIT 1 (PSEU)
B32215	P111-A11	E4-1	PROXIMITY SENSOR ELECTRONICS UNIT 2 (PSEU) (AIMS)
B36232	P111-A03	E2-2	AIR SUPPLY & CABIN PRESSURE CONTROLLER-RIGHT (ASCPC)
B36233	P111-C08	E1-2	AIR SUPPLY & CABIN PRESSURE CONTROLLER-LEFT (ASCPC)
B73101	P111-C07	E1-5	ENGINE DATA INTERFACE UNIT-LEFT (EDIU)
B73103	P111-C06	E1-5	ENGINE DATA INTERFACE UNIT-LEFT (EDIU)
B77105	P111-D05	E1-4	ENGINE VIBRATION MONITOR-LEFT

Table 402/23-91-01-993-802

P111 PANEL ARINC 629 AIMS INTERCABINET BUS - 11			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B31126	P111-D11	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B31127	P111-D12	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)

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Table 403/23-91-01-993-803

P112 PANEL ARINC 629 FLIGHT CONTROL BUS - LEFT			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B22101	P112-C06	E1-3	AUTOPILOT FLIGHT DIRECTOR COMPUTER-LEFT (AFDC)
B22201	P112-B05	E2-5	AUTOPILOT FLIGHT DIRECTOR COMPUTER-RIGHT (AFDC)
B22301	P112-A06	E4-1	AUTOPILOT FLIGHT DIRECTOR COMPUTER-CENTER (AFDC)
B24101	P112-C01	E1-6	POWER SUPPLY ASSEMBLY-LEFT (PSA)
B27011	P112-C04	E1-6	PRIMARY FLIGHT COMPUTER-LEFT (PFC)
B27021	P112-C03	E1-6	PRIMARY FLIGHT COMPUTER-LEFT (PFC)
B27031	P112-C02	E1-6	PRIMARY FLIGHT COMPUTER-LEFT (PFC)
B27041	P112-A02	E16-1	PRIMARY FLIGHT COMPUTER-RIGHT (PFC)
B27051	P112-A03	E16-1	PRIMARY FLIGHT COMPUTER-RIGHT (PFC)
B27061	P112-A04	E16-1	PRIMARY FLIGHT COMPUTER-RIGHT (PFC)
B27071	P112-B04	E2-6	PRIMARY FLIGHT COMPUTER-CENTER (PFC)
B27081	P112-B03	E2-6	PRIMARY FLIGHT COMPUTER-CENTER (PFC)
B27091	P112-B02	E2-6	PRIMARY FLIGHT COMPUTER-CENTER (PFC)
B27111	P112-C05	E1-5	ACTUATOR CONTROL ELECTRONICS-LEFT 1 (ACE)
B27121	P112-D02	E1-1	ACTUATOR CONTROL ELECTRONICS-LEFT 2 (ACE)
B27131	P112-A01	E5-2	ACTUATOR CONTROL ELECTRONICS-RIGHT (ACE)
B27141	P112-B06	E2-5	ACTUATOR CONTROL ELECTRONICS-CENTER (ACE)
B31107	P112-E04	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)
B31108	P112-E03	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)
B31109	P112-D03	P9	CONTROL DISPLAY UNIT-LEFT (CDU)
B31110	P112-D04	P8	CONTROL DISPLAY UNIT-CENTER (CDU)
B31111	P112-A05	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B34101	P112-D06	STA 479	AIR DATA MODULE STATIC-LEFT (ADM)
B34102	P112-D01	STA 225	AIR DATA MODULE PITOT-LEFT (ADM)
B34103	P112-B01	E2-7	SECONDARY ATTITUDE AIR-DATA REFERENCE UNIT (SAARU)
B34105	P112-E06	E3-3	AIR DATA INERTIAL REFERENCE UNIT (ADIRU)
B34106	P112-E01	E3-3	AIR DATA INERTIAL REFERENCE UNIT (ADIRU)

Table 404/23-91-01-993-804-001

P115 PANEL ARINC 629 SYSTEM BUS - LEFT			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B32111	P115-A03	E6-3	MAIN GEAR STEERING CONTROL UNIT
B32113	P115-A02	E6-2	BRAKE SYSTEM CONTROL UNIT (BSCU)

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Table 404/23-91-01-993-804-001 (Continued)

P115 PANEL ARINC 629 SYSTEM BUS - LEFT			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B32114	P115-A04	E6-3	TIRE AND BRAKE MONITOR UNIT (TBMU)
B49101	P115-A05	E7	ENGINE CONTROL UNIT (APU-ECU)

Table 405/23-91-01-993-805

P211 PANEL ARINC 629 SYSTEM BUS - RIGHT			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B21632	P211-C12	E1-2	CABIN TEMPERATURE CONTROL UNIT-LEFT (CACTUS)
B21634	P211-B01	E2-2	CABIN TEMPERATURE CONTROL UNIT-RIGHT (CACTUS)
B22204	P211-B16	E2-5	AUTOPILOT FLIGHT DIRECTOR COMPUTER-RIGHT (AFDC)
B23226	P211-A12	STA 0216	OVERHEAD PANEL BUS CONTROLLER-LEFT (OPBC)
B23227	P211-A11	STA 0237	OVERHEAD PANEL BUS CONTROLLER-RIGHT (OPBC)
B23228	P211-C09	E1-4	CABIN SYSTEM MANAGEMENT UNIT (CSMU)
B24202	P211-A01	E4-4	BACKUP CONVERTER
B24203	P211-C10	E1-1	GENERATOR CONTROL UNIT-LEFT (GCU)
B24204	P211-B04	E2-2	GENERATOR CONTROL UNIT-RIGHT (GCU)
B24205	P211-B06	E2-3	GENERATOR CONTROL UNIT-APU (GCU)
B24206	P211-C08	E1-1	BUS POWER CONTROL UNIT (BPCU)
B24207	P211-A14	P110	ELECTRICAL LOAD MANAGEMENT SYSTEM-LEFT (ELMS)
B24208	P211-B12	P210	ELECTRICAL LOAD MANAGEMENT SYSTEM-RIGHT (ELMS)
B24209	P211-A10	P310	ELECTRICAL LOAD MANAGEMENT SYSTEM-CENTER (ELMS)
B27201	P211-A06	E4-1	FLAT/SLAT ELECTRONIC UNIT 2 (FSEU)
B27202	P211-A03	E4-1	FLAT/SLAT ELECTRONIC UNIT 2 (FSEU)
B28042	P211-B13	E5-3	FUEL QUANTITY PROCESSOR UNIT (FQPU)
B31102	P211-B14	P85	SYSTEM CARDFILE-LEFT
B31202	P211-C14	P84	SYSTEMS CARDFILE-RIGHT
B31210	P211-A13	P9	CONTROL DISPLAY UNIT-LEFT (CDU)
B31211	P211-C16	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)
B31212	P211-B11	P8	CONTROL DISPLAY UNIT-CENTER (CDU)
B31213	P211-C06	P9	CONTROL DISPLAY UNIT-RIGHT (CDU)
B31214	P211-B03	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B31222	P211-A16	E4-2	WARNING ELECTRONIC SYSTEM-RIGHT (WES)
B31223	P112-A07	E4-2	WARNING ELECTRONIC SYSTEM-RIGHT (WES)
B32301	P211-C13	E1-5	PROXIMITY SENSOR ELECTRONICS-UNIT I (PSEU)

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Table 405/23-91-01-993-805 (Continued)

P211 PANEL ARINC 629 SYSTEM BUS - RIGHT			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B32302	P211-A05	E4-1	PROXIMITY SENSOR ELECTRONICS UNIT 2 (PSEU)
B36231	P211-B08	E2-2	AIR SUPPLY & CABIN PRESSURE CONTROLLER-RIGHT (ASCPC)
B36234	P211-C11	E1-2	AIR SUPPLY & CABIN PRESSURE CONTROLLER-LEFT (ASCPC)
B73201	P211-A08	E4-1	ENGINE DATA INTERFACE UNIT-RIGHT (EDIU)
B73203	P211-A04	E4-1	ENGINE DATA INTERFACE UNIT-RIGHT (EDIU)
B77205	P211-B10	E2-4	ENGINE VIBRATION MONITOR-RIGHT

Table 406/23-91-01-993-806

P211 PANEL ARINC 629 AIMS INTERCABINET BUS - 13			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B31126	P211-C02	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B31227	P211-C01	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)

Table 407/23-91-01-993-807

P212 PANEL ARINC 629 FLIGHT CONTROL BUS - RIGHT			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B22102	P212-B05	E1-3	AUTOPILOT FLIGHT DIRECTOR COMPUTER-LEFT (AFDC)
B22202	P212-D06	E2-5	AUTOPILOT FLIGHT DIRECTOR COMPUTER-RIGHT (AFDC)
B22302	P212-D01	E4-1	AUTOPILOT FLIGHT DIRECTOR COMPUTER-CENTER (AFDC)
B24201	P212-A01	E5-1	POWER SUPPLY ASSEMBLY-RIGHT (PSA)
B27012	P212-B03	E1-6	PRIMARY FLIGHT COMPUTER-LEFT (PFC)
B27022	P212-B02	E1-6	PRIMARY FLIGHT COMPUTER-LEFT (PFC)
B27032	P212-B01	E1-6	PRIMARY FLIGHT COMPUTER-LEFT (PFC)
B27042	P212-A05	E16-1	PRIMARY FLIGHT COMPUTER-RIGHT (PFC)
B27052	P212-A04	E16-1	PRIMARY FLIGHT COMPUTER-RIGHT (PFC)
B27062	P212-A03	E16-1	PRIMARY FLIGHT COMPUTER-RIGHT (PFC)
B27072	P212-C07	E2-6	PRIMARY FLIGHT COMPUTER-CENTER (PFC)
B27082	P212-C06	E2-6	PRIMARY FLIGHT COMPUTER-CENTER (PFC)
B27092	P212-C05	E2-6	PRIMARY FLIGHT COMPUTER-CENTER (PFC)
B27112	P212-B04	E1-5	ACTUATOR CONTROL ELECTRONICS-LEFT 1 (ACE)
B27122	P212-B06	E1-1	ACTUATOR CONTROL ELECTRONICS-LEFT 2 (ACE)
B27132	P212-A07	E5-2	ACTUATOR CONTROL ELECTRONICS-RIGHT (ACE)
B27142	P212-E07	E2-5	ACTUATOR CONTROL ELECTRONICS-CENTER (ACE)

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Table 407/23-91-01-993-807 (Continued)

P212 PANEL ARINC 629 FLIGHT CONTROL BUS - RIGHT			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B31206	P212-C03	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)
B31207	P212-D02	P9	CONTROL DISPLAY UNIT-RIGHT (CDU)
B31208	P212-E05	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B31209	P212-D04	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B34201	P212-E03	STA 500	AIR DATA MODULE STATIC-RIGHT (ADM)
B34202	P212-E01	STA 233	AIR DATA MODULE PITOT-RIGHT (ADM)
B34203	P212-C04	E2-7	SECONDARY ATTITUDE AIR-DATA REFERENCE UNIT (SAARU)
B34205	P212-C02	E3-3	AIR DATA INERTIAL REFERENCE UNIT (ADIRU)
B34206	P212-C01	E3-3	AIR DATA INERTIAL REFERENCE UNIT (ADIRU)

Table 408/23-91-01-993-808

P215 PANEL ARINC 629 AIMS SYSTEM BUS - RIGHT			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B32213	P215-A01	E6-2	BRAKE SYSTEM CONTROL UNIT (BSCU)
B49201	P215-A02	E7	ENGINE CONTROL UNIT (APU-ECU)

Table 409/23-91-01-993-809

P311 PANEL ARINC 629 SYSTEM BUS - CENTER 1			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B22304	P311-A05	E4-1	AUTOPILOT FLIGHT DIRECTOR COMPUTER-CENTER (AFDC)
B27301	P311-A11	E1-6	FLAP/SLAT ELECTRONIC UNIT-I (FSEU)
B27302	P311-A12	E1-6	FLAP/SLAT ELECTRONIC UNIT-I (FSEU)
B27303	P311-A01	E4-1	FLAP/SLAT ELECTRONIC UNIT-2 (FSEU)
B27304	P311-B03	E4-1	FLAP/SLAT ELECTRONIC UNIT-2 (FSEU)
B31306	P311-A03	E4-2	WARNING ELECTRONIC SYSTEM-RIGHT (WES)
B31307	P311-B05	E4-2	WARNING ELECTRONIC SYSTEM-RIGHT (WES)
B31312	P311-C09	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)
B31317	P311-C10	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B31322	P311-B01	E1-5	WARNING ELECTRONIC SYSTEM-LEFT (WES)
B31323	P311-C04	E1-5	WARNING ELECTRONIC SYSTEM-LEFT (WES)
B73102	P311-C03	E1-5	ENGINE DATA INTERFACE UNIT-LEFT (EDIU)
B73105	P311-C05	E1-5	ENGINE DATA INTERFACE UNIT-LEFT (EDIU)
B73202	P311-B11	E4-1	ENGINE DATA INTERFACE UNIT-RIGHT (EDIU)

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P311 PANEL ARINC 629 SYSTEM BUS - CENTER 1			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B73205	P311-A09	E4-1	ENGINE DATA INTERFACE UNIT-RIGHT (EDIU)

Table 410/23-91-01-993-810

P311 PANEL ARINC 629 AIMS INTERCABINET BUS - 12			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B31313	P311-C04	P9	CONTROL DISPLAY UNIT-LEFT (CDU)
B31315	P311-C03	P8	CONTROL DISPLAY UNIT-CENTER (CDU)
B31316	P311-C05	P9	CONTROL DISPLAY UNIT-RIGHT (CDU)
B31326	P311-C01	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B31327	P311-C07	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)

Table 411/23-91-01-993-811

P311 PANEL ARINC 629 AIMS INTERCABINET BUS - 14			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B31308	P311-C09	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)
B31311	P311-C10	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)

Table 412/23-91-01-993-812

P312 PANEL ARINC 629 FLIGHT CONTROL BUS - CENTER			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B22103	P312-B02	E1-3	AUTOPILOT FLIGHT DIRECTOR COMPUTER-LEFT (AFDC)
B22203	P312-E03	E2-5	AUTOPILOT FLIGHT DIRECTOR COMPUTER-RIGHT (AFDC)
B22303	P312-C01	E4-1	AUTOPILOT FLIGHT DIRECTOR COMPUTER-CENTER (AFDC)
B24301	P312-E06	E2-6	POWER SUPPLY ASSEMBLY-CENTER (PSA)
B27013	P312-B06	E1-6	PRIMARY FLIGHT COMPUTER-LEFT (PFC)
B27023	P312-B05	E1-6	PRIMARY FLIGHT COMPUTER-LEFT (PFC)
B27033	P312-B04	E1-6	PRIMARY FLIGHT COMPUTER-LEFT (PFC)
B27043	P312-A05	E16-1	PRIMARY FLIGHT COMPUTER-RIGHT (PFC)
B27053	P312-A04	E16-1	PRIMARY FLIGHT COMPUTER-RIGHT (PFC)
B27063	P312-A03	E16-1	PRIMARY FLIGHT COMPUTER-RIGHT (PFC)
B27073	P312-E04	E2-6	PRIMARY FLIGHT COMPUTER-CENTER (PFC)
B27083	P312-D03	E2-6	PRIMARY FLIGHT COMPUTER-CENTER (PFC)

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Table 412/23-91-01-993-812 (Continued)

P312 PANEL ARINC 629 FLIGHT CONTROL BUS - CENTER			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B27093	P312-D04	E2-6	PRIMARY FLIGHT COMPUTER-CENTER (PFC)
B27113	P312-B03	E1-5	ACTUATOR CONTROL ELECTRONICS-LEFT 1 (ACE)
B27123	P312-B01	E1-1	ACTUATOR CONTROL ELECTRONIC-LEFT 2 (ACE)
B27133	P312-A06	E5-2	ACTUATOR CONTROL ELECTRONICS-RIGHT (ACE)
B27143	P312-E01	E2-5	ACTUATOR CONTROL ELECTRONICS-CENTER (ACE)
B31309	P312-C04	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)
B31310	P312-D01	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B34301	P312-A02	STA 688	AIR DATA MODULE STATIC-CENTER (ADM)
B34302	P312-A01	STA 225	AIR DATA MODULE PITOT-CENTER (ADM)
B34303	P312-D06	E2-7	SECONDARY ATTITUDE AIR-DATA REFERENCE UNIT (SAARU)
B34305	P312-C03	E3-3	AIR DATA INERTIAL REFERENCE UNIT (ADIRU)
B34306	P312-C06	E3-3	AIR DATA INERTIAL REFERENCE UNIT (ADIRU)

Table 413/23-91-01-993-813

P313 PANEL ARINC 629 SYSTEM BUS - CENTER 2			
COUPLER NUMBER	COUPLER LOCATION	MODULE LOCATION	LRU / SYSTEM
B31314	P313-A02	E3-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-LEFT (AIMS)
B31318	P313-A12	E2-1	AIRCRAFT INFORMATION MANAGEMENT SYSTEM-RIGHT (AIMS)
B73104	P313-A04	E1-5	ENGINE DATA INTERFACE UNIT - LEFT (EDIU)
B73106	P313-A08	E1-5	ENGINE DATA INTERFACE UNIT - LEFT (EDIU)
B73204	P313-A06	E4-1	ENGINE DATA INTERFACE UNIT - RIGHT (EDIU)
B73206	P313-A10	E4-1	ENGINE DATA INTERFACE UNIT - RIGHT (EDIU)

SUBTASK 23-91-01-010-005

- (2) For these panels: P111, P112, P211, P212, P311, P312, P313, do the steps below:
- (a) To get access to the main equipment center,
Open this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door
- (b) Remove the bus panel cover.

SUBTASK 23-91-01-010-002

- (3) For these panels: P115, P215, remove the applicable cargo liners to get access to the couplers in the bulk cargo compartment.

NOTE: The coupler locations are shown on the cargo liners.

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SUBTASK 23-91-01-860-003

- (4) Open the circuit breaker(s) of the system for which you will remove the coupler [3].

NOTE: You can find the circuit breaker(s) for the other LRU's in the AMM Removal/Installation for that LRU.

- (a) If the system for which you will remove the coupler is in the P110, left Power Management Panel, open the following circuit breakers.

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>
J	24	C24617	P110 PSU A PRI
P	15	C24655	P110 PSU B PRI

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	3	C24624	P110 PSU B ALTN
J	6	C24658	P110 PSU A ALTN

- (b) If the system for which you will remove the coupler is in the P210, right Power Management Panel, open the following circuit breakers.

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>
J	23	C24618	P210 PSU B ALTN
P	16	C24657	P210 PSU A ALTN

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	4	C24625	P210 PSU B PRI
J	5	C24656	P210 PSU A PRI

- (c) If the system for which you will remove the coupler is in the P310 power management panel, open the following circuit breakers.

Open these circuit breakers and install safety tags:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C24635	P310 PSU B PRI
C	7	C24641	P310 PSU A PRI
J	5	C24640	P310 PSU B ALTN
K	5	C24633	P310 PSU A ALTN

D. Removal Procedure

SUBTASK 23-91-01-020-001

- (1) Do these steps to remove the Amphenol PN: DB110777 or SCI PN: 5242500 coupler [3] (Figure 402):

- Disconnect the stub cable from the coupler [3].
- Turn the captive screw [5] counterclockwise 1/4 turn.
- Remove the coupler cover [1].

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CAUTION

DO NOT CAUSE DAMAGE TO THE DATABUS CABLE. DAMAGE TO THE CABLE CAN CAUSE CORROSION ON THE CONDUCTOR OR A FAILURE OF THE SYSTEM.

- (d) Remove the databus cable from the coupler [3].
- (e) Loosen the captive screws [4] that hold the coupler base [2] to the panel.
- (f) Remove the coupler [3].

SUBTASK 23-91-01-020-002

- (2) Do these steps to remove the SCI PN: 5446500-001 coupler [3] (Figure 402):

- (a) Disconnect the stub cable connector [6] from the coupler [3].
- (b) Loosen the spring latch [4] from the coupler [3].
- (c) Lift the coupler cover [1].



CAUTION

DO NOT CAUSE DAMAGE TO THE DATABUS CABLE. DAMAGE TO THE CABLE CAN CAUSE CORROSION ON THE CONDUCTOR OR A FAILURE OF THE SYSTEM.

- (d) Remove the databus cable [7] from the coupler [3].
- (e) Loosen the screws [5] that hold the coupler to the panel.
- (f) Remove the coupler [3].

———— **END OF TASK** ————

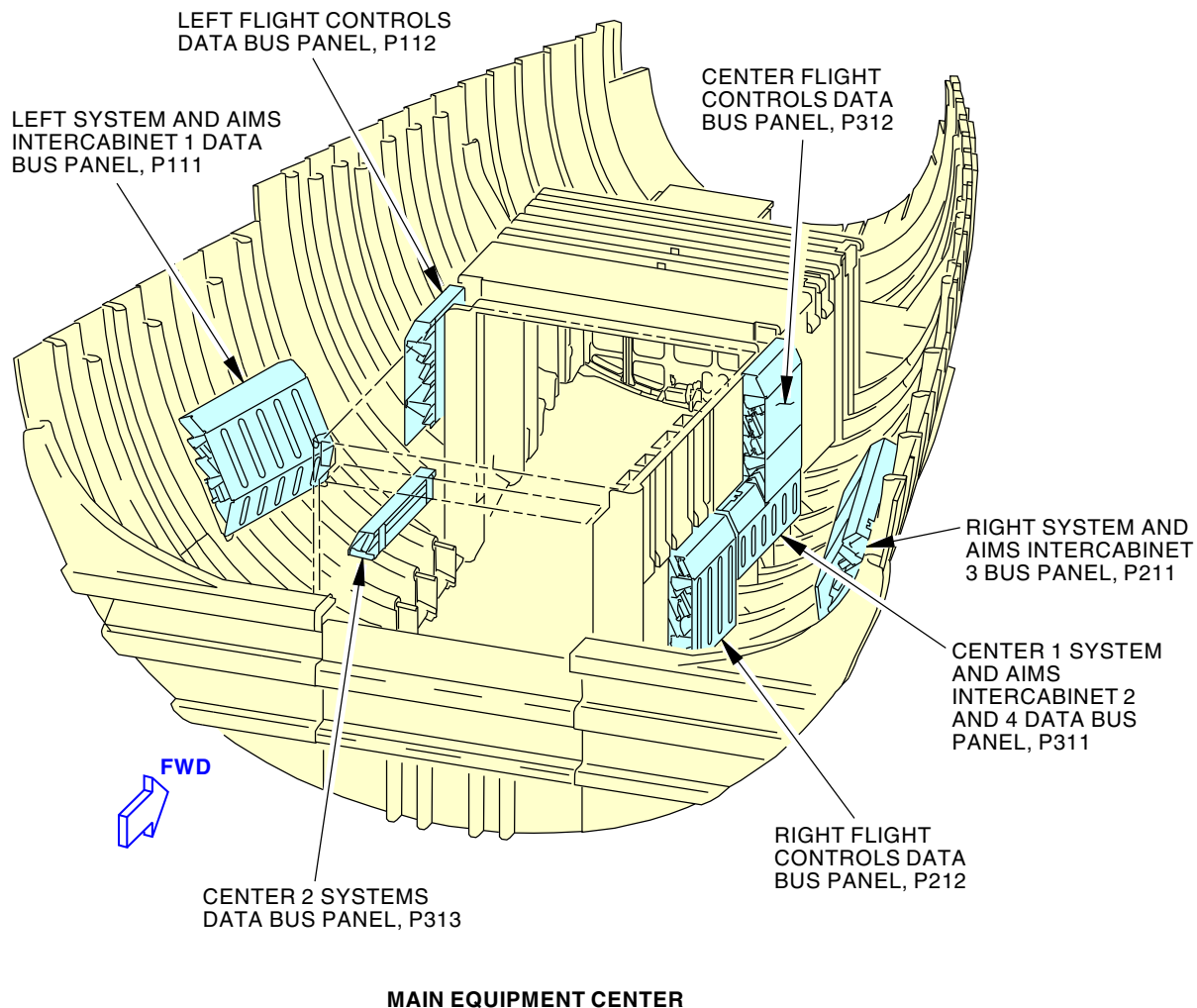
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E10941 S0006407566_V2

ARINC 629 Current-Mode Coupler Panels
Figure 401/23-91-01-990-804 (Sheet 1 of 2)

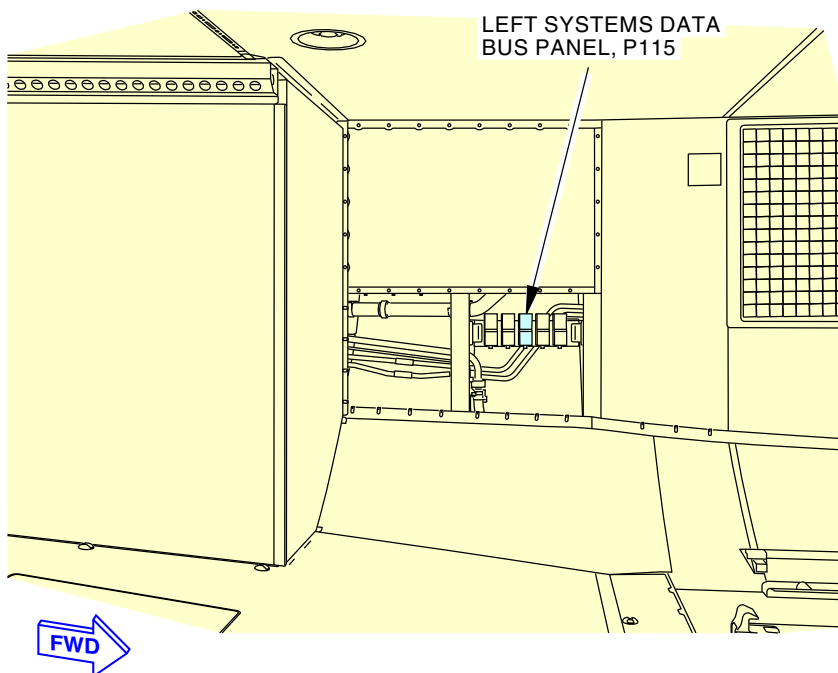
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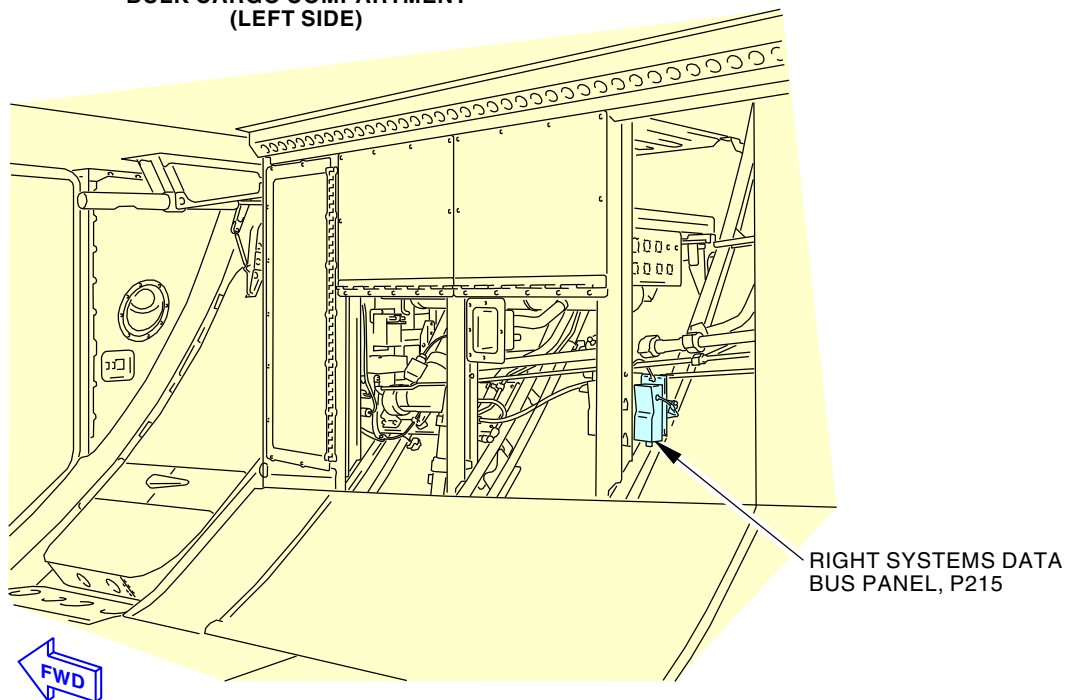
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**BULK CARGO COMPARTMENT
(LEFT SIDE)**



**BULK CARGO COMPARTMENT
(RIGHT SIDE)**

E11173 S0006407567_V2

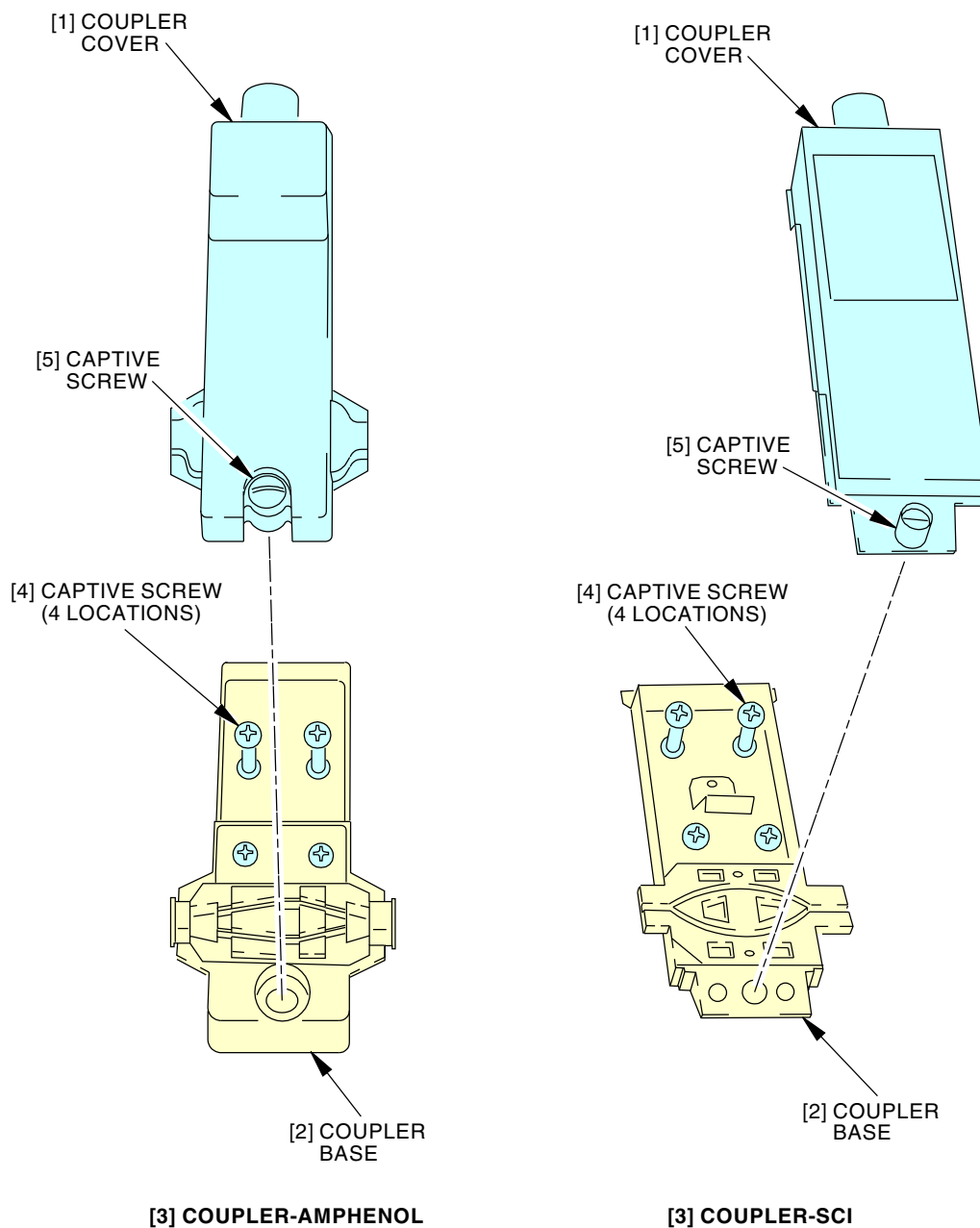
ARINC 629 Current-Mode Coupler Panels
Figure 401/23-91-01-990-804 (Sheet 2 of 2)

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**ARINC 629 Current-Mode Couplers
Figure 402/23-91-01-990-805 (Sheet 1 of 2)**

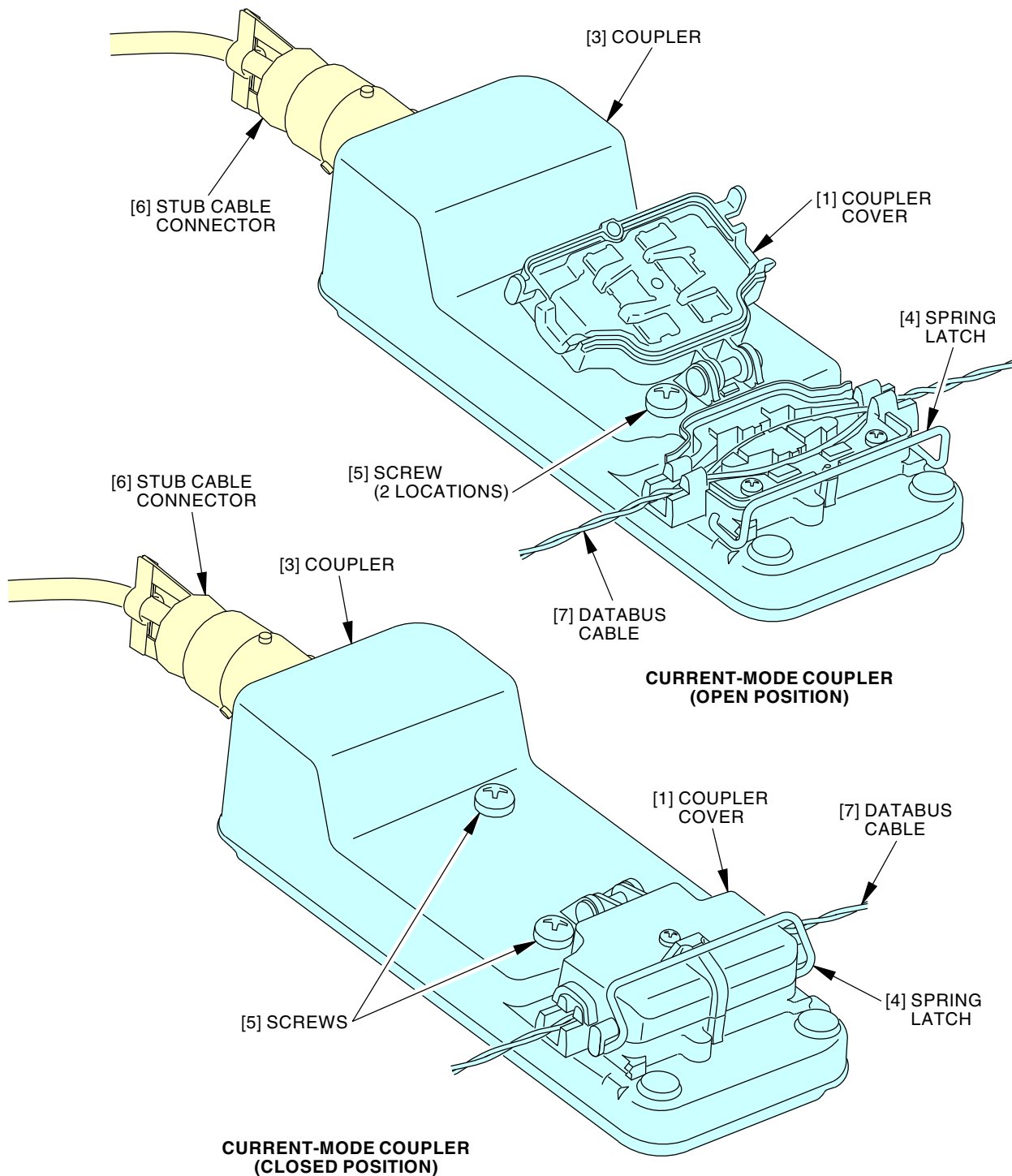
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**ARINC 629 Current-Mode Couplers
Figure 402/23-91-01-990-805 (Sheet 2 of 2)**

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TASK 23-91-01-400-801

3. ARINC 629 Current-Mode Coupler Installation

(Figure 401)

A. General

- (1) This procedure installs the ARINC 629 Current-Mode Coupler.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17

C. Consumable Materials

Reference	Description	Specification
B00083	Solvent - VM&P Naphthas	TT-N-95 Type II, ASTM D-3735 Type III

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Cover	23-91-01-01A-110	ARO ALL
		23-91-01-02A-125	ARO ALL
		23-91-01-03A-125	ARO ALL
		23-91-01-04-110	ARO ALL
		23-91-01-08-078	ARO ALL
2	Base	23-91-01-01A-105	ARO ALL
		23-91-01-02A-120	ARO ALL
		23-91-01-03A-120	ARO ALL
		23-91-01-04-105	ARO ALL
		23-91-01-08-077	ARO ALL

E. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
163	Area Below Bulk Cargo Compartment, Left
164	Area Below Bulk Cargo Compartment, Right

F. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

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G. Prepare for Installation

SUBTASK 23-91-01-860-001

- (1) Make sure that the circuit breaker(s) are open for the LRU for which you will install the coupler [3].

NOTE: You can find the circuit breaker(s) for the LRU's in the AMM Removal/Installation for that LRU.

- (a) If the system for which you will install the coupler is in the P110 (the Left Power Management Panel), make sure the following circuit breakers are open.

Make sure that these circuit breakers are open and have safety tags:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	24	C24617	P110 PSU A PRI
P	15	C24655	P110 PSU B PRI

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	3	C24624	P110 PSU B ALTN
J	6	C24658	P110 PSU A ALTN

- (b) If the system for which you will install the coupler is in the P210 (the Right Power Management Panel), make sure the following circuit breakers are open.

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>
J	23	C24618	P210 PSU B ALTN
P	16	C24657	P210 PSU A ALTN

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	4	C24625	P210 PSU B PRI
J	5	C24656	P210 PSU A PRI

- (c) If the system for which you will install the coupler is in the P310 Power Management Panel, make sure the following circuit breakers are open.

Open these circuit breakers and install safety tags:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C24635	P310 PSU B PRI
C	7	C24641	P310 PSU A PRI
J	5	C24640	P310 PSU B ALTN
K	5	C24633	P310 PSU A ALTN

H. Installation Procedure

SUBTASK 23-91-01-420-001

- (1) Do these steps to install the Amphenol PN: DB110777 or SCI PN: 5242500 base [2] on the panel (Figure 402):

- (a) Remove the coupler cover [1] from the coupler [3] you will install.

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DO NOT USE A COUPLER BASE OR A COUPLER COVER WHICH HAS MORE THAN ONE GROUND CONTACT FINGER MISSING OR BROKEN. IF ONE GROUND CONTACT FINGER IS MISSING OR BROKEN YOU CAN USE THE COUPLER FOR A MAXIMUM OF 3 MONTHS. AFTER 3 MONTHS YOU MUST REPLACE THE COUPLER.

- (b) Inspect the coupler base [2] and the coupler cover [1] for missing or broken ground contact fingers. (The Amphenol Coupler has 9 ground contact fingers on each side mounted in the base. The SCI coupler has 8 contact fingers on each side mounted on the cover).
- (c) Put the coupler base [2] in its position on the panel.
- (d) Tighten the captive screws [4] that attach the coupler base [2] to the panel.

SUBTASK 23-91-01-420-004

- (2) Do these steps to install the SCI PN: 5446500-001 coupler [3] on the panel (Figure 402):
 - (a) Put the coupler [3] in its position on the panel.
 - (b) Tighten the screws [5] that attach the coupler to the panel.
 - (c) Connect the stub cable connector [6] to the coupler [3].

SUBTASK 23-91-01-420-002

- (3) Do these steps to install the databus cable in the Amphenol PN: DB110777 or SCI PN: 5242500 coupler [3]:
 - (a) Put the cable above the center of the coupler's wire guide.
 - (b) Determine the correct position of the wires in the coupler base [2].
 - 1) If there is a coupler [3] adjacent to, or there are two empty slots near the one you installed, do these steps:
 - a) Remove the adjacent coupler's cover.
 - b) Examine the path of the databus cable wires through the coupler base [2].
 - c) Determine which wire should be placed in the top and bottom groove of the new coupler base [2].

NOTE: The same color wire should be in opposite grooves on adjacent couplers (Figure 403).
 - 2) If there is one or three empty slots on both sides of the coupler you installed, do these steps:
 - a) Remove the coupler cover [1] of one of the nearest couplers.
 - b) Examine the path of the databus cable wires through the coupler base [2].
 - c) Determine which wire should be placed in the top and bottom groove of the new coupler base [2].

NOTE: The same color wire should be in the same grooves.



MAKE SURE YOU DO NOT CAUSE DAMAGE TO THE THIN WALL OF INSULATION BETWEEN THE E-CORE AND THE WIRE. DAMAGE TO THE INSULATION CAN CAUSE A DATABUS FAILURE.

- (c) Push one wire into the top groove and the other wire into the bottom groove of the E-Core assembly.
- (d) Inspect the E-CORE for dust or contamination.

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- (e) If necessary, clean the E-CORE.

SUBTASK 23-91-01-420-005

- (4) Do these steps to install the databus cable [7] in the SCI PN: 5446500-001 coupler [3]:
 - (a) Loosen the spring latch [4] from the coupler [3].
 - (b) Lift the coupler cover [1] from the coupler [3].
 - (c) Put the cable above the center of the coupler's wire guide.
 - (d) Determine the correct position of the wires in the coupler [3].
 - 1) If there is a coupler [3] adjacent to, or there are two empty slots near the one you installed, do these steps:
 - a) Lift the adjacent coupler's cover [1].
 - b) Examine the path of the databus cable wires through the coupler [3].
 - c) Determine which wire should be placed in the top and bottom groove of the new coupler [3].
 - NOTE: The same color wire should be in opposite grooves on adjacent couplers (Figure 403).
 - 2) If there is one or three empty slots on both sides of the coupler you installed, do these steps:
 - a) Lift the coupler cover [1] of one of the nearest couplers.
 - b) Examine the path of the databus cable wires through the coupler [3].
 - c) Determine which wire should be placed in the top and bottom groove of the new coupler [3].
 - NOTE: The same color wire should be in the same grooves.



MAKE SURE YOU DO NOT CAUSE DAMAGE TO THE THIN WALL OF INSULATION BETWEEN THE E-CORE AND THE WIRE. DAMAGE TO THE INSULATION CAN CAUSE A DATABUS FAILURE.

- (e) Push one wire into the top groove and the other wire into the bottom groove of the E-Core assembly.
- (f) Inspect the E-CORE for dust or contamination.
- (g) If necessary, clean the E-CORE.

SUBTASK 23-91-01-410-001

- (5) Do these steps to install the coupler cover [1] on the Amphenol PN: DB110777 or SCI PN: 5242500 coupler:
 - (a) Put the coupler cover [1] and coupler base [2] together at the connector end.
 - (b) Hold the wires in position with your fingers.
 - (c) Turn the coupler cover [1] down until it engages the coupler base [2].
 - (d) Tighten the captive screw [5] (about 1/4 turn).

SUBTASK 23-91-01-410-002

- (6) Do these steps to install the coupler cover [1] on the SCI PN: 5446500-001 coupler:
 - (a) Hold the wires in position with your fingers.
 - (b) Lift the coupler cover [1] and close it.
 - (c) Lift the spring latch [4] over the coupler cover [1].

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SUBTASK 23-91-01-760-002

- (7) With the intrinsically safe approved bonding meter, COM-1550, make sure that the resistance between the panel and the coupler cover [1] is 5 milliohms or less.

SUBTASK 23-91-01-160-002

- (8) If the resistance is more than 5 milliohms on an Amphenol PN: DB110777 or SCI PN: 5242500 coupler, do these steps:
- (a) Remove the coupler cover [1].
 - (b) Remove the coupler base [2].
 - (c) Soak a cloth or nonmetallic brush in a solvent, B00083.
 - (d) Clean the area of the panel that the coupler [3] will touch with the cloth or brush.
 - (e) Clean the bottom of the coupler base [2].
 - (f) Do the coupler base installation again.
 - (g) Do the coupler cover [1] installation again.

SUBTASK 23-91-01-160-003

- (9) If the resistance is more than 5 milliohms on a SCI PN: 5446500-001 coupler, do these steps:
- (a) Loosen the spring latch [4] from the coupler [3].
 - (b) Lift the coupler cover [1].
 - (c) Remove the coupler [3].
 - (d) Soak a cloth or nonmetallic brush in a solvent, B00083.
 - (e) Clean the area of the panel that the coupler [3] will touch with the cloth or brush.
 - (f) Clean the bottom of the coupler [3].
 - (g) Do the coupler [3] installation again.
 - (h) Do the coupler cover [1] installation again.

SUBTASK 23-91-01-420-003

- (10) Connect the stub cable to the coupler cover [1].

SUBTASK 23-91-01-860-002

- (11) Close the circuit breaker(s) that were opened for the coupler removal.

SUBTASK 23-91-01-010-003

- (12) For these panels: P111, P112, P211, P212, P311, P312, P313, do the steps below;

- (a) Install the bus panel cover.
- (b) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117AL	Main Equipment Center Access Door

SUBTASK 23-91-01-010-004

- (13) For these panels: P115, P215, install the cargo liners you removed to get access to the couplers in the bulk cargo compartment.

SUBTASK 23-91-01-710-001

- (14) Find the coupler you replaced in the applicable table in the coupler removal task (ARINC 629 Current-Mode Coupler Removal, TASK 23-91-01-000-801).
- (a) After you find the correct table and the correct coupler number, look in the same row and find the LRU / SYSTEM column information.

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- (b) Find the applicable operational test for that LRU / SYSTEM in the Airplane Maintenance Manual (AMM) and then do that test.

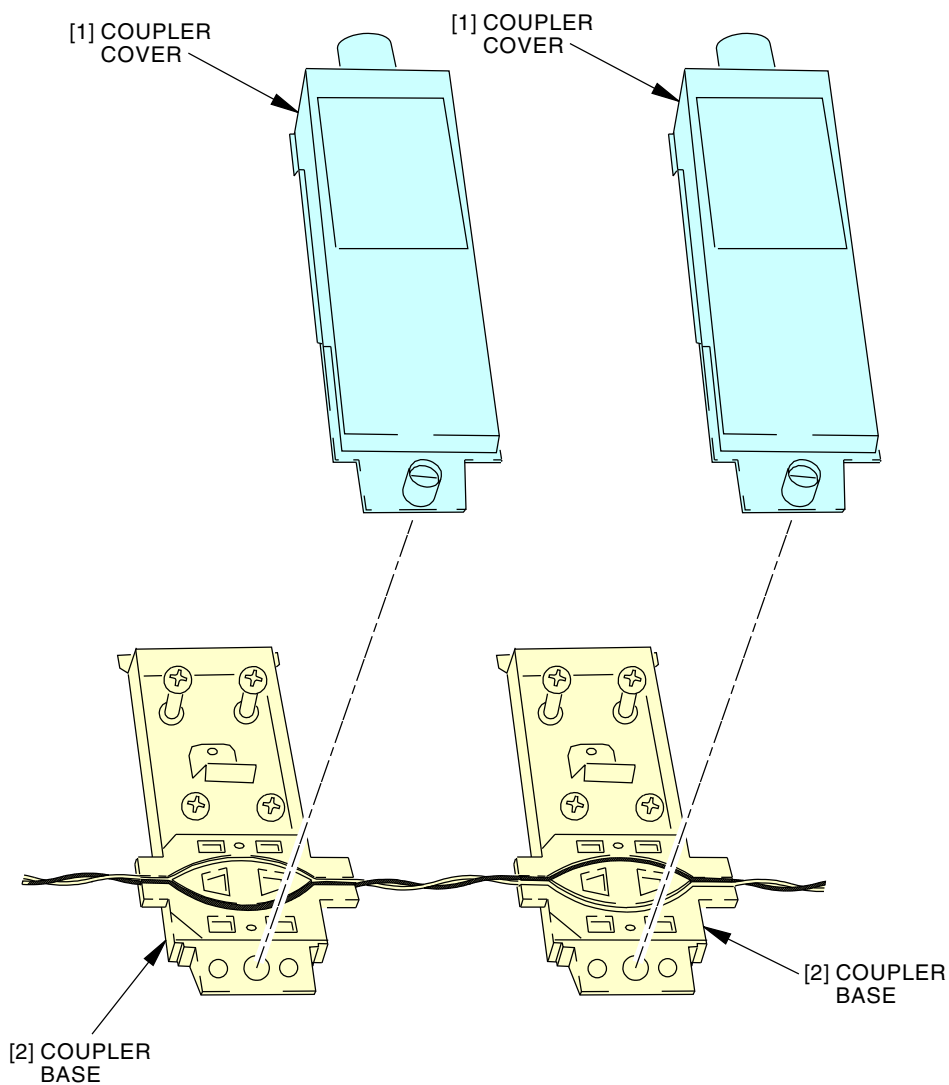
————— **END OF TASK** —————

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ARINC 629 Data Bus Installation - Adjacent Couplers
Figure 403/23-91-01-990-806

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OVERHEAD PANEL ARINC 629 SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure has these tasks:
- (1) An operational test of the Overhead Panel ARINC 629 System (OPAS).
 - (2) A system test of the Overhead Panel Interface Cards (OPIC).
 - (3) A system test of the Overhead Panel Cardfile (OPCF).
 - (4) A system test of the Panel Data Concentrator Unit (PDCU).
- B. It is necessary to use a Maintenance Access Terminal (MAT) for these tests.

TASK 23-93-00-730-801

2. Overhead Panel ARINC 629 System - Operational Test

A. General

- (1) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
212	Flight Compartment, Right

D. Prepare for the Test

SUBTASK 23-93-00-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-93-00-860-002

- (2) Make sure that these circuit breakers are closed:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C23605	OPAS 3
D	6	C23603	OPAS 1
G	20	C23602	OPAS 2

SUBTASK 23-93-00-860-003

- (3) Make sure that the GND TEST switch on the P61 overhead maintenance panel is in the ENABLE position.

E. OPAS Operational Test

SUBTASK 23-93-00-710-001

- (1) Use a maintenance access terminal (MAT) to do the OPAS operational test:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE

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- 3) GROUND TESTS
 - 4) 23 Overhead Panel ARINC 629 System
 - 5) SYSTEM TEST
 - 6) Left Overhead Panel ARINC 629 System
 - 7) CONTINUE
- (b) Do the instructions that show on the MAT and then make these selections:
- 1) CONTINUE
 - 2) START TEST
- (c) When the test is completed (approximately 2 minutes), make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
- NOTE: If the MAT shows operating after 2 minutes, select STOP TEST and do the corrective action for the maintenance message shown.
- (d) Make sure that these status messages are not shown on the MFD:
- NOTE: These messages are shown on the STATUS page of the MFD.
- 1) OPBC L
 - 2) OPIC LA1
 - 3) OPIC LA2
 - 4) OPIC RA1
 - 5) OPIC RA2
 - 6) PDCU L
 - 7) PDCU R
- (e) Make these selections on the MAT:
- 1) NEW TEST
 - 2) 23 Overhead Panel ARINC 629 System
 - 3) SYSTEM TEST
 - 4) Right Overhead Panel ARINC 629 System
 - 5) CONTINUE
- (f) Do the instructions that show on the MAT and then make these selections:
- 1) CONTINUE
 - 2) START TEST
- (g) When the test is completed (approximately 2 minutes), make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
- NOTE: If the MAT shows operating after 2 minutes, select STOP TEST and do the corrective action for the maintenance message shown.
- (h) To put the MAT back to its initial condition, make these selections:
- 1) LINE MAINTENANCE
 - 2) EXIT MAINTENANCE
- (i) Make sure that these status messages are not shown on the MAT:
- NOTE: These messages are shown on the STATUS page of the MFD.
- 1) OPBC R



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- 2) OPIC LA1
 - 3) OPIC LA2
 - 4) OPIC RA1
 - 5) OPIC RA2
 - 6) PDCU L
 - 7) PDCU R
- (j) On the P61 overhead maintenance panel, set the GND TEST switch to the NORM position and close the guard.

————— **END OF TASK** —————

TASK 23-93-00-730-802

3. Overhead Panel Interface Card - System Test

A. General

- (1) This test has 4 parts. Each part tests one of the Overhead Panel Interface Cards (OPIC).
- (2) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
212	Flight Compartment, Right

D. Prepare for the Test

SUBTASK 23-93-00-860-005

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-93-00-860-006

- (2) Make sure that the GND TEST switch on the P61 overhead maintenance panel is in the ENABLE position.

E. Left A1 OPIC System Test

SUBTASK 23-93-00-710-002

- (1) Use a maintenance access terminal (MAT) to do input monitoring of the left A1 OPIC status data:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) OTHER FUNCTIONS
 - 3) INPUT MONITORING
 - 4) GENERAL INPUT
 - 5) CONTINUE
 - (b) Put the cursor in the direct entry field.

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- (c) Use the keyboard to enter the lines that follow:

NOTE: Enter one line in each box on the screen.

- 1) L/629/SYS L/E79/1/2-2/2-0
- 2) L/629/SYS L/E7A/1/4-4/2-0
- 3) L/629/SYS L/E77/1/4-4/2-0
- 4) L/629/SYS L/E79/1/5-5/2-0
- 5) L/629/SYS L/E78/1/5-5/2-0
- 6) L/629/SYS L/E77/1/7-7/2-0
- 7) L/629/SYS L/E77/1/10-10/2-0
- 8) L/629/SYS L/E78/1/3-3/2-0

- (d) Open these circuit breakers:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	3	C35606	CHAN A OXY DEPLOY
H	4	C35607	CHAN B OXY DEPLOY

- (e) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch position.

Table 501/23-93-00-993-837

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/1/2-2/2-0	PASS OXYGEN	ON OFF	11,10	10 01

- (f) Close these circuit breakers:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	3	C35606	CHAN A OXY DEPLOY
H	4	C35607	CHAN B OXY DEPLOY

- (g) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch position.

Table 502/23-93-00-993-873

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/1/2-2/2-0	CAMERA LIGHTS	ON OFF	15,14	10 01

- (h) Open these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL
L	20	C29601	L D-PRESS VLV SPLY
M	28	C29607	C1 HYD PUMP CTRL

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Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C29603	LEFT EDP SUPPLY SHUTOFF VALVE

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	4	C29609	C HYD AIR PUMP 1

- (i) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 503/23-93-00-993-838

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E7A/1/4-4/2-0	C1 AIR DEMAND	AUTO ON OFF	12-10	101 011 110
	C1 ELEC PRIMARY	ON OFF	9,8	10 01
	R ELEC DEMAND	AUTO ON OFF	4-2	101 011 110

- (j) Close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL
L	20	C29601	L D-PRESS VLV SPLY
M	28	C29607	C1 HYD PUMP CTRL

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C29603	LEFT EDP SUPPLY SHUTOFF VALVE

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	4	C29609	C HYD AIR PUMP 1

- (k) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.
- NOTE: The switches in the section that follows cause the exterior lights to come on and go off. Follow the safety procedures as required. You can keep the lights off by opening the applicable circuit breakers.

Table 504/23-93-00-993-839

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/1/5-5/2-0	LEFT LANDING	ON OFF	7,6	10 01

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Table 504/23-93-00-993-839 (Continued)

MONITOR LINE	SWITCH	POSITION	BITS	STATE
	NOSE LANDING	ON OFF	9,8	10 01
	L RUNWAY TURNOFF	ON OFF	11,10	10 01
	TAXI	ON OFF	13,12	10 01
	STROBE	ON OFF	15,14	10 01

(l) Open these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	21	C28647	CTR L OVRD FUEL PUMP CTRL
L	22	C28645	L FUEL JETT PUMP CTRL
L	23	C28629	FUEL XFEED VLV FWD
L	24	C28631	L FUEL JETT ISLN VLV

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	11	C28609	R AFT FUEL BOOST PUMP CTRL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	2	C28604	L FWD FUEL BOOST PUMP CTRL

(m) Select run in the box with the monitor line shown below.

1) Make sure that the bit values are as shown for the indicated switch positions.

Table 505/23-93-00-993-840

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/1/5-5/2-0	ARM (FUEL JET)	ARMED OFF	9,8	10 01

(n) Close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	21	C28647	CTR L OVRD FUEL PUMP CTRL
L	22	C28645	L FUEL JETT PUMP CTRL
L	23	C28629	FUEL XFEED VLV FWD
L	24	C28631	L FUEL JETT ISLN VLV

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	11	C28609	R AFT FUEL BOOST PUMP CTRL

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Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	2	C28604	L FWD FUEL BOOST PUMP CTRL



DO NOT PUSH THE FWD ARM SWITCH ON THE CARGO FIRE PANEL IF THE HORIZONTAL BAR SHOWS IN THE UPPER HALF OF THE DISCH SWITCH. IF YOU DO NOT OBEY THIS INSTRUCTION, THE FIRE EXTINGUISHING BOTTLES CAN ACCIDENTALLY DISCHARGE AND INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (o) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 506/23-93-00-993-841

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/1/7-7/2-0	FWD CARGO FIRE ARM	ARM OFF	15,14	10 01



DO NOT PUSH THE DISCH SWITCH ON THE CARGO FIRE PANEL IF ARMED SHOWS IN THE UPPER HALF OF THE FWD ARM SWITCH OR THE AFT ARM SWITCH. IF YOU DO NOT OBEY THIS INSTRUCTION, THE FIRE EXTINGUISHING BOTTLES CAN ACCIDENTALLY DISCHARGE AND INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (p) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 507/23-93-00-993-842

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/1/7-7/2-0	CARGO FIRE DISCHARGE	IN OFF	1,0	10 01

- (q) Open these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	C21625	FWD UPR/L LWR RECIRC FAN CTRL

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	5	C21626	AFT UPR/R LWR RECIRC FAN CTRL
P	12	C36612	AIR SPLY R PRI
P	13	C36614	AIR SPLY R BACKUP
P	14	C36616	AIR SPLY R SOL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C36611	AIR SPLY L PRI
C	2	C36613	AIR SPLY L BACKUP

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Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C36615	AIR SPLY L SOL

(r) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 508/23-93-00-993-843

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/1/4-4/2-0	L PACK	ON OFF	11,10	10 01
	L TRIM AIR	ON OFF	13,12	10 01
L/629/SYS L/E77/1/10-10/2-0	L ISLN VALVE	AUTO CLOSED	5,4	10 01
	C ISLN VALVE	AUTO CLOSED	3,2	10 01
	L ENG	ON OFF	1,0	10 01
	FWD OUTFLOW VALVE	MAN AUTO	7,6	10 01
L/629/SYS L/E77/1/7-7/2-0	LANDING ALTITUDE	OFF	13-8	000000

(s) Close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	C21625	FWD UPR/L LWR RECIRC FAN CTRL

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	5	C21626	AFT UPR/R LWR RECIRC FAN CTRL
P	12	C36612	AIR SPLY R PRI
P	13	C36614	AIR SPLY R BACKUP
P	14	C36616	AIR SPLY R SOL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C36611	AIR SPLY L PRI
C	2	C36613	AIR SPLY L BACKUP
C	3	C36615	AIR SPLY L SOL

(t) Open this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C28001	L ENGINE FUEL SPAR VALVE

(u) Select run in the box with the monitor line shown below.

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- 1) Make sure that the bit values are as shown.

Table 509/23-93-00-993-844

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/1/3-3/2-0			13,12	00

- (v) Close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C28001	L ENGINE FUEL SPAR VALVE

- 1) Make sure that the bit values are as shown.

Table 510/23-93-00-993-845

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/1/3-3/2-0			13,12	11

F. Left A2 OPIC System Test

SUBTASK 23-93-00-710-003

- (1) Use a maintenance access terminal (MAT) to do input monitoring of the left A2 OPIC status data:

- (a) Make these selections on the MAT:

- 1) ONBOARD MAINTENANCE
- 2) OTHER FUNCTIONS
- 3) INPUT MONITORING
- 4) GENERAL INPUT
- 5) CONTINUE

- (b) Put the cursor in the direct entry field.

- (c) Use the keyboard to enter the lines that follow:

NOTE: Enter one line in each box on the screen.

- 1) L/629/SYS L/E79/2/2-2/2-0
- 2) L/629/SYS L/E7A/2/4-4/2-0
- 3) L/629/SYS L/E77/2/4-4/2-0
- 4) L/629/SYS L/E79/2/5-5/2-0
- 5) L/629/SYS L/E78/2/5-5/2-0
- 6) L/629/SYS L/E77/2/7-7/2-0
- 7) L/629/SYS L/E77/2/10-10/2-0
- 8) L/629/SYS L/E78/2/3-3/2-0

- (d) Open these circuit breakers:

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	3	C35606	CHAN A OXY DEPLOY
H	4	C35607	CHAN B OXY DEPLOY

- (e) Select run in the box with the monitor line shown below.

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- 1) Make sure that the bit values are as shown for the indicated switch position.

Table 511/23-93-00-993-846

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/2-2/2-0	PASS OXYGEN	ON OFF	11,10	10 01

- (f) Close these circuit breakers:

Standby Power Management Panel, P310

Row	Col	Number	Name
H	3	C35606	CHAN A OXY DEPLOY
H	4	C35607	CHAN B OXY DEPLOY

- (g) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch position.

Table 512/23-93-00-993-874

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/2-2/2-0	CAMERA LIGHTS	ON OFF	15,14	10 01

- (h) Open these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
L	19	C29604	R HYD PUMP CTRL
L	20	C29601	L D-PRESS VLV SPLY
M	28	C29607	C1 HYD PUMP CTRL

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	5	C29603	LEFT EDP SUPPLY SHUTOFF VALVE

Standby Power Management Panel, P310

Row	Col	Number	Name
D	4	C29609	C HYD AIR PUMP 1

- (i) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 513/23-93-00-993-847

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E7A/2/4-4/2-0	C1 AIR DEMAND	AUTO ON OFF	12-10	101 011 110
	C1 ELEC PRIMARY	ON OFF	9,8	10 01

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Table 513/23-93-00-993-847 (Continued)

MONITOR LINE	SWITCH	POSITION	BITS	STATE
	R ELEC DEMAND	AUTO ON OFF	4-2	101 011 110

- (j) Close these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
L	19	C29604	R HYD PUMP CTRL
L	20	C29601	L D-PRESS VLV SPLY
M	28	C29607	C1 HYD PUMP CTRL

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	5	C29603	LEFT EDP SUPPLY SHUTOFF VALVE

Standby Power Management Panel, P310

Row	Col	Number	Name
D	4	C29609	C HYD AIR PUMP 1

- (k) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

NOTE: The switches in the section that follows cause the exterior lights to come on and go off. Follow the safety procedures as required. You can keep the lights off by opening the applicable circuit breakers.

Table 514/23-93-00-993-848

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/5-5/2-0	LEFT LANDING	ON OFF	7,6	10 01
	NOSE LANDING	ON OFF	9,8	10 01
	L RUNWAY TURNOFF	ON OFF	11,10	10 01
	TAXI	ON OFF	13,12	10 01
	STROBE	ON OFF	15,14	10 01

- (l) Open these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
L	21	C28647	CTR L OVRD FUEL PUMP CTRL
L	22	C28645	L FUEL JETT PUMP CTRL
L	23	C28629	FUEL XFEED VLV FWD
L	24	C28631	L FUEL JETT ISLN VLV

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Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	11	C28609	R AFT FUEL BOOST PUMP CTRL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	2	C28604	L FWD FUEL BOOST PUMP CTRL

(m) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 515/23-93-00-993-849

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/2/5-5/2-0	ARM (FUEL JET)	ARMED OFF	9,8	10 01

(n) Close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	21	C28647	CTR L OVRD FUEL PUMP CTRL
L	22	C28645	L FUEL JETT PUMP CTRL
L	23	C28629	FUEL XFEED VLV FWD
L	24	C28631	L FUEL JETT ISLN VLV

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	11	C28609	R AFT FUEL BOOST PUMP CTRL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	2	C28604	L FWD FUEL BOOST PUMP CTRL



WARNING

DO NOT PUSH THE FWD ARM SWITCH ON THE CARGO FIRE PANEL IF THE HORIZONTAL BAR SHOWS IN THE UPPER HALF OF THE DISCH SWITCH. IF YOU DO NOT OBEY THIS INSTRUCTION, THE FIRE EXTINGUISHING BOTTLES CAN ACCIDENTALLY DISCHARGE AND INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(o) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 516/23-93-00-993-850

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/2/7-7/2-0	FWD CARGO FIRE ARM	ARM OFF	15,14	10 01

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WARNING

DO NOT PUSH THE DISCH SWITCH ON THE CARGO FIRE PANEL IF ARMED SHOWS IN THE UPPER HALF OF THE FWD ARM SWITCH OR THE AFT ARM SWITCH. IF YOU DO NOT OBEY THIS INSTRUCTION, THE FIRE EXTINGUISHING BOTTLES CAN ACCIDENTALLY DISCHARGE AND INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (p) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 517/23-93-00-993-851

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/2/7-7/2-0	CARGO FIRE DISCHARGE	IN OFF	1,0	10 01

- (q) Open these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
G	20	C21625	FWD UPR/L LWR RECIRC FAN CTRL

Right Power Management Panel, P210

Row	Col	Number	Name
G	5	C21626	AFT UPR/R LWR RECIRC FAN CTRL
P	12	C36612	AIR SPLY R PRI
P	13	C36614	AIR SPLY R BACKUP
P	14	C36616	AIR SPLY R SOL

Standby Power Management Panel, P310

Row	Col	Number	Name
C	1	C36611	AIR SPLY L PRI
C	2	C36613	AIR SPLY L BACKUP
C	3	C36615	AIR SPLY L SOL

- (r) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 518/23-93-00-993-852

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/2/4-4/2-0	L PACK	ON OFF	11,10	10 01
	L TRIM AIR	ON OFF	13,12	10 01
L/629/SYS L/E77/2/10-10/2-0	L ISLN VALVE	AUTO CLOSED	5,4	10 01
	C ISLN VALVE	AUTO CLOSED	3,2	10 01
	L ENG	ON OFF	1,0	10 01

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Table 518/23-93-00-993-852 (Continued)

MONITOR LINE	SWITCH	POSITION	BITS	STATE
	FWD OUTFLOW VALVE	MAN AUTO	7,6	10 01
L/629/SYS L/E77/2/7-7/2-0	LANDING ALTITUDE	OFF	13-8	000000

(s) Close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	C21625	FWD UPR/L LWR RECIRC FAN CTRL

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	5	C21626	AFT UPR/R LWR RECIRC FAN CTRL
P	12	C36612	AIR SPLY R PRI
P	13	C36614	AIR SPLY R BACKUP
P	14	C36616	AIR SPLY R SOL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C36611	AIR SPLY L PRI
C	2	C36613	AIR SPLY L BACKUP
C	3	C36615	AIR SPLY L SOL

(t) Open this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C28001	L ENGINE FUEL SPAR VALVE

(u) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown.

Table 519/23-93-00-993-853

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/2/3-3/2-0			13,12	00

(v) Close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C28001	L ENGINE FUEL SPAR VALVE

- 1) Make sure that the bit values are as shown.

Table 520/23-93-00-993-854

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/2/3-3/2-0			13,12	11

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G. Right A1 OPIC System Test

SUBTASK 23-93-00-710-004

(1) Use a maintenance access terminal (MAT) to do input monitoring of the right A1 OPIC status data:

(a) Make these selections on the MAT:

- 1) ONBOARD MAINTENANCE
- 2) OTHER FUNCTIONS
- 3) INPUT MONITORING
- 4) GENERAL INPUT
- 5) CONTINUE

(b) Put the cursor in the direct entry field.

(c) Use the keyboard to enter the lines that follow:

NOTE: Enter one line in each box on the screen.

- 1) L/629/SYS L/E79/1/3-3/2-0
- 2) L/629/SYS L/E7A/1/3-3/2-0
- 3) L/629/SYS L/E79/1/6-6/2-0
- 4) L/629/SYS L/E78/1/6-6/2-0
- 5) L/629/SYS L/E77/1/8-8/2-0
- 6) L/629/SYS L/E77/1/3-3/2-0
- 7) L/629/SYS L/E77/1/5-5/2-0
- 8) L/629/SYS L/E77/1/6-6/2-0

(d) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

NOTE: The switches in the section that follows cause the emergency lights to come on and go off. Follow the safety procedures as required. You can keep the lights off by opening the applicable circuit breakers.

Table 521/23-93-00-993-855

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/1/3-3/2-0	EMERGENCY LIGHTS (P5) EMERGENCY LIGHTS (ATT PANEL)	ARMED NORMAL	12-10	000

(e) Open these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	20	C29602	RIGHT EDP SUPPLY SHUTOFF VALVE

Right Power Management Panel, P210

Row	Col	Number	Name
L	3	C29600	R D-PRESS VLV SPLY
L	4	C29605	L HYD PUMP CTRL
L	5	C29608	C2-HYD PUMP CTRL

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C29606	HYD AIR PUMP 2

(f) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 522/23-93-00-993-856

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E7A/1/3-3/2-0	C2 AIR DEMAND	AUTO ON OFF	12-10	101 011 110
	C2 ELEC PRIMARY	ON OFF	9,8	10 01
	L ELEC DEMAND	AUTO ON OFF	4-2	101 011 110

(g) Close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	20	C29602	RIGHT EDP SUPPLY SHUTOFF VALVE

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	3	C29600	R D-PRESS VLV SPLY
L	4	C29605	L HYD PUMP CTRL
L	5	C29608	C2-HYD PUMP CTRL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C29606	HYD AIR PUMP 2

(h) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

NOTE: The switches in the section that follows cause the exterior lights to come on and go off. Follow the safety procedures as required. You can keep the lights off by opening the applicable circuit breakers.

Table 523/23-93-00-993-857

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/1/6-6/2-0	RIGHT LANDING	ON OFF	1,0	10 01
	BEACON	ON OFF	9,8	10 01
	NAV	ON OFF	11,10	10 01

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Table 523/23-93-00-993-857 (Continued)

MONITOR LINE	SWITCH	POSITION	BITS	STATE
	WING	ON OFF	7,6	10 01
	R RUNWAY TURNOFF	ON OFF	3,2	10 01
L/629/SYS L/E78/1/6-6/2-0	FUEL TO REMAIN	OFF	13-8	000000



WARNING

DO NOT PUSH THE AFT ARM SWITCH ON THE CARGO FIRE PANEL IF THE HORIZONTAL BAR SHOWS IN THE UPPER HALF OF THE DISCH SWITCH. IF YOU DO NOT OBEY THIS INSTRUCTION, THE FIRE EXTINGUISHING BOTTLES CAN ACCIDENTALLY DISCHARGE AND INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (i) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 524/23-93-00-993-858

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/1/8-8/2-0	AFT CARGO FIRE ARM	ARM OFF	15,14	10 01

- (j) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 525/23-93-00-993-859

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/1/5-5/2-0	R PACK	ON OFF	11,10	10 01
	R TRIM AIR	ON OFF	13,12	10 01
L/629/SYS L/E77/1/6-6/2-0	R ISLN VALVE	AUTO CLOSED	5,4	10 01
	APU (BLEED AIR)	AUTO CLOSED	3,2	10 01
	R ENG	ON OFF	1,0	10 01
	AFT OUTFLOW VALVE	MAN AUTO	7,6	10 01

- (k) Use the keyboard to enter these lines on the MAT:

NOTE: Enter one line in each box on the screen.

- 1) L/629/SYS L/E78/1/7-7/2-0
2) L/629/SYS L/E79/1/4-4/2-0

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- (l) Open this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	17	C28003	APU FUEL S/O VALVE

- (m) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown.

Table 526/23-93-00-993-860

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/1/7-7/2-0			15,14	00

- (n) Close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	17	C28003	APU FUEL S/O VALVE

- (o) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown.

Table 527/23-93-00-993-861

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/1/7-7/2-0			15,14	11

- (p) Open this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	19	C28002	R ENGINE FUEL SPAR VALVE

- (q) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown.

Table 528/23-93-00-993-862

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/1/4-4/2-0			13,12	00

- (r) Close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	19	C28002	R ENGINE FUEL SPAR VALVE

- (s) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown.

Table 529/23-93-00-993-863

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/1/4-4/2-0			13,12	11

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H. Right A2 OPIC System Test

SUBTASK 23-93-00-710-005

(1) Use a maintenance access terminal (MAT) to do input monitoring of the right A2 OPIC status data:

(a) Make these selections on the MAT:

- 1) ONBOARD MAINTENANCE
- 2) OTHER FUNCTIONS
- 3) INPUT MONITORING
- 4) GENERAL INPUT
- 5) CONTINUE

(b) Put the cursor in the direct entry field.

(c) Use the keyboard to enter the lines that follow:

NOTE: Enter one line in each box on the screen.

- 1) L/629/SYS L/E79/2/3-3/2-0
- 2) L/629/SYS L/E7A/2/3-3/2-0
- 3) L/629/SYS L/E79/2/6-6/2-0
- 4) L/629/SYS L/E78/2/6-6/2-0
- 5) L/629/SYS L/E77/2/8-8/2-0
- 6) L/629/SYS L/E77/2/3-3/2-0
- 7) L/629/SYS L/E77/2/5-5/2-0
- 8) L/629/SYS L/E77/2/6-6/2-0

(d) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

NOTE: The switches in the section that follows cause the emergency lights to come on and go off. Follow the safety procedures as required. You can keep the lights off by opening the applicable circuit breakers.

Table 530/23-93-00-993-864

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/3-3/2-0	EMERGENCY LIGHTS (P5) EMERGENCY LIGHTS (ATT PANEL)	ARMED NORMAL	12-10	000

(e) Open these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	20	C29602	RIGHT EDP SUPPLY SHUTOFF VALVE

Right Power Management Panel, P210

Row	Col	Number	Name
L	3	C29600	R D-PRESS VLV SPLY
L	4	C29605	L HYD PUMP CTRL
L	5	C29608	C2-HYD PUMP CTRL

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C29606	HYD AIR PUMP 2

(f) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 531/23-93-00-993-865

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E7A/2/3-3/2-0	C2 AIR DEMAND	AUTO ON OFF	12-10	101 011 110
	C2 ELEC PRIMARY	ON OFF	9,8	10 01
	L ELEC DEMAND	AUTO ON OFF	4-2	101 011 110

(g) Close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	20	C29602	RIGHT EDP SUPPLY SHUTOFF VALVE

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	3	C29600	R D-PRESS VLV SPLV
L	4	C29605	L HYD PUMP CTRL
L	5	C29608	C2-HYD PUMP CTRL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C29606	HYD AIR PUMP 2

(h) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

NOTE: The switches in the section that follows cause the exterior lights to come on and go off. Follow the safety procedures as required. You can keep the lights off by opening the applicable circuit breakers.

Table 532/23-93-00-993-866

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/6-6/2-0	RIGHT LANDING	ON OFF	1,0	10 01
	BEACON	ON OFF	9,8	10 01
	NAV	ON OFF	11,10	10 01

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Table 532/23-93-00-993-866 (Continued)

MONITOR LINE	SWITCH	POSITION	BITS	STATE
	WING	ON OFF	7,6	10 01
	R RUNWAY TURNOFF	ON OFF	3,2	10 01
L/629/SYS L/E78/2/6-6/2-0	FUEL TO REMAIN	OFF	13-8	000000



WARNING

DO NOT PUSH THE AFT ARM SWITCH ON THE CARGO FIRE PANEL IF THE HORIZONTAL BAR SHOWS IN THE UPPER HALF OF THE DISCH SWITCH. IF YOU DO NOT OBEY THIS INSTRUCTION, THE FIRE EXTINGUISHING BOTTLES CAN ACCIDENTALLY DISCHARGE AND INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (i) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 533/23-93-00-993-867

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/2/8-8/2-0	AFT CARGO FIRE ARM	ARM OFF	15,14	10 01

- (j) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 534/23-93-00-993-868

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/2/5-5/2-0	R PACK	ON OFF	11,10	10 01
	R TRIM AIR	ON OFF	13,12	10 01
L/629/SYS L/E77/2/6-6/2-0	R ISLN VALVE	AUTO CLOSED	5,4	10 01
	APU (BLEED AIR)	AUTO CLOSED	3,2	10 01
	R ENG	ON OFF	1,0	10 01
	AFT OUTFLOW VALVE	MAN AUTO	7,6	10 01

- (k) Use the keyboard to enter these lines on the MAT:

NOTE: Enter one line in each box on the screen.

- 1) L/629/SYS L/E78/2/7-7/2-0
2) L/629/SYS L/E79/2/4-4/2-0

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- (l) Open this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	17	C28003	APU FUEL S/O VALVE

- (m) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown.

Table 535/23-93-00-993-869

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/2/7-7/2-0			15,14	00

- (n) Close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	17	C28003	APU FUEL S/O VALVE

- (o) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown.

Table 536/23-93-00-993-870

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/2/7-7/2-0			15,14	11

- (p) Open this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	19	C28002	R ENGINE FUEL SPAR VALVE

- (q) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown.

Table 537/23-93-00-993-871

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/4-4/2-0			13,12	00

- (r) Close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	19	C28002	R ENGINE FUEL SPAR VALVE

- (s) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown.

Table 538/23-93-00-993-872

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/4-4/2-0			13,12	11

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- (t) On the P61 overhead maintenance panel, set the GND TEST switch to the NORM position and close the guard.

————— END OF TASK —————

TASK 23-93-00-730-803

4. Overhead Panel Cardfiles - System Test

A. General

- (1) This test has 2 parts. Each part tests one of the Overhead Panel Cardfiles (OPCF).
- (2) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
212	Flight Compartment, Right

D. Prepare for the Test

SUBTASK 23-93-00-860-007

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-93-00-860-008

- (2) Make sure that the GND TEST switch on the P61 overhead maintenance panel is in the ENABLE position.

E. Left OPCF System Test

SUBTASK 23-93-00-860-016

- (1) Put the FLIGHT DECK TEMPERATURE selector to the MANUAL position.

SUBTASK 23-93-00-710-006

- (2) Use a maintenance access terminal (MAT) to do input monitoring of the left OPCF status data:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) OTHER FUNCTIONS
 - 3) INPUT MONITORING
 - 4) GENERAL INPUT
 - 5) CONTINUE
 - (b) Put the cursor in the direct entry field.
 - (c) Use the keyboard to enter the lines that follow:

NOTE: Enter one line in each box on the screen.

 - 1) L/629/SYS L/E77/1/4-4/2-0
 - 2) L/629/SYS L/E77/1/7-7/2-0
 - 3) L/629/SYS L/E77/1/9-9/2-0

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- 4) L/629/SYS L/E77/1/10-10/2-0
 - 5) L/629/SYS L/E78/1/3-3/2-0
 - 6) L/629/SYS L/E78/1/5-5/2-0
 - 7) L/629/SYS L/E79/1/2-2/2-0
 - 8) L/629/SYS L/E79/1/5-5/2-0
- (d) 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>
G	20	C21625	FWD UPR/L LWR RECIRC FAN CTRL

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	5	C21626	AFT UPR/R LWR RECIRC FAN CTRL
P	12	C36612	AIR SPLY R PRI
P	13	C36614	AIR SPLY R BACKUP
P	14	C36616	AIR SPLY R SOL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C36611	AIR SPLY L PRI
C	2	C36613	AIR SPLY L BACKUP
C	3	C36615	AIR SPLY L SOL



CAUTION

DO NOT DO THIS TEST WHILE THE APU IS OPERATING. YOU CAN DAMAGE THE EQUIPMENT IF YOU TURN THE APU OFF DURING THE TEST.



CAUTION

THIS TEST WILL TURN THE ENVIRONMENTAL CONTROL SYSTEM ELEMENTS ON AND OFF. USE THE APPLICABLE PRECAUTIONS TO PREVENT DAMAGE TO EQUIPMENT.

- (e) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 539/23-93-00-993-801

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/1/4-4/2-0	UPPER RECIRCULATION FANS	ON OFF	15,14	10 01
	L PACK	ON OFF	11,10	10 01
	L TRIM AIR	ON OFF	13,12	10 01
			9-0	0000000000

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WARNING

DO NOT PUSH THE FWD ARM SWITCH ON THE CARGO FIRE PANEL IF THE HORIZONTAL BAR SHOWS IN THE UPPER HALF OF THE DISCH SWITCH. IF YOU DO NOT OBEY THIS INSTRUCTION, THE FIRE EXTINGUISHING BOTTLES CAN ACCIDENTALLY DISCHARGE AND INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(f) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch position.

Table 540/23-93-00-993-802

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/1/7-7/2-0	FWD CARGO FIRE ARM	ARM OFF	15,14	10 01



WARNING

DO NOT PUSH THE DISCH SWITCH ON THE CARGO FIRE PANEL IF ARMED SHOWS IN THE UPPER HALF OF THE FWD ARM SWITCH OR THE AFT ARM SWITCH. IF YOU DO NOT OBEY THIS INSTRUCTION, THE FIRE EXTINGUISHING BOTTLES CAN ACCIDENTALLY DISCHARGE AND INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(g) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch position.

Table 541/23-93-00-993-803

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/1/7-7/2-0	CARGO FIRE DISCHARGE	IN OFF	1,0	10 01



WARNING

DO NOT TWIST THE APU FIRE HANDLE. IF YOU PULL THE HANDLE, YOU WILL SHUT THE APU DOWN. IF YOU TWIST THE HANDLE, YOU WILL DISCHARGE THE FIRE EXTINGUISHING BOTTLES.



WARNING

DO NOT DO THIS TEST WHILE THE APU IS OPERATING. YOU CAN DAMAGE THE EQUIPMENT IF YOU TURN THE APU OFF DURING THE TEST.

(h) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 542/23-93-00-993-804

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/1/7-7/2-0	APU FIRE HANDLE	OUT OFF	5,4	10 01
	FIRE/OVHT TEST	IN OFF	3,2	10 01
	LANDING ALTITUDE	OFF	13-8	000000

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Table 542/23-93-00-993-804 (Continued)

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/1/10-10/2-0	L ISLN VALVE	AUTO CLOSED	5,4	10 01
	C ISLN VALVE	AUTO CLOSED	3,2	10 01
	L ENG	ON OFF	1,0	10 01
	FWD OUTFLOW VALVE	MAN AUTO	7,6	10 01
L/629/SYS L/E77/1/9-9/2-0	GASPER	ON OFF	1,0	10 01

- (i) Remove the safety tags and close these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
G	20	C21625	FWD UPR/L LWR RECIRC FAN CTRL

Right Power Management Panel, P210

Row	Col	Number	Name
G	5	C21626	AFT UPR/R LWR RECIRC FAN CTRL
P	12	C36612	AIR SPLY R PRI
P	13	C36614	AIR SPLY R BACKUP
P	14	C36616	AIR SPLY R SOL

Standby Power Management Panel, P310

Row	Col	Number	Name
C	1	C36611	AIR SPLY L PRI
C	2	C36613	AIR SPLY L BACKUP
C	3	C36615	AIR SPLY L SOL

- (j) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

NOTE: The switches in the section that follows cause the interior and exterior lights to come on and go off. Follow the safety procedures as required. You can keep the lights off by opening the applicable circuit breakers.

Table 543/23-93-00-993-805

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/1/5-5/2-0	LEFT LANDING	ON OFF	7,6	10 01
	NOSE LANDING	ON OFF	9,8	10 01
	L RUNWAY TURN OFF	ON OFF	11,10	10 01

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Table 543/23-93-00-993-805 (Continued)

MONITOR LINE	SWITCH	POSITION	BITS	STATE
	TAXI	ON OFF	13,12	10 01
	STROBE	ON OFF	15,14	10 01
	SEAT BELTS	AUTO ON OFF	2-0	101 011 110
L/629/SYS L/E78/1/3-3/2-0	L EEC MODE	NORM ALTN	7,6	10 01

(k) Make sure that the bit values are as shown for the indicated switch positions.

Table 544/23-93-00-993-806

MONITOR LINE	SWITCH	POSITION	BITS	STATE
	L START	CON START NORM	2-0	011 110 101

(l) Open this circuit breaker and install safety tag:

Standby Power Management Panel, P310

Row	Col	Number	Name
H	11	C30603	EAI CTRL L

1) Make sure that the bit values are as shown for the indicated switch position.

Table 545/23-93-00-993-808

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/1/3-3/2-0	L ENGINE ANTI-ICE	AUTO ON OFF	5-3	101 011 110

(m) Remove the safety tag and close this circuit breaker:

Standby Power Management Panel, P310

Row	Col	Number	Name
H	11	C30603	EAI CTRL L

(n) Open this circuit breaker:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE

1) Make sure that the bit values are as shown.

Table 546/23-93-00-993-809

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/1/3-3/2-0			13,12	00

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- (o) Close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	5	C28001	L ENGINE FUEL SPAR VALVE

- 1) Make sure that the bit values are as shown.

Table 547/23-93-00-993-836

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/1/3-3/2-0			13,12	11

- (p) Open these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	21	C28647	CTR L OVRD FUEL PUMP CTRL
L	22	C28645	L FUEL JETT PUMP CTRL
L	23	C28629	FUEL XFEED VLV FWD
L	24	C28631	L FUEL JETT ISLN VLV

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	11	C28609	R AFT FUEL BOOST PUMP CTRL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	2	C28604	L FWD FUEL BOOST PUMP CTRL

- (q) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 548/23-93-00-993-812

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/1/5-5/2-0	L NOZZLE	ON OFF	15,14	10 01
	ARM (FUEL JET)	ARM OFF	9,8	10 01
	AUTOSTART	ON OFF	11,10	10 01
	FWD CROSSFEED	OPENED CLOSED	7,6	10 01
	L CENTER PUMP	ON OFF	5,4	10 01
	R AFT PUMPS	ON OFF	3,2	10 10
	L FWD PUMPS	ON OFF	1,0	10 10

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- (r) Close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	21	C28647	CTR L OVRD FUEL PUMP CTRL
L	22	C28645	L FUEL JETT PUMP CTRL
L	23	C28629	FUEL XFEED VLV FWD
L	24	C28631	L FUEL JETT ISLN VLV

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	11	C28609	R AFT FUEL BOOST PUMP CTRL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	2	C28604	L FWD FUEL BOOST PUMP CTRL

- (s) Open these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	25	C24603	L IDG DISC

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	2	C24602	R IDG DISC
J	9	C24684	L GCU/BPCU

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	8	C24601	L GCU
B	9	C24600	R GCU
H	3	C35606	CHAN A OXY DEPLOY
H	4	C35607	CHAN B OXY DEPLOY
H	7	C24606	APU GCU



CAUTION

THE ENGINES MUST NOT BE RUNNING AND THE APU MUST BE SHUT DOWN BEFORE YOU DO THIS TEST. THE ELECTRICAL SWITCH FUNCTIONS HAVE BEEN DISABLED. DAMAGE TO EQUIPMENT CAN OCCUR.

- (t) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 549/23-93-00-993-814

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/1/2-2/2-0	PASS OXYGEN	ON	11,10	10
		OFF		01
	APU GEN	OFF	9,8	01
		ON		10

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Table 549/23-93-00-993-814 (Continued)

MONITOR LINE	SWITCH	POSITION	BITS	STATE
	L BACKUP GEN	OFF ON	7,6	01 10
L/629/SYS L/E77/1/10-10/2-0	L DRIVE DISC	IN OFF	5,4	10 01
	L GEN CTRL	OFF ON	3,2	01 10
	R AFT PUMPS	ON OFF	3,2	10 01
	L BUS TIE	OFF AUTO	1,0	01 10

(u) Close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	25	C24603	L IDG DISC

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	2	C24602	R IDG DISC
J	9	C24684	L GCU/BPCU

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	8	C24601	L GCU
B	9	C24600	R GCU
H	3	C35606	CHAN A OXY DEPLOY
H	4	C35607	CHAN B OXY DEPLOY
H	7	C24606	APU GCU

(v) Use the keyboard to enter the lines that follow:

NOTE: Enter one line in each box on the screen.

- 1) L/629/SYS L/E79/1/7-7/2-0
- 2) L/629/SYS L/E7A/1/4-4/2-0
- 3) L/629/SYS L/E7A/1/5-5/2-0
- 4) L/629/SYS L/DB4/1/7-7/2-0

(w) Select run in the box with the monitor line shown below.

(x) Make sure that the bit values are as shown for the indicated switch position.

NOTE: If the airplane has window lock switches;

to change the bit state to 1 put the window handle in the unlock position.

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Table 550/23-93-00-993-815

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/1/7-7/2-0	WINDOW LOCK	UNLOCK	15	1 0

(y) Open these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
L	19	C29604	R HYD PUMP CTRL
L	20	C29601	L D-PRESS VLV SPLY
M	28	C29607	C1 HYD PUMP CTRL

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	5	C29603	LEFT EDP SUPPLY SHUTOFF VALVE

Standby Power Management Panel, P310

Row	Col	Number	Name
D	4	C29609	C HYD AIR PUMP 1

(z) Select run in the box with the monitor line shown below.

1) Make sure that the bit values are as shown for the indicated switch positions.

Table 551/23-93-00-993-816

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E7A/1/4-4/2-0	C1 AIR DEMAND	AUTO ON OFF	12-10	101 011 110
	C1 ELEC PRIMARY	ON OFF	9,8	10 01
	R ELEC DEMAND	AUTO ON OFF	4-2	101 011 110
	L ENG PRIMARY	ON OFF	1,0	10 01

(aa) Close these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
L	19	C29604	R HYD PUMP CTRL
L	20	C29601	L D-PRESS VLV SPLY
M	28	C29607	C1 HYD PUMP CTRL

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	5	C29603	LEFT EDP SUPPLY SHUTOFF VALVE

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Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	4	C29609	C HYD AIR PUMP 1

- 1) Make sure that the bit values are as shown.

Table 552/23-93-00-993-817

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E7A/1/5-5/2-0			15,14	11
L/629/SYS L/DB4/1/7-7/2-0			9,8	00

F. Right OPCF System Test

SUBTASK 23-93-00-860-017

- (1) Put the CABIN TEMPERATURE selector on the P5 AIR CONDITIONING panel to the C position.

SUBTASK 23-93-00-710-007

- (2) Use a maintenance access terminal (MAT) to do input monitoring of the right OPCF status data:

- (a) Make these selections on the MAT:

- 1) ONBOARD MAINTENANCE
- 2) OTHER FUNCTIONS
- 3) INPUT MONITORING
- 4) GENERAL INPUT
- 5) CONTINUE

- (b) Put the cursor in the direct entry field.

- (c) Use the keyboard to enter the lines that follow:

NOTE: Enter one line in each box on the screen.

- 1) L/629/SYS L/E77/2/3-3/2-0
- 2) L/629/SYS L/E77/2/5-5/2-0
- 3) L/629/SYS L/E77/2/6-6/2-0
- 4) L/629/SYS L/E77/2/8-8/2-0
- 5) L/629/SYS L/E78/2/4-4/2-0
- 6) L/629/SYS L/E78/2/6-6/2-0
- 7) L/629/SYS L/E78/2/7-7/2-0
- 8) L/629/SYS L/E79/2/4-4/2-0

- (d) 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>
G	20	C21625	FWD UPR/L LWR RECIRC FAN CTRL

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	5	C21626	AFT UPR/R LWR RECIRC FAN CTRL

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Right Power Management Panel, P210

Row	Col	Number	Name
P	12	C36612	AIR SPLY R PRI
P	13	C36614	AIR SPLY R BACKUP
P	14	C36616	AIR SPLY R SOL

Standby Power Management Panel, P310

Row	Col	Number	Name
C	1	C36611	AIR SPLY L PRI
C	2	C36613	AIR SPLY L BACKUP
C	3	C36615	AIR SPLY L SOL



CAUTION

DO NOT DO THIS TEST WHILE THE APU IS OPERATING. YOU CAN DAMAGE THE EQUIPMENT IF YOU TURN THE APU OFF DURING THE TEST.



CAUTION

THIS TEST WILL TURN THE ENVIRONMENTAL CONTROL SYSTEM ELEMENTS ON AND OFF. USE THE APPLICABLE PRECAUTIONS TO PREVENT DAMAGE TO EQUIPMENT.

- (e) Select run in the box with the monitor line shown below.
- (f) Make sure that the bit values are as shown for the indicated switch positions.

Table 553/23-93-00-993-818

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/2/3-3/2-0	EQUIP COOLING	OFF AUTO	7,6	01 10
	AFT (CARGO TEMP)	LOW HIGH OFF	5-3	101 011 110
	BULK (CARGO TEMP)	LOW HIGH OFF	2-0	101 011 110
L/629/SYS L/E77/2/5-5/2-0	LOWER RECIRCULATION FANS	ON OFF	15,14	10 01
	R PACK	ON OFF	11,10	10 01
	R TRIM AIR	ON OFF	13,12	10 01
	CABIN TEMP	C 2 pos CW	9-0	0001000010 0010000100
L/629/SYS L/E77/2/6-6/2-0	R ISLN VALVE	AUTO CLOSED	5,4	10 01

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Table 553/23-93-00-993-818 (Continued)

MONITOR LINE	SWITCH	POSITION	BITS	STATE
	APU (BLEED AIR)	AUTO CLOSED	3,2	10 01
	R ENG	ON OFF	1,0	10 01
	AFT OUTFLOW (BLEED AIR)	MAN AUTO	7,6	10 01



DO NOT PUSH THE AFT ARM SWITCH ON THE CARGO FIRE PANEL IF THE HORIZONTAL BAR SHOWS IN THE UPPER HALF OF THE DISCH SWITCH. IF YOU DO NOT OBEY THIS INSTRUCTION, THE FIRE EXTINGUISHING BOTTLES CAN ACCIDENTALLY DISCHARGE AND INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (g) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 554/23-93-00-993-819

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/2/8-8/2-0	AFT CARGO FIRE ARM	ARM OFF	15,14	10 01
	AIR COND RESET	IN OFF	13,12	10 01

- (h) Open these circuit breakers:

Right Power Management Panel, P210

Row	Col	Number	Name
L	6	C30600	WAI CTRL
P	11	C30602	EAI CTRL R

- (i) Select run in the box with the monitor line shown below.
- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 555/23-93-00-993-820

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/2/4-4/2-0	R ENGINE ANTI-ICE	AUTO ON OFF	5-3	101 011 110
L/629/SYS L/E78/2/7-7/2-0	WING	AUTO ON OFF	2-0	101 011 110

- (j) Close these circuit breakers:

Right Power Management Panel, P210

Row	Col	Number	Name
L	6	C30600	WAI CTRL

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Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	11	C30602	EAI CTRL R

- (k) 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>
G	20	C21625	FWD UPR/L LWR RECIRC FAN CTRL

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	5	C21626	AFT UPR/R LWR RECIRC FAN CTRL
P	12	C36612	AIR SPLY R PRI
P	13	C36614	AIR SPLY R BACKUP
P	14	C36616	AIR SPLY R SOL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C36611	AIR SPLY L PRI
C	2	C36613	AIR SPLY L BACKUP
C	3	C36615	AIR SPLY L SOL

- (l) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 556/23-93-00-993-821

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E77/2/6-6/2-0	APU POWER	TEST NORM	9,8	10 01
L/629/SYS L/E78/2/4-4/2-0	R EEC MODE	NORM ALTN	7,6	10 01

- 2) Make sure that the bit values are as shown for the indicated switch positions.

Table 557/23-93-00-993-822

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/2/4-4/2-0	R ENGINE START	CON START NORM	2-0	011 110 101

- (m) Open these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	26	C28607	L AFT FUEL BOOST PUMP CTRL
L	27	C28606	R FWD FUEL BOOST PUMP CTRL

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Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	13	C28630	R JETT ISLN VLV
K	14	C28646	R FUEL JETT PUMP CTRL
L	2	C28644	CTR R OVRD FUEL PUMP CTRL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	9	C28612	FUEL XFEED VLV AFT

(n) Select run in the box with the monitor line shown below.

1) Make sure that the bit values are as shown for the indicated switch positions.

Table 558/23-93-00-993-824

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/2/6-6/2-0	R NOZZLE	ON OFF	15,14	10 01
	FUEL TO REMAIN	OFF	13-8	000000
	AFT CROSSFEED	OPENED CLOSED	7,6	10 01
	R CENTER PUMP	ON OFF	5,4	10 01
	L AFT PUMPS	ON OFF	3,2	10 01
	R FWD PUMPS	ON OFF	1,0	10 01

(o) Close these circuit breakers:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	26	C28607	L AFT FUEL BOOST PUMP CTRL
L	27	C28606	R FWD FUEL BOOST PUMP CTRL

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	13	C28630	R JETT ISLN VLV
K	14	C28646	R FUEL JETT PUMP CTRL
L	2	C28644	CTR R OVRD FUEL PUMP CTRL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	9	C28612	FUEL XFEED VLV AFT

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- (p) Make sure that these circuit breakers are closed:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	17	C28003	APU FUEL S/O VALVE
A	20	C28649	FUEL SHUTOFF VALVE BUS

- (q) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown.

Table 559/23-93-00-993-826

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E78/2/7-7/2-0			15,14	11
L/629/SYS L/E79/2/4-4/2-0			13,12	11

- (r) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch position.

NOTE: If the airplane has window lock switches;

to change the bit state to 1 put the window handle in the unlock position.

Table 560/23-93-00-993-829

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/4-4/2-0	WINDOW LOCK	LOCK UNLOCK	11	0 1

- (s) Use the keyboard to enter the lines that follow:

NOTE: Enter one line in each box on the screen.

- 1) L/629/SYS L/E79/2/3-3/2-0
- 2) L/629/SYS L/E79/2/6-6/2-0
- 3) L/629/SYS L/E7A/2/3-3/2-0
- 4) L/629/SYS L/DB4/2/7-7/2-0
- 5) L/629/SYS L/DFE/2/6-6/2-0

- (t) Open these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	3	C49602	APUC 2

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	25	C24603	L IDG DISC

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	17	C28003	APU FUEL S/O VALVE

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Right Power Management Panel, P210

Row	Col	Number	Name
J	2	C24602	R IDG DISC
J	9	C24684	L GCU/BPCU

Standby Power Management Panel, P310

Row	Col	Number	Name
B	6	C49601	APUC 1
B	7	C49600	APU INLET DR ACTR
B	8	C24601	L GCU
B	9	C24600	R GCU
H	7	C24606	APU GCU
K	8	C24652	APU CRK CTRL
L	11	C28650	APU INLET DOOR/FUEL SOV CTRL



THE ENGINES MUST NOT BE RUNNING AND THE APU MUST BE SHUT DOWN BEFORE YOU DO THIS TEST. THE ELECTRICAL SWITCH FUNCTIONS HAVE BEEN DISABLED. DAMAGE TO EQUIPMENT CAN OCCUR.



MAKE SURE YOU OPEN THE APU C1 AND APU C2 CIRCUIT BREAKERS. IF YOU DO NOT, THE APU WILL START.

- (u) Select run in the box with the monitor line shown below.
- (v) Push the FIRE/OVHT TEST switch for approximately 5 seconds to reset the remote APU shutdown circuit.
 - 1) Make sure that the bit values are as shown for the indicated switch positions.

Table 561/23-93-00-993-830

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/3-3/2-0	APU START	OFF ON START	15-13	110 101 011
	R BACKUP GEN	OFF ON	7,6	01 10
	R DRIVE DISC	IN OFF	5,4	10 01
	R GEN CTRL	OFF ON	3,2	01 10
	R BUS TIE	OFF AUTO	1,0	01 10

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(w) Close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	3	C49602	APUC 2

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	25	C24603	L IDG DISC

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	17	C28003	APU FUEL S/O VALVE

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
J	2	C24602	R IDG DISC
J	9	C24684	L GCU/BPCU

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	6	C49601	APUC 1
B	7	C49600	APU INLET DR ACTR
B	8	C24601	L GCU
B	9	C24600	R GCU
H	7	C24606	APU GCU
K	8	C24652	APU CRK CTRL
L	11	C28650	APU INLET DOOR/FUEL SOV CTRL

- 1) Make sure that the bit values are as shown for the indicated switch positions.

NOTE: The switches in the section that follows cause the emergency lights to come on and go off. Follow the safety procedures as required. You can keep the lights off by opening the applicable circuit breakers.

Table 562/23-93-00-993-831

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/3-3/2-0	EMERGENCY LIGHTS (P5) EMERGENCY LIGHTS (ATT PANEL)	ARMED NORMAL	12-10	000

- (x) Select run in the box with the monitor line shown below.

- 1) Make sure that the bit values are as shown for the indicated switch positions.

NOTE: The switches in the section that follows cause the interior and exterior lights to come on and go off. Follow the safety procedures as required. You can keep the lights off by opening the applicable circuit breakers.

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Table 563/23-93-00-993-832

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E79/2/6-6/2-0	RIGHT LANDING	ON OFF	1,0	10 01
	R RUNWAY TURNOFF	ON OFF	3,2	10 01
	STORM	ON OFF	15,14	10 01
	NAV (ANTI-ICE)	ON OFF	11,10	10 01
	BEACON	ON OFF	9,8	10 01
	WING	ON OFF	7,6	10 01
	LOGO	ON OFF	5,4	10 01

(y) Open these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	20	C29602	RIGHT EDP SUPPLY SHUTOFF VALVE

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	3	C29600	R D-PRESS VLV SPLY
L	4	C29605	L HYD PUMP CTRL
L	5	C29608	C2-HYD PUMP CTRL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C29606	HYD AIR PUMP 2

(z) Select run in the box with the monitor line shown below.

1) Make sure that the bit values are as shown for the indicated switch positions.

Table 564/23-93-00-993-833

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/E7A/2/3-3/2-0	C2 AIR DEMAND	AUTO ON OFF	12-10	101 011 110
	C2 ELEC PRIMARY	ON OFF	9,8	10 01
	L ELEC DEMAND	AUTO ON OFF	4-2	101 011 110

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Table 564/23-93-00-993-833 (Continued)

MONITOR LINE	SWITCH	POSITION	BITS	STATE
	R ENG PRIMARY	ON OFF	1,0	10 01

(aa) Close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	20	C29602	RIGHT EDP SUPPLY SHUTOFF VALVE

Right Power Management Panel, P210

Row	Col	Number	Name
L	3	C29600	R D-PRESS VLV SPLY
L	4	C29605	L HYD PUMP CTRL
L	5	C29608	C2-HYD PUMP CTRL

Standby Power Management Panel, P310

Row	Col	Number	Name
D	5	C29606	HYD AIR PUMP 2

(ab) Make sure that the bit values are as shown.

Table 565/23-93-00-993-835

MONITOR LINE	SWITCH	POSITION	BITS	STATE
L/629/SYS L/DB4/2/7-7/2-0			6,5	00
L/629/SYS L/DFE/2/6-6/2-0	MASTER BRIGHT	OUT	5	1

(ac) On the P61 overhead maintenance panel, set the GND TEST switch to the NORM position and close the guard.

— END OF TASK —

TASK 23-93-00-730-804

5. Panel Data Concentrator Unit - System Test

A. General

- (1) This test has 2 parts. Each part tests one of the Panel Data Concentrator Units (PDCU).
- (2) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808

B. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment, Left

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Zone	Area

212	Flight Compartment, Right

D. Prepare for the Test

SUBTASK 23-93-00-860-009

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-93-00-860-010

- (2) Make sure that GROUND TEST ENABLE switch on the P61 panel is in the ENABLE position.

E. Left PDCU Interface Test

SUBTASK 23-93-00-860-011

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

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	7	C23605	OPAS 3

SUBTASK 23-93-00-730-002

- (2) Do these steps to do the PDCU interface test with the Cursor Control Device (CCD):
 - (a) Push the L INBD button on the Display Selector Panel (DSP).
 - (b) Push the Line Select Key (LSK) adjacent to MAINT INFO DISPLY> on a CDU.
 - (c) Push the LWR CTR button on the DSP.
 - (d) Push the LSK adjacent to MAINT INFO DISPLY> on a CDU.
 - (e) Push the R INBD button on the DSP.
 - (f) Push the Line Select Key (LSK) adjacent to MAINT INFO DISPLY> on a CDU.
 - (g) Make sure that the Maintenance Page menu is shown on the Left Inboard (LIB), Lower Center (LC), and Right Inboard (RIB) Display Units (DU).
 - (h) Push the INBD button on the Capt's CCD.
 - (i) Make sure the annunciator light on the Capt's CCD is on.
 - (j) Make sure that the annunciator lights for the SIDE and LWR CTR buttons are off.
 - (k) Push the INBD button on the F/O's CCD.
 - (l) Make sure the annunciator light on the F/O's CCD is on.
 - (m) Make sure that the annunciator lights for the SIDE and LWR CTR buttons are off.
 - (n) Push the LWR CTR Button on the Capt's CCD.
 - (o) Make sure that the annunciator light on the Capt's CCD is on.
 - (p) Make sure that the annunciator lights for the SIDE and INBD buttons are off.
 - (q) Push the LWR CTR Button on the F/O's CCD.
 - (r) Make sure that the annunciator light on the F/O's CCD is on.
 - (s) Make sure that the annunciator lights for the SIDE and INBD buttons are off.

SUBTASK 23-93-00-730-003

- (3) Do these steps to do the left PDCU interface test with the Display Select Panel (DSP):
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE

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- 2) OTHER FUNCTIONS
 - 3) SPECIAL FUNCTIONS
 - 4) 31 AIMS - Display System
 - 5) SYSTEM TEST
 - 6) Display Switches
 - 7) CONTINUE
- (b) Do the instructions that show on the MAT and then make these selections:
- 1) CONTINUE
 - 2) START TEST
- (c) Make sure that the Control Panel Test Format shows on the LIB, LC and RIB DUs.
NOTE: This format shows a representation of the DSP as well as the headings and status for each control switches used by the Primary Display System.
- (d) Push and hold the L INBD button on the DSP.
- (e) Make sure the applicable button is shown on a DU while you push the button.
NOTE: There will be a small delay between when the button is pushed and the response on the DU.
- (f) Push and hold the LWR CTR button on the DSP.
- (g) Make sure the applicable button is shown on a DU while you push the button.
- (h) Push and hold the R INBD button on the DSP.
- (i) Make sure the applicable button is shown on a DU while you push the button.
- (j) Push and hold these buttons on the DSP one at a time:
- 1) ENG
 - 2) STAT
 - 3) ELEC
 - 4) FUEL
 - 5) AIR
 - 6) FCTL
 - 7) HYD
 - 8) DOOR
 - 9) GEAR
 - 10) CHKL
 - 11) COMM
 - 12) NAV
 - 13) CANC/RCL
- (k) Make sure the applicable button is shown on a DU while you push the button for each one.
- (l) Select COMPLETE TEST on the MAT.
- (m) Select CONTINUE on the MAT

SUBTASK 23-93-00-730-004

- (4) Do these steps to do the PDCU Display Control interface test:

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- (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) OTHER FUNCTIONS
 - 3) SPECIAL FUNCTIONS
 - 4) 31 AIMS - Display System
 - 5) SYSTEM TEST
 - 6) Display Switches
 - 7) CONTINUE
- (b) Do the instructions that show on the MAT and then make these selections:
 - 1) CONTINUE
 - 2) START TEST
- (c) Make sure that the Control Panel Test Format shows on the LIB, CU and RIB DUs.
NOTE: This format shows a representation of the DSP as well as the headings and status for each control switches used by the Primary Display System.
- (d) Put the left DSPL CTRL button on the DSP in the latched/in position.
 - 1) Make sure the status shown below the applicable DSPL CTRL heading on a DU is ALTN.
- (e) Put the left DSPL CTRL button on the DSP in the unlatched/out position.
 - 1) Make sure the status shown below the applicable DSPL CTRL heading on a DU is AUTO.
- (f) Put the center DSPL CTRL button on the DSP in the latched/in position.
 - 1) Make sure the status shown below the applicable DSPL CTRL heading on a DU is ALTN.
- (g) Put the center DSPL CTRL button on the DSP in the unlatched/out position.
 - 1) Make sure the status shown below the applicable DSPL CTRL heading on a DU is AUTO.
- (h) Put the right DSPL CTRL button on the DSP in the latched/in position.
 - 1) Make sure the status shown below the applicable DSPL CTRL heading on a DU is ALTN.
- (i) Put the right DSPL CTRL button on the DSP in the OFF position.
 - 1) Make sure the status shown below the applicable DSPL CTRL heading on a DU is AUTO.
- (j) Turn the left INBOARD DSPL switch to each position.
 - 1) Make sure that status shown below the INBOARD DSPL heading is correct for each switch position.
- (k) Turn the right INBOARD DSPL switch to each position.
 - 1) Make sure that status shown below the INBOARD DSPL heading is correct for each switch position.
- (l) Put the left NAV switch in the latched/in position.
 - 1) Make sure that status shown below the NAV heading on a DU is CDU.
- (m) Put the left NAV switch in the unlatched/out position.

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- 1) Make sure that status shown below the NAV heading on a DU is AUTO.
- (n) Put the right NAV switch in the latched/in position.
 - 1) Make sure that status shown below the NAV heading on a DU is CDU.
- (o) Put the right NAV switch in the unlatched/out position.
 - 1) Make sure that status shown below the NAV heading on a DU is AUTO.
- (p) Put the left AIR DATA/ATT switch in the latched/in position.
 - 1) Make sure that status shown below the NAV heading on a DU is ALTN.
- (q) Put the left AIR DATA/ATT switch in the unlatched/out position.
 - 1) Make sure that status shown below the NAV heading on a DU is AUTO.
- (r) Put the right AIR DATA/ATT switch in the latched/in position.
 - 1) Make sure that status shown below the NAV heading on a DU is ALTN.
- (s) Put the right AIR DATA/ATT switch in the unlatched/out position.
 - 1) Make sure that status shown below the NAV heading on a DU is AUTO.
- (t) Push and hold each of these switches, one at a time:
 - 1) left ACPT (glareshield)
 - 2) left RJCT (glareshield)
 - 3) left CANC (glareshield)
 - 4) right ACPT (glareshield)
 - 5) right RJCT (glareshield)
 - 6) right CANC (glareshield)
 - 7) EVENT RCD (below LC DU)
- (u) Make sure the applicable button is shown on a DU while you push the button.

NOTE: There will be a small delay between when the button is pushed and the response on the DU.
- (v) Put the HDG REF switch in the ON position.
- (w) Make sure that status shown below the HDG REF heading on a DU is NORM.
- (x) Make sure the HDG REF switch shows NORM.
- (y) Put the HDG REF switch in the OFF position.
- (z) Make sure that status shown below the HDG REF heading on a DU is TRUE.
- (aa) Make sure the HDG REF switch shows TRUE.
- (ab) Select COMPLETE TEST on the MAT.
- (ac) Select CONTINUE on the MAT.

SUBTASK 23-93-00-860-012

- (5) Remove the safety tag and close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C23605	OPAS 3

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F. Right PDCU Interface Test

SUBTASK 23-93-00-860-013

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

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	C23603	OPAS 1

SUBTASK 23-93-00-730-005

- (2) Do the left PDCU test to do a test of the right PDCU.

SUBTASK 23-93-00-860-014

- (3) Remove the safety tag and close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	C23603	OPAS 1

G. Put the Airplane Back to Its Usual Condition

SUBTASK 23-93-00-860-015

- (1) On the P61 overhead maintenance panel, set the GND TEST switch to the NORM position and close the guard.

————— **END OF TASK** —————

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OVERHEAD PANEL BUS CONTROLLER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) The removal of the left Overhead Panel Bus Controller (OPBC).
- (2) The installation of the left OPBC.
- (3) The removal of the right OPBC.
- (4) The installation of the right OPBC.

TASK 23-93-01-000-801

2. Left Overhead Panel Bus Controller (OPBC) Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
20-41-01-000-803	ESDS Handling for Metal Encased Unit Removal (P/B 201)

B. **Location Zones**

Zone	Area
211	Flight Compartment, Left

C. **Removal Procedure**

SUBTASK 23-93-01-860-001



CAUTION

DO NOT USE THE APU FOR POWER WHEN THE L AND R OPAS CIRCUIT BREAKERS ARE OPEN AT THE SAME TIME. IN THIS CONDITION, THE APU BLEED VALVE AND THE ISOLATION VALVES CAN OPEN. THIS CAN CAUSE THE DUCT PRESSURE TO INCREASE. HIGH PRESSURE CAN CAUSE DAMAGE TO THE AIR CONDITIONING EQUIPMENT.

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

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	C23603	OPAS 1

SUBTASK 23-93-01-910-001



CAUTION

DO NOT TOUCH THE OPBC BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OPBC.

- (2) Before you touch the OPBC [6], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-41-01-000-803.

SUBTASK 23-93-01-020-001

- (3) Do these steps to remove the OPBC [6]:
 - (a) Loosen the captive screws [5] that hold the access panel [2] in its position.
 - (b) Remove the access panel [2].
 - (c) Disconnect the electrical connectors [1] from the OPBC [6].

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- (d) Put protective covers on all electrical connectors.
- (e) Remove the ground strap [9], washer [8], and nut [7] from the OPBC [6].
- (f) Loosen the captive screws [5] that hold the mounting plate [3] in its position.
- (g) Pull the mounting plate [3] and OPBC [6] from the wall.
- (h) Loosen the captive screws [4] that hold the OPBC [6] to the mounting plate [3].
- (i) Remove the mounting plate [3] from the OPBC [6].

———— **END OF TASK** ————

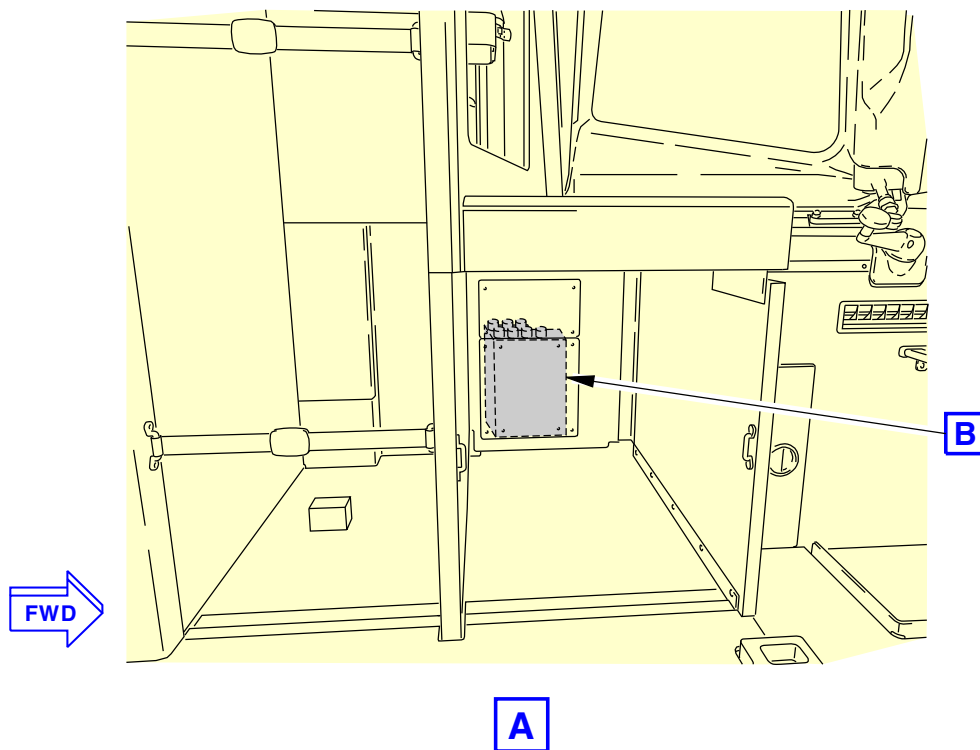
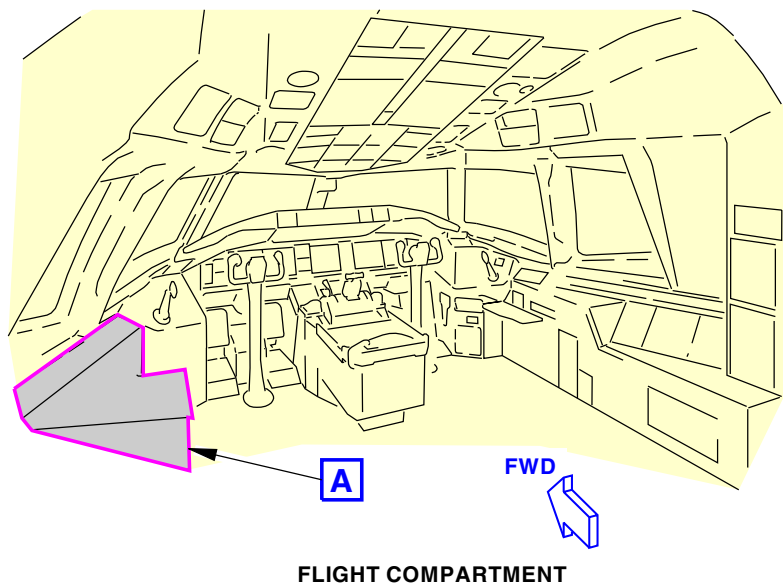
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C65850 S0006407655_V2

Left Overhead Panel Bus Controller Installation
Figure 401/23-93-01-990-801 (Sheet 1 of 2)

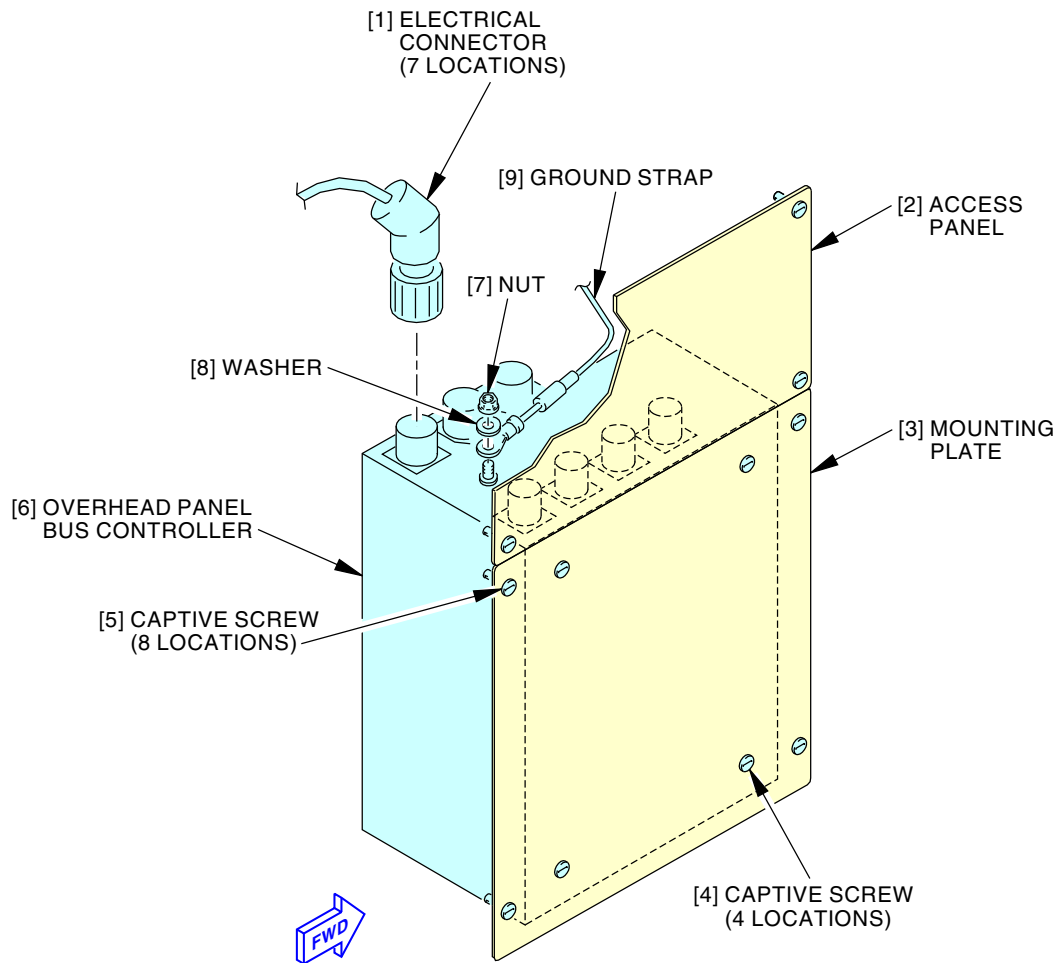
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LEFT OVERHEAD PANEL BUS CONTROLLER

B

C65860 S0006407656_V2

Left Overhead Panel Bus Controller Installation
Figure 401/23-93-01-990-801 (Sheet 2 of 2)

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TASK 23-93-01-400-801

3. Left Overhead Panel Bus Controller (OPBC) Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) A maintenance access terminal is necessary for this installation test. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
20-41-01-400-803	ESDS Handling for Metal Encased Unit Installation (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Panel	23-93-01-01-005	ARO ALL
		23-93-01-01-240	ARO ALL
3	Plate	23-93-01-01-025	ARO ALL
		23-93-01-01-260	ARO ALL
6	OPBC	23-93-01-01-075	ARO ALL
		23-93-01-01-295	ARO ALL
9	Ground strap	23-93-01-01-065	ARO ALL
		23-93-01-01-070	ARO ALL
		23-93-01-01-210	ARO ALL

E. Location Zones

Zone	Area
211	Flight Compartment, Left

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F. Installation Procedure

SUBTASK 23-93-01-860-002



DO NOT USE THE APU FOR POWER WHEN THE L AND R OPAS CIRCUIT BREAKERS ARE OPEN AT THE SAME TIME. IN THIS CONDITION, THE APU BLEED VALVE AND THE ISOLATION VALVES CAN OPEN. THIS CAN CAUSE THE DUCT PRESSURE TO INCREASE. HIGH PRESSURE CAN CAUSE DAMAGE TO THE AIR CONDITIONING EQUIPMENT.

- (1) Make sure that this circuit breaker is open and has safety tag:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	C23603	OPAS 1

SUBTASK 23-93-01-910-002



DO NOT TOUCH THE OPBC BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OPBC.

- (2) Before you touch the OPBC [6], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-41-01-400-803.

SUBTASK 23-93-01-420-001

- (3) Do these steps to install the OPBC [6]:
 - (a) Tighten the captive screws [4] that attach the OPBC [6] to the mounting plate [3].
 - (b) Remove the protective covers from the electrical connectors.
 - (c) Examine the electrical connectors for bent or broken pins, dirt, and damage.
 - (d) Connect the electrical connectors [1] to the OPBC [6].
 - (e) Put the mounting plate [3] and the OPBC [6] in its position.
 - (f) Tighten the captive screws [5] that attach the mounting plate [3].
 - (g) Attach the ground strap [9], washer [8], and nut [7] to the OPBC [6].
 - (h) Put the access panel [2] in its position.
 - (i) Tighten the captive screws [5] that attach the access panel [2].
 - (j) With the intrinsically safe approved bonding meter, COM-1550, make sure the resistance is less than 0.0025 ohms.

SUBTASK 23-93-01-860-003

- (4) Remove the safety tag and close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	C23603	OPAS 1

G. Installation Test

SUBTASK 23-93-01-860-004

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-93-01-860-005

- (2) Make sure that the GROUND TEST ENABLE switch on the P61 panel is in the ENABLE position.

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SUBTASK 23-93-01-730-001

- (3) Use a maintenance access terminal (MAT) to do the left OPAS system test:
- (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 Overhead Panel ARINC 629 System
 - 5) SYSTEM TEST
 - 6) Left Overhead Panel ARINC 629 System
 - 7) CONTINUE
 - (b) Do the instructions that show on the MAT and then make these selections:
 - 1) CONTINUE
 - 2) START TEST
 - (c) When the test is completed (approximately 3 minutes), make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
 - (d) To put the MAT back to its initial condition, make these selections:
 - 1) LINE MAINTENANCE
 - 2) EXIT MAINTENANCE
 - (e) Make sure that these status messages are not shown on the MAT:
NOTE: These messages are shown on the STATUS page of the MFD.
 - 1) OPBC R
 - 2) OPIC LA1
 - 3) OPIC LA2
 - 4) OPIC RA1
 - 5) OPIC RA2
 - 6) PDCU L
 - 7) PDCU R

SUBTASK 23-93-01-860-012

- (4) On the P61 overhead maintenance panel, set the GND TEST switch to the NORM position and close the guard.

————— END OF TASK —————

TASK 23-93-01-000-802

4. Right Overhead Panel Bus Controller (OPBC) Removal

(Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
20-41-01-000-803	ESDS Handling for Metal Encased Unit Removal (P/B 201)

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B. Location Zones

Zone	Area
212	Flight Compartment, Right

C. Removal Procedure

SUBTASK 23-93-01-860-007



DO NOT USE THE APU FOR POWER WHEN THE L AND R OPAS CIRCUIT BREAKERS ARE OPEN AT THE SAME TIME. IN THIS CONDITION, THE APU BLEED VALVE AND THE ISOLATION VALVES CAN OPEN. THIS CAN CAUSE THE DUCT PRESSURE TO INCREASE. HIGH PRESSURE CAN CAUSE DAMAGE TO THE AIR CONDITIONING EQUIPMENT.

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

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
G	20	C23602	OPAS 2

SUBTASK 23-93-01-910-003



DO NOT TOUCH THE OPBC BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OPBC.

- (2) Before you touch the OPBC [6], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-41-01-000-803.

SUBTASK 23-93-01-020-002

- (3) Do these steps to remove the OPBC [6]:
- (a) Loosen the captive screws [22] that hold the access panel [28] in its position.
 - (b) Pull the access panel [28] from its position.
 - (c) Remove the ground strap [9], washer [8], and nut [7] from the OPBC [6].
 - (d) Disconnect the electrical connectors [24] from the OPBC [6].
 - (e) Loosen the captive screws [22] that hold the mounting plate [23] [23] in its position.
 - (f) Remove the mounting plate [23] and the OPBC [6].
 - (g) Loosen the captive screws [21] that hold the OPBC [6] to the mounting plate [23].
 - (h) Remove the mounting plate [23] from the OPBC [6].
 - (i) Put protective covers on all electrical connectors.

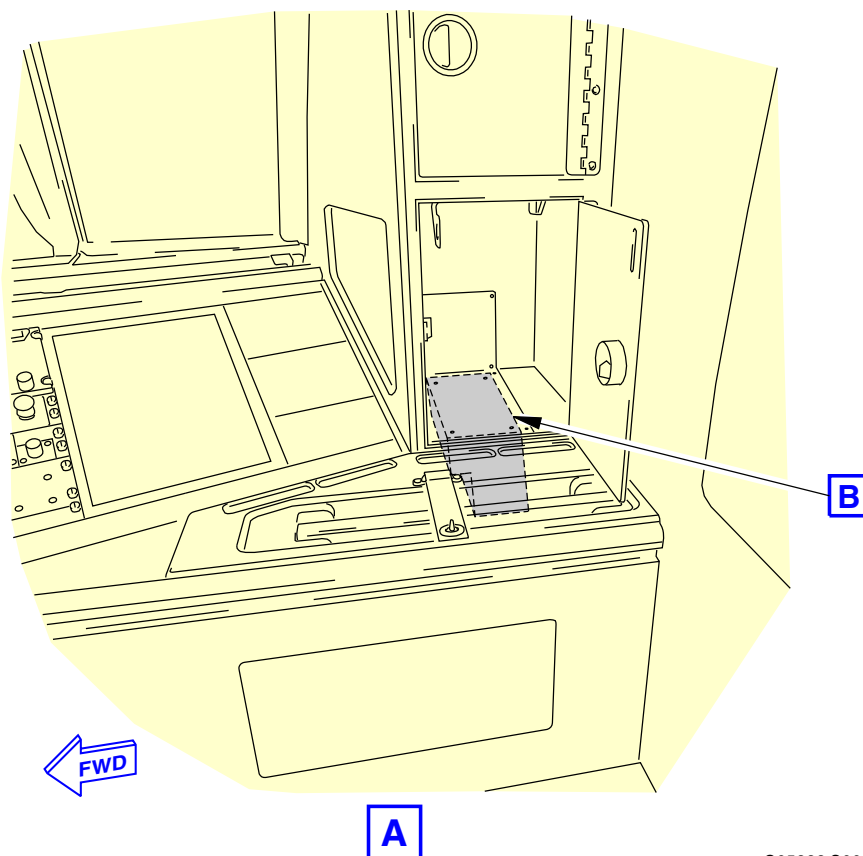
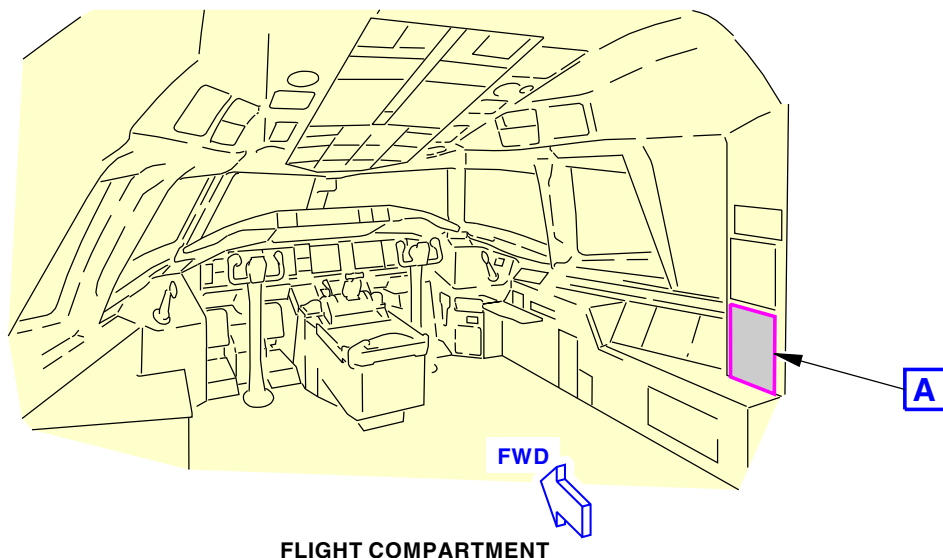
————— END OF TASK —————

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ARO ALL

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C65888 S0006407659_V2

Right Overhead Panel Bus Controller Installation
Figure 402/23-93-01-990-802 (Sheet 1 of 2)

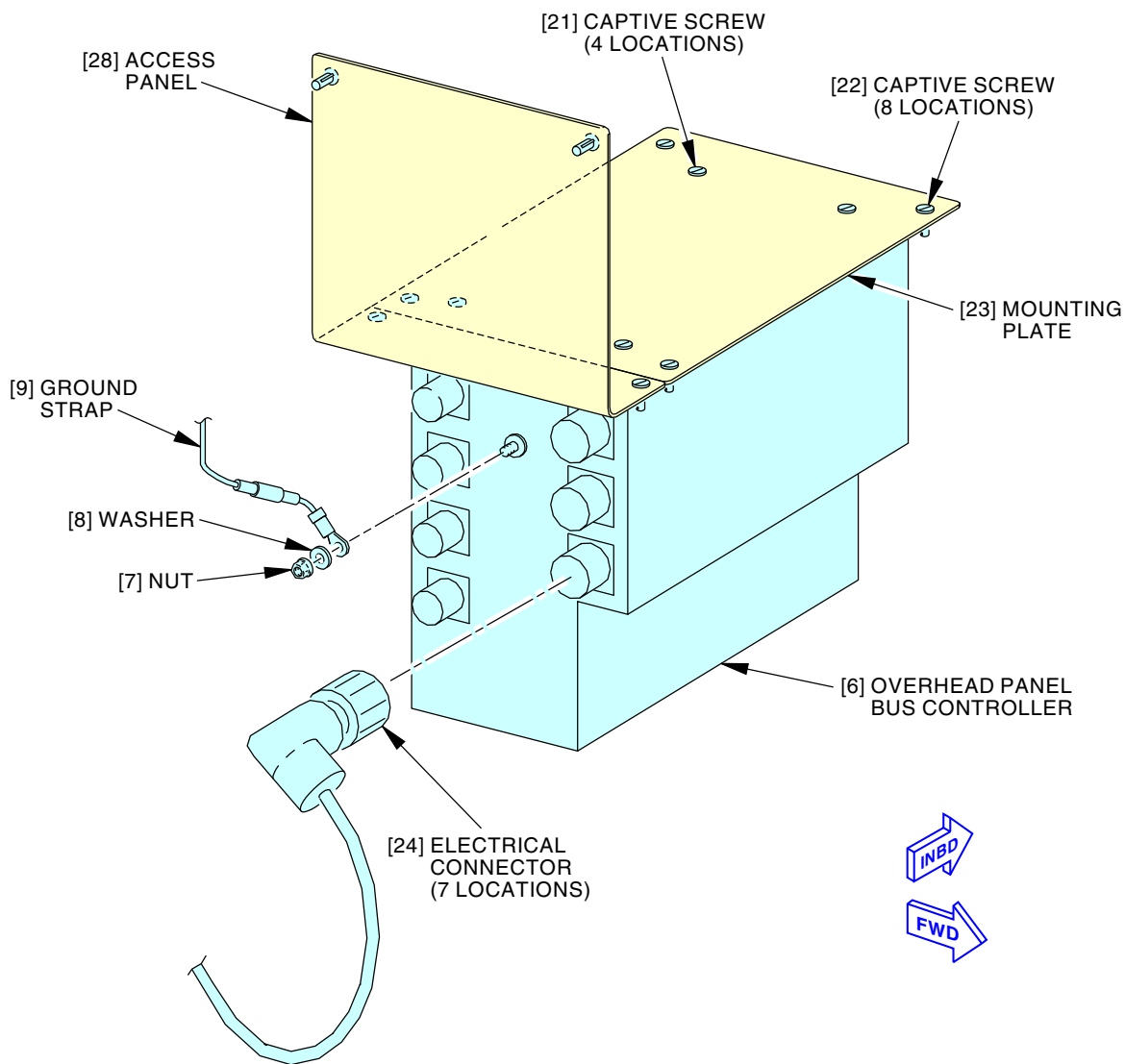
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RIGHT OVERHEAD PANEL BUS CONTROLLER

B

C65893 S0006407660_V2

Right Overhead Panel Bus Controller Installation
Figure 402/23-93-01-990-802 (Sheet 2 of 2)

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TASK 23-93-01-400-802

5. Right Overhead Panel Bus Controller (OPBC) Installation

(Figure 402)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
20-41-01-400-803	ESDS Handling for Metal Encased Unit Installation (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
6	OPBC	23-93-01-01-075	ARO ALL
		23-93-01-01-295	ARO ALL
23	Plate	23-93-01-01-260	ARO ALL
28	Panel	23-93-01-01-240	ARO ALL

D. Location Zones

Zone	Area
212	Flight Compartment, Right

E. Installation Procedure

SUBTASK 23-93-01-860-008

 CAUTION	DO NOT USE THE APU FOR POWER WHEN THE L AND R OPAS CIRCUIT BREAKERS ARE OPEN AT THE SAME TIME. IN THIS CONDITION, THE APU BLEED VALVE AND THE ISOLATION VALVES CAN OPEN. THIS CAN CAUSE THE DUCT PRESSURE TO INCREASE. HIGH PRESSURE CAN CAUSE DAMAGE TO THE AIR CONDITIONING EQUIPMENT.

(1) Make sure that this circuit breaker is open and has safety tag:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
G	20	C23602	OPAS 2

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SUBTASK 23-93-01-910-004



DO NOT TOUCH THE OPBC BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OPBC.

- (2) Before you touch the OPBC [6], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-41-01-400-803.

SUBTASK 23-93-01-420-002

- (3) Do these steps to install the OPBC [6]:
- (a) Tighten the captive screws [21] that attach the OPBC [6] to the mounting plate [23].
 - (b) Remove the protective covers from the electrical connectors.
 - (c) Examine the electrical connectors for bent or broken pins, dirt, and damage.
 - (d) Connect the electrical connectors [24] to the OPBC [6].
 - (e) Put the mounting plate [23] and the OPBC [6] in its position.
 - (f) Tighten the captive screws [22] that attach the mounting plate [23].
 - (g) Attach the ground strap [9], washer [8], and nut [7] to the OPBC [6].
 - (h) Put the access panel [28] in its position.
 - (i) Tighten the captive screws [22] that attach the access panel [28].
 - (j) With the intrinsically safe approved bonding meter, COM-1550, make sure the resistance is less than 0.0025 ohms.

SUBTASK 23-93-01-860-009

- (4) Remove the safety tag and close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	C23602	OPAS 2

F. Installation Test

SUBTASK 23-93-01-730-002

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-93-01-860-010

- (2) Make sure that the GROUND TEST ENABLE switch on the P61 panel is in the ENABLE position.

SUBTASK 23-93-01-730-003

- (3) Use a maintenance access terminal (MAT) to do the OPAS system test:
- (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 Overhead Panel ARINC 629 System
 - 5) SYSTEM TEST
 - 6) Right Overhead Panel ARINC 629 System
 - 7) CONTINUE

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- (b) Do the instructions that show on the MAT and then make these selections:
 - 1) CONTINUE
 - 2) START TEST
- (c) When the test is completed (approximately 2 minutes), make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
NOTE: If the MAT shows OPERATING after 2 minutes, select STOP TEST and do the corrective action for the maintenance message shown.
- (d) To put the MAT back to its initial condition, make these selections:
 - 1) LINE MAINTENANCE
 - 2) EXIT MAINTENANCE
- (e) Make sure that these status messages are not shown on the MAT:
 - 1) OPBC R
 - 2) OPIC LA1
 - 3) OPIC LA2
 - 4) OPIC RA1
 - 5) OPIC RA2
 - 6) PDCU L
 - 7) PDCU R

SUBTASK 23-93-01-860-013

- (4) On the P61 overhead maintenance panel, set the GND TEST switch to the NORM position and close the guard.

————— **END OF TASK** —————

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OVERHEAD PANEL CARD FILE - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

- (1) The removal of an overhead panel interface card (OPIC) from an overhead panel card file (OPCF)
- (2) The installation of an OPIC in an OPCF
- (3) The removal of an OPCF
- (4) The installation of an OPCF.

B. There are two OPICs in each OPCF. The removal and installation is the same for each one. The OPIC for the left system is installed in slot A1 of each OPCF. The OPIC for the right system is in slot A2. There are two OPCFs installed in the overhead maintenance panel.

TASK 23-93-02-000-801

2. Overhead Panel Interface Card (OPIC) Removal

(Figure 201)

NOTE: This procedure is a scheduled maintenance task.

A. **References**

Reference	Title
20-41-01-000-801	ESDS Handling for Printed Circuit Board Removal (P/B 201)

B. **Location Zones**

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

C. **Removal Procedure**

SUBTASK 23-93-02-860-001



CAUTION

DO NOT USE THE APU FOR POWER WHEN THE L AND R OPAS CIRCUIT BREAKERS ARE OPEN AT THE SAME TIME. IN THIS CONDITION, THE APU BLEED VALVE AND THE ISOLATION VALVES CAN OPEN. THIS CAN CAUSE THE DUCT PRESSURE TO INCREASE. HIGH PRESSURE CAN CAUSE DAMAGE TO THE AIR CONDITIONING EQUIPMENT.

(1) For an A1 OPIC [7]:

Open this circuit breaker and install safety tag:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
D	6	C23603	OPAS 1

SUBTASK 23-93-02-860-014



CAUTION

DO NOT USE THE APU FOR POWER WHEN THE L AND R OPAS CIRCUIT BREAKERS ARE OPEN AT THE SAME TIME. IN THIS CONDITION, THE APU BLEED VALVE AND THE ISOLATION VALVES CAN OPEN. THIS CAN CAUSE THE DUCT PRESSURE TO INCREASE. HIGH PRESSURE CAN CAUSE DAMAGE TO THE AIR CONDITIONING EQUIPMENT.

(2) For an A2 OPIC [7]:

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Open this circuit breaker and install safety tag:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	C23602	OPAS 2

SUBTASK 23-93-02-010-001

- (3) Loosen the captive screws [3] and open the overhead panel card file (OPCF) access door.

SUBTASK 23-93-02-940-001



DO NOT TOUCH THE OPIC BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OPIC.

- (4) Before you touch the OPIC [7], do this task: ESDS Handling for Printed Circuit Board Removal, TASK 20-41-01-000-801.

SUBTASK 23-93-02-020-001

- (5) Do these steps to remove an OPIC [7]:
- (a) Turn the OPIC retainer screws [5] to release the OPIC [7].
 - (b) Pull the ejection levers [6] down.
 - (c) Pull the OPIC [7] from the OPCF [8].

SUBTASK 23-93-02-860-002

- (6) Close the OPCF access door and tighten the captive screws [3].

————— **END OF TASK** —————

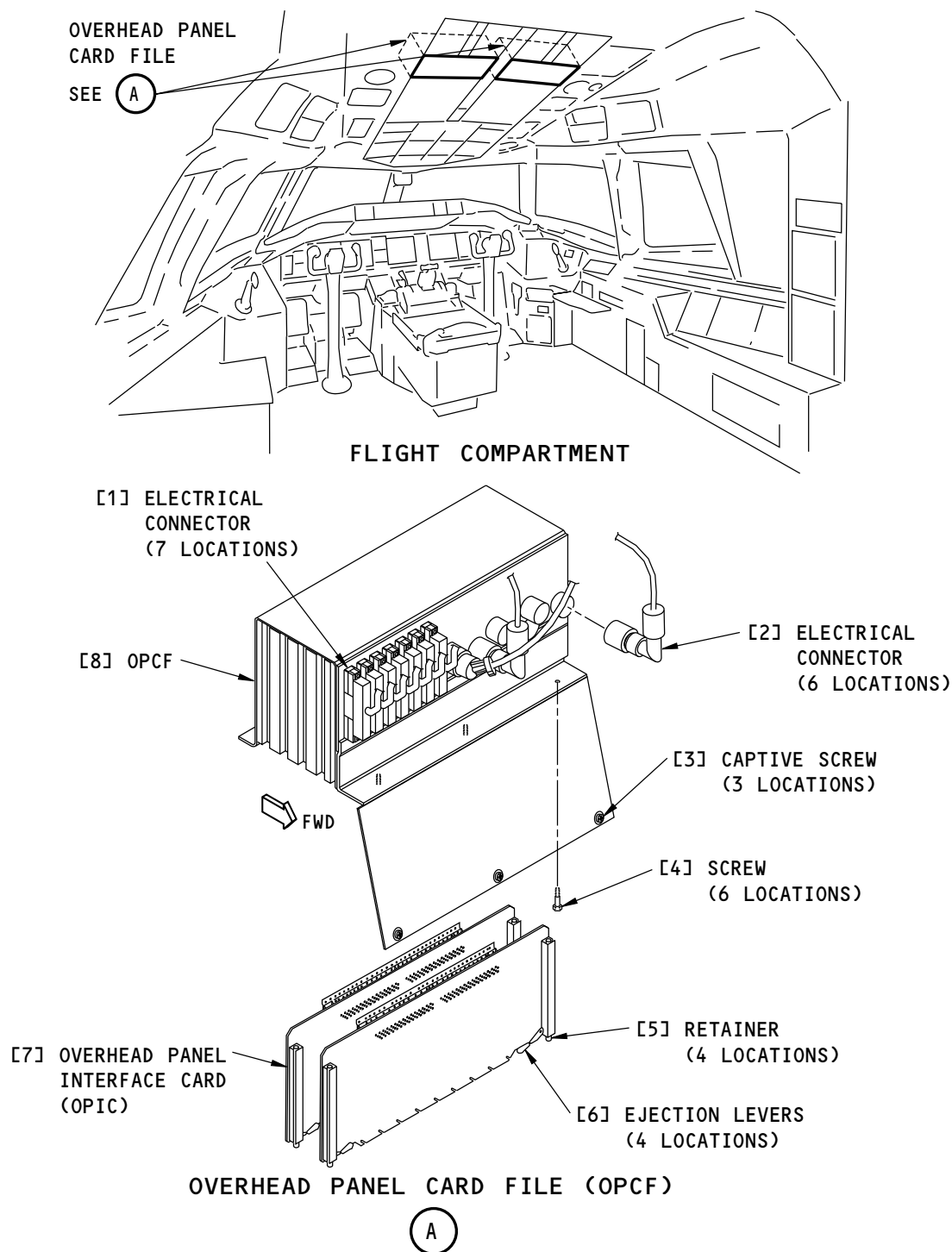
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Overhead Panel Card File Installation
Figure 201/23-93-02-990-801

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TASK 23-93-02-400-801

3. Overhead Panel Interface Card (OPIC) Installation

(Figure 201)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
20-41-01-400-801	ESDS Handling for Printed Circuit Board Installation (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
7	OPIC	11-31-51-15-027	ARO ALL
		23-93-02-01-025	ARO ALL

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Installation Procedure

SUBTASK 23-93-02-860-003

(1) For a left OPIC [7]:



CAUTION

DO NOT USE THE APU FOR POWER WHEN THE L AND R OPAS CIRCUIT BREAKERS ARE OPEN AT THE SAME TIME. IN THIS CONDITION, THE APU BLEED VALVE AND THE ISOLATION VALVES CAN OPEN. THIS CAN CAUSE THE DUCT PRESSURE TO INCREASE. HIGH PRESSURE CAN CAUSE DAMAGE TO THE AIR CONDITIONING EQUIPMENT.

(a) Make sure that this circuit breaker is open and has safety tag:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
D	6	C23603	OPAS 1

SUBTASK 23-93-02-860-015

(2) For a right OPIC [7]:



CAUTION

DO NOT USE THE APU FOR POWER WHEN THE L AND R OPAS CIRCUIT BREAKERS ARE OPEN AT THE SAME TIME. IN THIS CONDITION, THE APU BLEED VALVE AND THE ISOLATION VALVES CAN OPEN. THIS CAN CAUSE THE DUCT PRESSURE TO INCREASE. HIGH PRESSURE CAN CAUSE DAMAGE TO THE AIR CONDITIONING EQUIPMENT.

(a) Make sure that this circuit breaker is open and has safety tag:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
G	20	C23602	OPAS 2

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SUBTASK 23-93-02-010-002

- (3) Loosen the captive screws [3] and open the overhead panel card file (OPCF) access door.

SUBTASK 23-93-02-940-002



DO NOT TOUCH THE OPIC BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OPIC.

- (4) Before you touch the OPIC [7], do this task: ESDS Handling for Printed Circuit Board Installation, TASK 20-41-01-400-801.

NOTE: The ground strap is in a pouch installed in the coat closet.

SUBTASK 23-93-02-420-001

- (5) Do these steps to install the OPIC [7]:
- (a) Put the OPIC [7] into the OPCF [8].
 - (b) Push the ejection levers [6] up.
 - (c) Tighten the retainer screw [5] to 5-6 inch lbs or until you hear or feel at least 3 clicks.

SUBTASK 23-93-02-410-001

- (6) Close the OPCF access door and tighten the captive screws [3].

SUBTASK 23-93-02-860-004

- (7) For a left OPIC [7]:
- (a) Remove the safety tag and close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	C23603	OPAS 1

SUBTASK 23-93-02-860-016

- (8) For a right OPIC [7]:
- (a) Remove the safety tag and close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	C23602	OPAS 2

E. Installation Test

SUBTASK 23-93-02-860-005

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-93-02-860-006

- (2) Make sure that the GROUND TEST ENABLE switch on the P61 panel is in the ENABLE position.

SUBTASK 23-93-02-730-001

- (3) Use a maintenance access terminal (MAT) to do the left OPAS system test:
- (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS

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- 4) 23 Overhead Panel ARINC 629 System
- 5) SYSTEM TEST
- 6) For an A1 OPIC [7]:
Left Overhead Panel ARINC 629 System
- 7) For an A2 OPIC [7]:
Right Overhead Panel ARINC 629 System
- 8) CONTINUE
- 9) START TEST
- (b) When the test is completed (approximately 2 minutes), make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
NOTE: If the MAT shows OPERATING after 2 minutes, select STOP TEST and do the corrective action for the maintenance message shown.
- (c) To put the MAT back to its initial condition, make these selections:
 - 1) LINE MAINTENANCE
 - 2) EXIT MAINTENANCE
- (d) For the LA1 OPIC [7]:
Make sure that these status messages are not shown:
 - 1) OPBC L
 - 2) OPIC LA1
- (e) For the LA2 OPIC [7]:
Make sure that these status messages are not shown:
 - 1) OPBC R
 - 2) OPIC LA2
- (f) For the RA1 OPIC [7]:
Make sure that these status messages are not shown:
 - 1) OPBC L
 - 2) OPIC RA1
- (g) For the RA2 OPIC [7]:
Make sure that these status messages are not shown:
 - 1) OPBC R
 - 2) OPIC RA2

SUBTASK 23-93-02-860-017

- (4) On the P61 overhead maintenance panel, set the GND TEST switch to the NORM position and close the guard.

————— **END OF TASK** —————

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TASK 23-93-02-000-802

4. Overhead Panel Card File (OPCF) Removal

(Figure 201)

A. References

Reference	Title
20-41-01-000-803	ESDS Handling for Metal Encased Unit Removal (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

C. Removal Procedure

SUBTASK 23-93-02-860-008



CAUTION DO NOT USE THE APU FOR POWER WHEN THE L AND R OPAS CIRCUIT BREAKERS ARE OPEN AT THE SAME TIME. IN THIS CONDITION, THE APU BLEED VALVE AND THE ISOLATION VALVES CAN OPEN. THIS CAN CAUSE THE DUCT PRESSURE TO INCREASE. HIGH PRESSURE CAN CAUSE DAMAGE TO THE AIR CONDITIONING EQUIPMENT.

- (1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
D	6	C23603	OPAS 1
G	20	C23602	OPAS 2

SUBTASK 23-93-02-910-001



CAUTION DO NOT TOUCH THE OPCF BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OPCF.

- (2) Before you touch the OPCF [8], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-41-01-000-803.

NOTE: The ground strap is in a pouch installed in the coat closet.

SUBTASK 23-93-02-010-003

- (3) Loosen the captive screws in the P11 panel forward of the applicable OPCF [8].

SUBTASK 23-93-02-010-004

- (4) Push the button between the screws and open the P11 panel.

SUBTASK 23-93-02-020-002

- (5) Do these steps to remove the OPCF [8]:
 - (a) Remove the electrical connectors [1,2] from the OPCF [8].
 - (b) Loosen the captive screws [3] and open the OPCF door.
 - (c) Remove the screws [4] that hold the OPCF [8] in its position.
 - (d) Remove the OPCF [8].
 - (e) Put protective covers on the electrical connectors.

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SUBTASK 23-93-02-410-002

- (6) Close the P11 panel.

————— END OF TASK —————

TASK 23-93-02-400-802

5. Overhead Panel Card File (OPCF) Installation

(Figure 201)

A. References

Reference	Title
20-41-01-400-801	ESDS Handling for Printed Circuit Board Installation (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
8	OPCF	25-10-51-05-015	ARO ALL

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Installation Procedure

SUBTASK 23-93-02-860-009



DO NOT USE THE APU FOR POWER WHEN THE L AND R OPAS CIRCUIT BREAKERS ARE OPEN AT THE SAME TIME. IN THIS CONDITION, THE APU BLEED VALVE AND THE ISOLATION VALVES CAN OPEN. THIS CAN CAUSE THE DUCT PRESSURE TO INCREASE. HIGH PRESSURE CAN CAUSE DAMAGE TO THE AIR CONDITIONING EQUIPMENT.

- (1) Make sure that these circuit breakers are open and have safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
D	6	C23603	OPAS 1
G	20	C23602	OPAS 2

SUBTASK 23-93-02-910-002



DO NOT TOUCH THE OPCF BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE OPCF.

- (2) Before you touch the OPCF [8], do this task: ESDS Handling for Printed Circuit Board Installation, TASK 20-41-01-400-801.

SUBTASK 23-93-02-010-005

- (3) Do these steps to get access to the OPCF connectors:
- (a) Loosen the captive screws in the P11 panel forward of the OPCF [8] you will remove.
 - (b) Push the button between the screws and open the P11 panel.

SUBTASK 23-93-02-400-001

- (4) Do these steps to install the OPCF [8]:

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- (a) Put the OPCF [8] in its position and tighten the screws [4].
- (b) Remove the protective covers from the electrical connectors.
- (c) Examine the electrical connectors for bent or broken pins, dirt, and damage.
- (d) Connect the electrical connectors [1,2] to the OPCF [8].

SUBTASK 23-93-02-410-003

- (5) Close the OPCF door and tighten the captive screws [3].

SUBTASK 23-93-02-410-004

- (6) Close the P11 panel.

SUBTASK 23-93-02-860-010

- (7) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	C23603	OPAS 1
G	20	C23602	OPAS 2

E. Installation Test

SUBTASK 23-93-02-860-011

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-93-02-860-012

- (2) Make sure that the GROUND TEST ENABLE switch on the P61 panel is in the ENABLE position.

SUBTASK 23-93-02-730-002

- (3) Use a maintenance access terminal (MAT) to do the OPAS system test:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 Overhead Panel ARINC 629 System
 - 5) SYSTEM TEST
 - 6) Left Overhead Panel ARINC 629 System
 - 7) CONTINUE
 - 8) START TEST
 - (b) When the test is completed (approximately 2 minutes), make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
NOTE: If the MAT shows OPERATING after 2 minutes, select STOP TEST and do the corrective action for the maintenance message shown.
 - (c) Make these selections on the MAT:
 - 1) NEW TEST
 - 2) 23 Overhead Panel ARINC 629 System
 - 3) SYSTEM TEST
 - 4) Right Overhead Panel ARINC 629 System
 - 5) CONTINUE

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6) START TEST

- (d) When the test is completed (approximately 2 minutes), make sure that PASSED shows adjacent to TEST CONDITION on the MAT.

NOTE: If the MAT shows OPERATING after 2 minutes, select STOP TEST and do the corrective action for the maintenance message shown.

- (e) To put the MAT back to its initial condition, make these selections:

- 1) LINE MAINTENANCE
- 2) EXIT MAINTENANCE

SUBTASK 23-93-02-860-018

- (4) On the P61 overhead maintenance panel, set the GND TEST switch to the NORM position and close the guard.

————— **END OF TASK** —————

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PANEL DATA CONCENTRATOR UNIT (PDCU) - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) The removal of a panel data concentrator unit (PDCU)
- (2) The installation of a PDCU.

B. There are two PDCUs installed in the airplane. The left PDCU is below the captain's forward panel and the right PDCU is below the first officer's forward panel.

TASK 23-93-03-000-801

2. Panel Data Concentrator Unit (PDCU) Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. Location Zones

<u>Zone</u>	<u>Area</u>
211	Flight Compartment, Left
212	Flight Compartment, Right

B. Removal Procedure

SUBTASK 23-93-03-860-001

- (1) For the left PDCU;

Open this circuit breaker and install safety tag:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	C23603	OPAS 1

SUBTASK 23-93-03-860-002

- (2) For the right PDCU;

Open this circuit breaker and install safety tag:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C23605	OPAS 3

SUBTASK 23-93-03-020-001

- (3) Do these steps to remove a PDCU [4]:

- (a) Loosen the captive screws [3] that hold the PDCU [4] in its position.
- (b) Turn the aft end down to clear the cowl.
- (c) Move the PDCU [4] aft until the PDCU pins [1] come out of the slots.
- (d) Disconnect the electrical connectors [2] from the PDCU [4].
- (e) Put protective covers on the electrical connectors.

———— **END OF TASK** ————

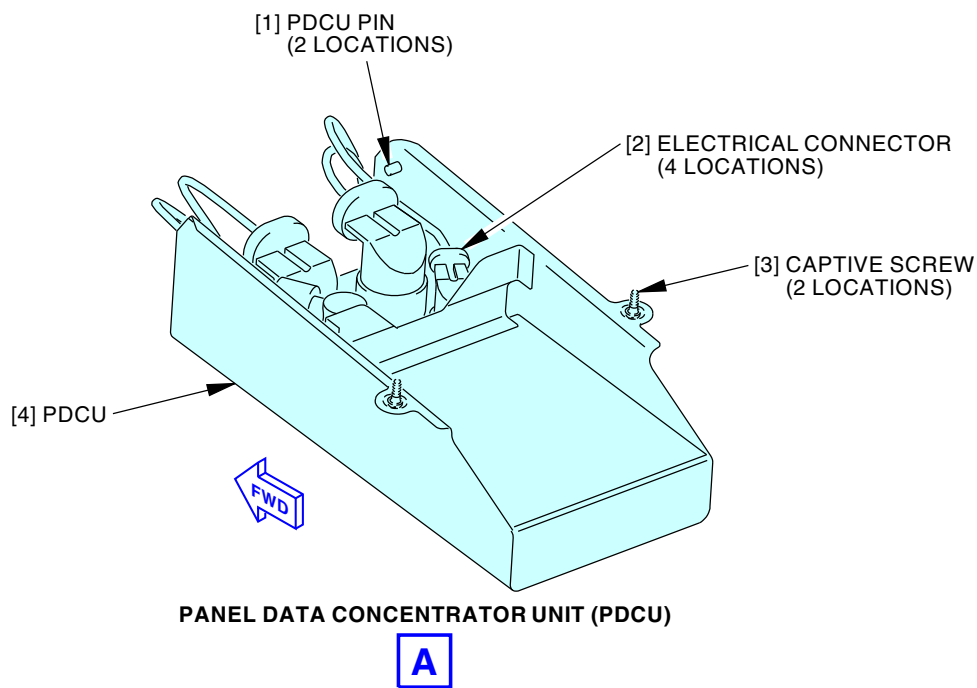
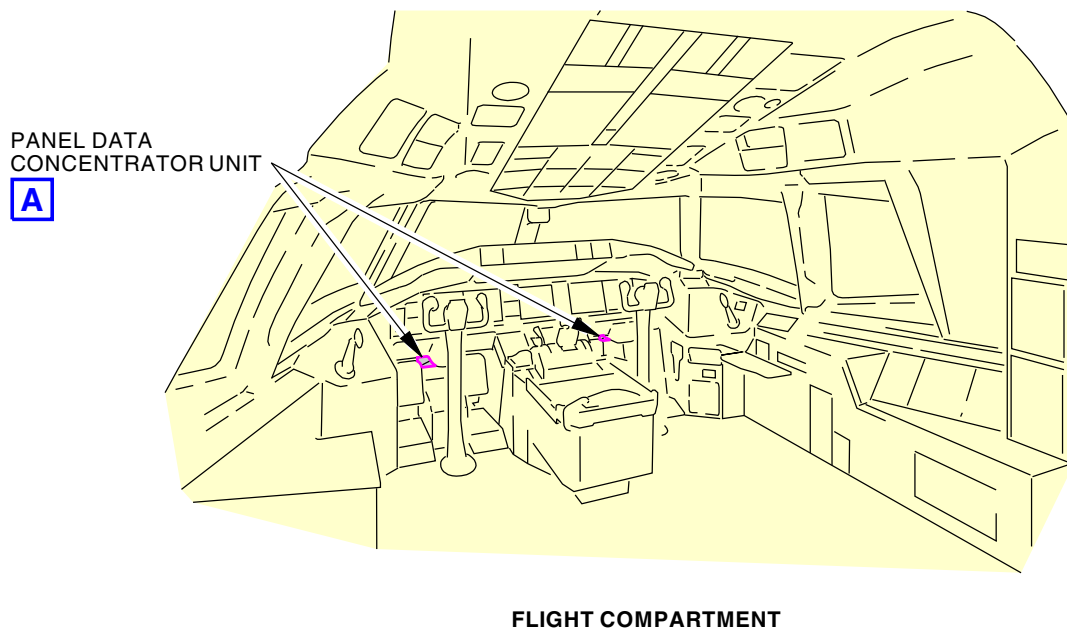
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Panel Data Concentrator Unit Installation
Figure 401/23-93-03-990-801

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TASK 23-93-03-400-801

3. Panel Data Concentrator Unit (PDCU) Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
24-22-00-860-805	Supply Electrical Power (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	PDCU	23-93-03-01-005	ARO ALL

D. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

E. Installation Procedure

SUBTASK 23-93-03-860-003

- (1) For the left PDCU [4], do this step,
- (a) Make sure that this circuit breaker is open and has safety tag:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
D	6	C23603	OPAS 1

SUBTASK 23-93-03-860-004

- (2) For the right PDCU [4], do this step,
- (a) Make sure that this circuit breaker is open and has safety tag:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	7	C23605	OPAS 3

SUBTASK 23-93-03-420-001

- (3) Do these steps to install a PDCU [4]:
- (a) Remove the protective covers from the electrical connectors.

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- (b) Examine the electrical connectors for bent or broken pins, dirt, and damage.
- (c) Connect the electrical connectors [2] to the PDCU [4].
- (d) Align the PDCU pins [1] with the installation slots.
- (e) Move the PDCU [4] forward until you can tighten the screws [3].
- (f) Tighten the captive screws.

SUBTASK 23-93-03-760-001

- (4) With the intrinsically safe approved bonding meter, COM-1550, make sure that the resistance between the surface and the PDCU [4] is 2.5 milliohms or less.

SUBTASK 23-93-03-160-001

- (5) If the resistance is more than 2.5 milliohms, do these steps:
 - (a) Soak a cloth or nonmetallic brush in a general purpose cleaner.
 - (b) Clean the area that the PDCU [4] will touch with the cloth or brush.
 - (c) Do the PDCU [4] installation again.

SUBTASK 23-93-03-860-005

- (6) For the left PDCU [4] do this task,
 - (a) Remove the safety tag and close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	C23603	OPAS 1

SUBTASK 23-93-03-860-009

- (7) For the right PDCU [4], do this task,
 - (a) Remove the safety tag and close this circuit breaker:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C23605	OPAS 3

F. Installation Test

SUBTASK 23-93-03-860-006

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 23-93-03-860-007

- (2) Make sure that the GROUND TEST ENABLE switch on the P61 panel is in the ENABLE position.

SUBTASK 23-93-03-730-001

- (3) Use a maintenance access terminal (MAT) to do the left OPAS system test:
 - (a) Make these selections on the MAT:
 - 1) ONBOARD MAINTENANCE
 - 2) LINE MAINTENANCE
 - 3) GROUND TESTS
 - 4) 23 Overhead Panel ARINC 629 System
 - 5) SYSTEM TEST
 - 6) For the left PDCU;
Left Overhead Panel ARINC 629 System

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- 7) For the right PDCU;
Right Overhead Panel ARINC 629 System
- 8) CONTINUE
- (b) Do the instructions that show on the MAT and then make these selections:
 - 1) CONTINUE
 - 2) START TEST
- (c) When the test is completed (approximately 2 minutes), make sure that PASSED shows adjacent to TEST CONDITION on the MAT.
NOTE: If the MAT shows OPERATING after 2 minutes, select STOP TEST and do the corrective action for the maintenance message shown.
- (d) To put the MAT back to its initial condition, make these selections:
 - 1) LINE MAINTENANCE
 - 2) EXIT MAINTENANCE

SUBTASK 23-93-03-860-010

- (4) On the P61 overhead maintenance panel, set the GND TEST switch to the NORM position and close the guard.

———— **END OF TASK** ————

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