CHAPTER

47

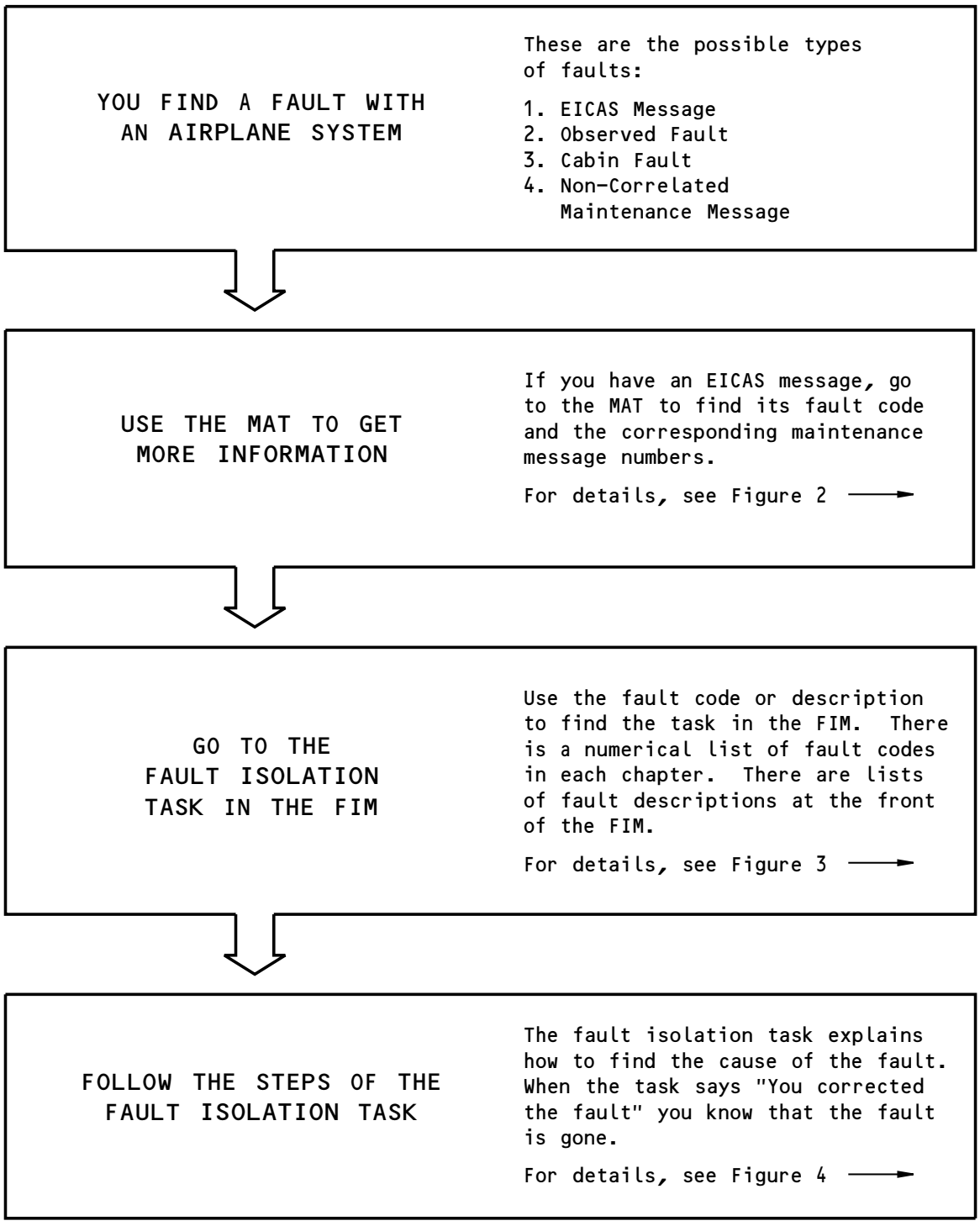
INERT GAS SYSTEM

CHAPTER 47
INERT GAS SYSTEM

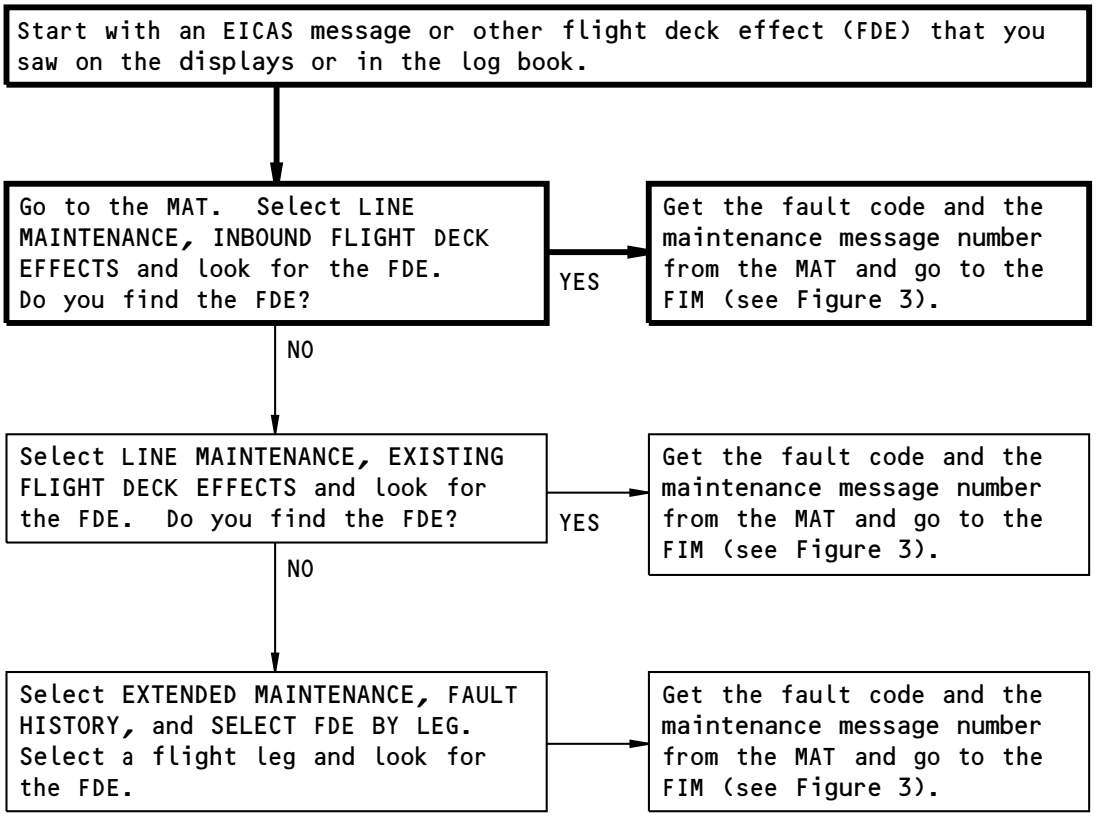
Subject/Page	Date	COC
47-EFFECTIVE PAGES		
1	SEP 05/2017	
2	BLANK	
47-HOW TO USE THE FIM		
1	Jan 05/2013	
2	Jan 05/2013	
3	Jan 05/2017	
4	Jan 05/2013	
5	Jan 05/2013	
6	Jan 05/2013	
47-FAULT CODE INDEX		
101	Jan 05/2013	
102	May 05/2015	
103	May 05/2015	
104	May 05/2015	
105	May 05/2015	
106	BLANK	
47-MAINT MSG INDEX		
101	Sep 05/2016	
102	Sep 05/2016	
47-31 TASKS		
201	Jan 05/2016	
202	Jan 05/2016	
203	Sep 05/2016	
204	Sep 05/2016	
205	Sep 05/2016	
206	Sep 05/2016	
207	Sep 05/2016	
208	Sep 05/2016	
209	Sep 05/2016	
210	Sep 05/2016	
211	Sep 05/2016	
212	Sep 05/2016	
213	Sep 05/2016	
214	Sep 05/2016	
215	Sep 05/2016	
216	Sep 05/2016	
47-31 TASKS (cont)		
217	Sep 05/2016	
218	Sep 05/2016	
219	Sep 05/2016	
220	Sep 05/2016	
221	Sep 05/2016	
222	Sep 05/2016	
223	Sep 05/2016	
224	Sep 05/2016	
225	Sep 05/2016	
226	Sep 05/2016	
227	Sep 05/2016	
228	Sep 05/2016	
229	Sep 05/2016	
230	Sep 05/2016	
231	Sep 05/2016	
232	Sep 05/2016	
233	Sep 05/2016	
234	Sep 05/2016	
R 235	Sep 05/2017	
O 236	Sep 05/2017	
237	Sep 05/2016	
238	Sep 05/2016	
239	Sep 05/2016	
240	Sep 05/2016	
241	Sep 05/2016	
242	Sep 05/2016	
243	Sep 05/2016	
244	Sep 05/2016	
245	Sep 05/2016	
246	Sep 05/2016	
247	Sep 05/2016	
248	Sep 05/2016	
249	Sep 05/2016	
250	Sep 05/2016	
251	Sep 05/2016	
252	Sep 05/2016	
47-31 TASKS (cont)		
253	Sep 05/2016	
254	Sep 05/2016	
255	Sep 05/2016	
256	Sep 05/2016	
257	Sep 05/2016	
258	Sep 05/2016	
259	Sep 05/2016	
260	Sep 05/2016	
261	Sep 05/2016	
262	Sep 05/2016	
263	Sep 05/2016	
264	Sep 05/2016	
265	Sep 05/2016	
266	Sep 05/2016	
267	Sep 05/2016	
268	Sep 05/2016	
269	Sep 05/2016	
270	Sep 05/2016	
271	Sep 05/2016	
272	Sep 05/2016	
47-31 TASK SUPPORT		
301	May 05/2016	
302	May 05/2016	
303	May 05/2016	
304	May 05/2016	

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

47-EFFECTIVE PAGES



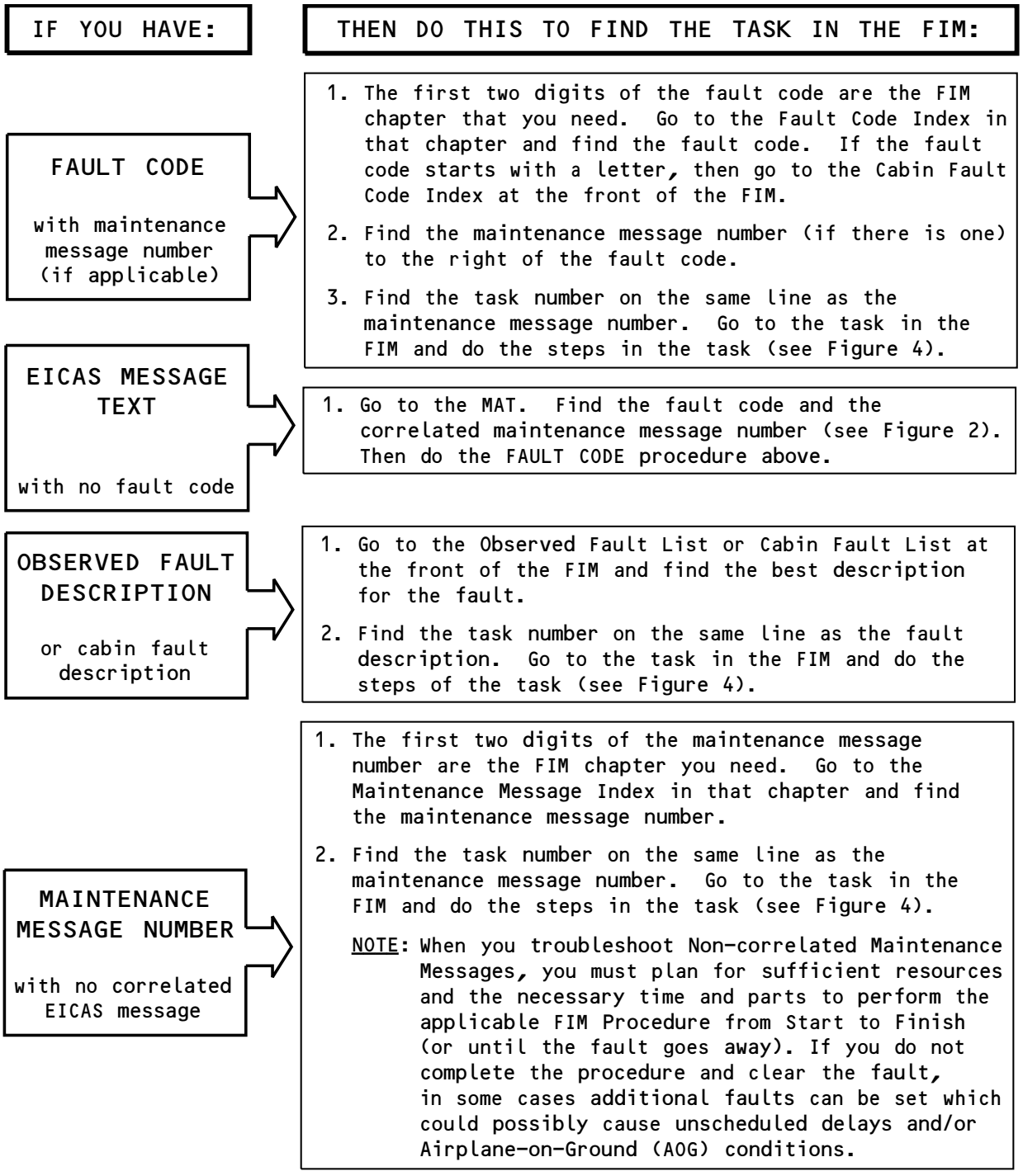
Basic Fault Isolation Process
Figure 1



NOTE: The bold lines show the most common path.

E84425 S0000132475_V1

Getting Fault Information from the MAT
Figure 2



E84427 S0000132476_V2

Finding the Fault Isolation Task in the FIM
Figure 3

ASSUMED CONDITIONS AT START OF TASK

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

INITIAL EVALUATION PARAGRAPH

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

FAULT ISOLATION STEPS

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

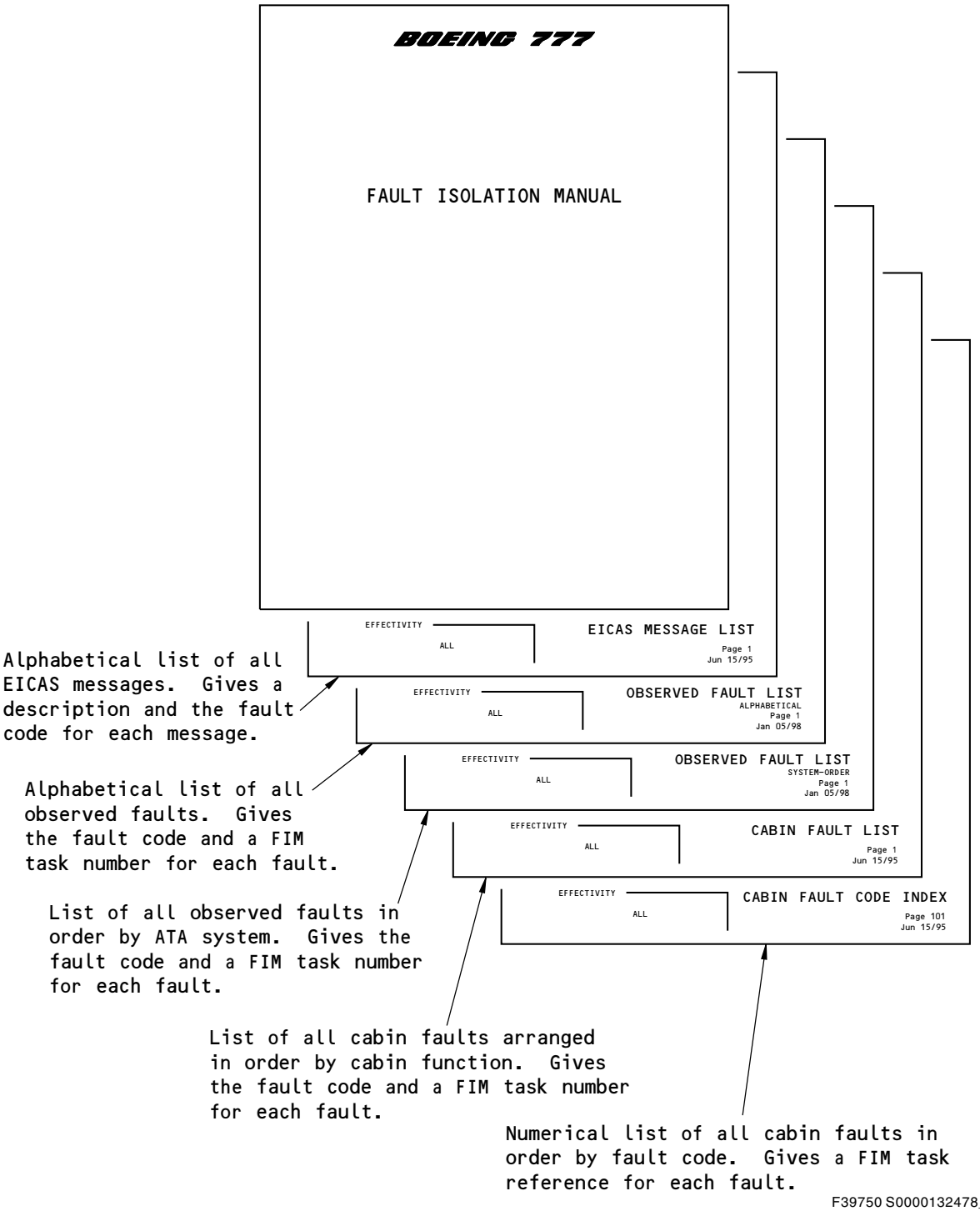
WIRING CHECKS

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

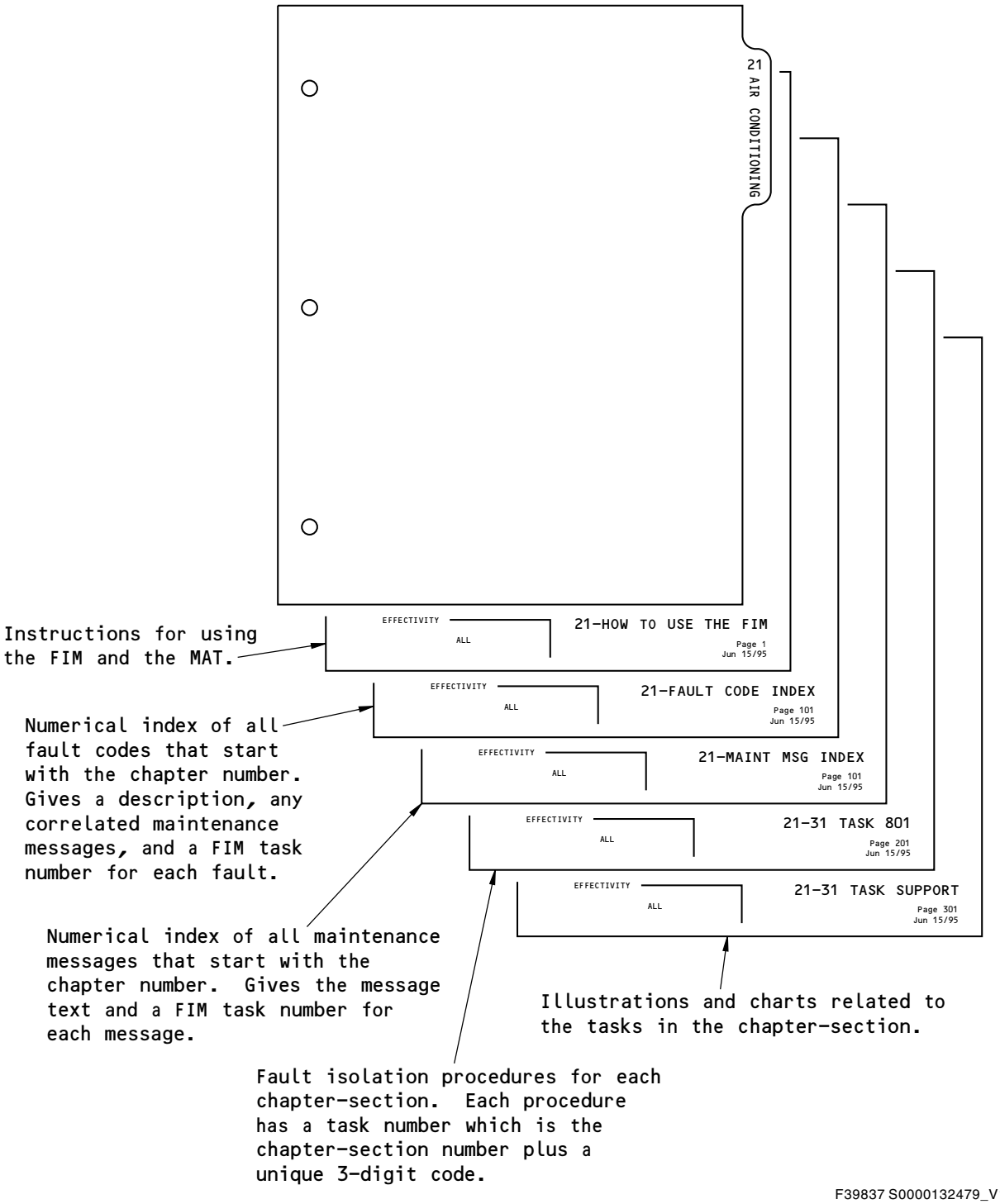
- continuity from contact to contact
- shorts between the contacts
- shorts from each contact to ground

E84428 S0000132477_V3

Doing the Fault Isolation Task
Figure 4



Subjects at Front of FIM
Figure 5



F39837 S0000132479_V1

Subjects in Each FIM Chapter
Figure 6

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
471 101 00	NITROGEN GEN PERF (EICAS STATUS)	21-18891	21-00 TASK 806
		21-18892	21-00 TASK 804
		23-41001	23-93 TASK 819
		23-41030	23-93 TASK 803
		23-41050	23-93 TASK 801
		23-41150	23-93 TASK 803
		23-41160	23-93 TASK 801
		23-41170	23-93 TASK 801
		23-41180	23-93 TASK 803
		23-41190	23-93 TASK 803
		23-41230	23-93 TASK 803
		23-41240	23-93 TASK 801
		23-41290	23-93 TASK 803
		23-41370	23-93 TASK 801
		23-41990	23-93 TASK 803
		23-42001	23-93 TASK 841
		23-42180	23-93 TASK 804
		23-42190	23-93 TASK 804
		23-42230	23-93 TASK 804
		23-43030	21-51 TASK 808
		23-43050	26-22 TASK 801
		23-43150	26-23 TASK 801
		23-43160	26-23 TASK 802
		23-43170	26-23 TASK 803
		23-43180	21-44 TASK 806
		23-43190	21-44 TASK 807
		23-43230	21-27 TASK 805
		23-43240	26-23 TASK 804
		23-43290	21-61 TASK 888
		23-43370	21-31 TASK 818
		23-43990	21-61 TASK 888
		23-45010	23-93 TASK 881
		23-47010	23-93 TASK 801
		23-47020	23-93 TASK 802
		23-48010	23-93 TASK 803

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
471 101 00	NITROGEN GEN PERF (EICAS STATUS)	(continued)	
		23-48020	23-93 TASK 804
		23-48801	23-93 TASK 881
		23-48802	23-93 TASK 806
		23-48841	23-93 TASK 819
		23-48842	23-93 TASK 841
		23-81001	23-91 TASK 801
		23-81002	23-91 TASK 802
		23-81003	23-91 TASK 803
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		23-91010	23-93 TASK 816
		23-91020	23-93 TASK 878
		23-92010	23-93 TASK 879
		23-92020	23-93 TASK 880
		24-12056	24-32 TASK 820
		24-13815	24-61 TASK 806
		27-15100	27-02 TASK 946
		27-15101	27-02 TASK 947
		27-15102	27-02 TASK 948
		31-14051	31-09 TASK 821
		31-14053	31-09 TASK 823
		31-14055	31-09 TASK 825
		31-14056	31-09 TASK 826
		31-14057	31-09 TASK 827
		31-14058	31-09 TASK 827
		31-17437	31-09 TASK 835
		31-17438	31-09 TASK 836
		31-17477	31-10 TASK 824
		31-17481	31-10 TASK 826
		31-17933	31-07 TASK 823
		31-17934	31-07 TASK 824
		31-18801	31-08 TASK 810
		31-18802	31-08 TASK 811
		31-18841	31-08 TASK 814
		31-18842	31-08 TASK 814

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
471 101 00	NITROGEN GEN PERF (EICAS STATUS)	(continued)	
		31-54013	31-43 TASK 868
		31-54101	31-41 TASK 834
		31-69101	31-42 TASK 801
		31-69117	31-42 TASK 806
		31-69301	31-42 TASK 817
		31-69317	31-42 TASK 822
		32-21000	32-09 TASK 807
		32-21001	32-09 TASK 808
		32-21100	32-09 TASK 802
		32-21101	32-09 TASK 801
		32-21300	32-09 TASK 803
		32-21301	32-09 TASK 804
		32-22000	32-09 TASK 809
		32-22001	32-09 TASK 809
		32-22100	32-09 TASK 809
		32-22101	32-09 TASK 809
		32-28801	32-09 TASK 821
		32-28802	32-09 TASK 822
		34-25201	34-11 TASK 804
		34-25202	34-11 TASK 805
		34-25203	34-11 TASK 806
		34-26201	34-21 TASK 843
		34-26202	34-21 TASK 844
		34-26203	34-21 TASK 845
		34-28801	34-21 TASK 848
		34-28810	34-21 TASK 849
		34-28816	34-21 TASK 814
		34-28827	34-21 TASK 851
		34-28830	34-21 TASK 852
		34-28838	34-21 TASK 854
		34-29101	34-21 TASK 893
		34-29105	34-21 TASK 816
		34-29120	34-21 TASK 894
		34-29201	34-21 TASK 858
		34-29204	34-21 TASK 860

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
471 101 00	NITROGEN GEN PERF (EICAS STATUS)	(continued)	
		34-29301	34-21 TASK 895
		34-29306	34-21 TASK 865
		34-29320	34-21 TASK 896
		47-30001	47-31 TASK 801
		47-30011	47-31 TASK 803
		47-30012	47-31 TASK 804
		47-30013	47-31 TASK 805
		47-30014	47-31 TASK 806
		47-30015	47-31 TASK 807
		47-30016	47-31 TASK 808
		47-30020	47-31 TASK 809
		47-30022	47-31 TASK 811
		47-30024	47-31 TASK 812
		47-30026	47-31 TASK 814
		47-30027	47-31 TASK 815
		47-30028	47-31 TASK 816
		47-30029	47-31 TASK 817
		47-30030	47-31 TASK 818
		47-30032	47-31 TASK 819
		47-30033	47-31 TASK 820
		47-30034	47-31 TASK 821
		47-30035	47-31 TASK 822
		47-30036	47-31 TASK 823
		47-30037	47-31 TASK 824
		47-30038	47-31 TASK 825
		47-30040	47-31 TASK 826
		47-30041	47-31 TASK 827
		47-30050	47-31 TASK 833
		47-30051	47-31 TASK 834
		47-30055	47-31 TASK 835
		47-30059	47-31 TASK 837
		47-30060	47-31 TASK 838
		47-30062	47-31 TASK 840
		47-30063	47-31 TASK 841
		47-30064	47-31 TASK 842

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
471 101 00	NITROGEN GEN PERF (EICAS STATUS)	(continued)	
		47-30065	47-31 TASK 843
		47-30066	47-31 TASK 844
		47-30067	47-31 TASK 845
		47-30068	47-31 TASK 846
471 102 00	NITROGEN GEN SYS (EICAS STATUS)	47-30002	47-31 TASK 802
		47-30021	47-31 TASK 810
		47-30025	47-31 TASK 813
473 811 00	Nitrogen generation system: INHIBITED:CMCS ACTIVE shows on BITE display unit when ground test is not in operation.		47-31 TASK 848

MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
47-30001	Nitrogen Generation System Controller has an internal fault.	47-31 TASK 801
47-30002	Nitrogen Generation System Controller is failed.	47-31 TASK 802
47-30011	NGS Temperature Sensor circuit is open or shorted.	47-31 TASK 803
47-30012	NGS Temperature Sensor has an internal fault.	47-31 TASK 804
47-30013	ASM HF DP Sensor circuit is open or shorted.	47-31 TASK 805
47-30014	ASM HF DP Sensor has an internal fault.	47-31 TASK 806
47-30015	OTSOV/ASM HFV is failed.	47-31 TASK 807
47-30016	TC PRESS Sensor has an internal fault.	47-31 TASK 808
47-30020	NGS Shut Off Valve circuit is open or shorted.	47-31 TASK 809
47-30021	NGS Shut Off Valve is failed.	47-31 TASK 810
47-30022	NGSSOV is failed.	47-31 TASK 811
47-30024	Over Temperature SOV circuit is open or shorted.	47-31 TASK 812
47-30025	Over Temperature SOV is failed.	47-31 TASK 813
47-30026	NGS Temperature Control Valve circuit is open or shorted.	47-31 TASK 814
47-30027	NGS Temperature Control Valve is failed.	47-31 TASK 815
47-30028	Nitrogen Generation System temperature is high.	47-31 TASK 816
47-30029	NGS Filter Differenrtal Pressure Switch indication is high.	47-31 TASK 817
47-30030	**AIMS-2, CMCF LDI 3111-BCG-00W-13;** **AIMS-2, CMCF LDI 3116-BCG-00W-14;** **AIMS-2, CMCF LDI 3117-BCG-00W-15;** ASM HFV Circuit is open or shorted. **AIMS-2, CMCF LDI 3114-BCG-00W-16;** ASM HFV circuit is open or shorted.	47-31 TASK 818
47-30032	ASM HFV is failed.	47-31 TASK 819
47-30033	Turbo Compressor SOV or NGS SOV is failed.	47-31 TASK 820
47-30034	**AIMS-2, CMCF LDI 3111-BCG-00W-13;** **AIMS-2, CMCF LDI 3116-BCG-00W-14;** **AIMS-2, CMCF LDI 3117-BCG-00W-15;** Turbo Compressor flow is out of range. **AIMS-2, CMCF LDI 3114-BCG-00W-16;** Turbo compressor flow is out of range.	47-31 TASK 821
47-30035	Turbo Compressor SOV circuit is open or shorted.	47-31 TASK 822
47-30036	**AIMS-2, CMCF LDI 3111-BCG-00W-13;** **AIMS-2, CMCF LDI 3116-BCG-00W-14;** **AIMS-2, CMCF LDI 3117-BCG-00W-15;** NGS Fan Relay Drive Circuit is Open or Shorted. **AIMS-2, CMCF LDI 3114-BCG-00W-16;** NGS Fan Relay Drive Circuit is open or shorted.	47-31 TASK 823

MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
47-30037	**AIMS-2, CMCF LDI 3111-BCG-00W-13;** **AIMS-2, CMCF LDI 3116-BCG-00W-14;** **AIMS-2, CMCF LDI 3117-BCG-00W-15;** NGS RAM Air Door Relay Drive Circuit is Open or Shorted. **AIMS-2, CMCF LDI 3114-BCG-00W-16;** NGS RAM Air Door Relay Drive Circuit is open or shorted.	47-31 TASK 824
47-30038	NGS RAM Air Door is failed.	47-31 TASK 825
47-30040	WOW signal input is failed.	47-31 TASK 826
47-30041	WOW discrete input is failed on ground state.	47-31 TASK 827
47-30050	Engine1 signal input is failed.	47-31 TASK 833
47-30051	Engine 2 signal input is failed.	47-31 TASK 834
47-30055	Compressor Temperature Sensor signal is out of range.	47-31 TASK 835
47-30059	CTR Left Tank refueling VLV input signal is failed.	47-31 TASK 837
47-30060	CTR Right tank refueling VLV input signal is failed.	47-31 TASK 838
47-30062	Oxygen Sensor is failed.	47-31 TASK 840
47-30063	ASM performance has degraded.	47-31 TASK 841
47-30064	**AIMS-2, CMCF LDI 3111-BCG-00W-13;** **AIMS-2, CMCF LDI 3116-BCG-00W-14;** **AIMS-2, CMCF LDI 3117-BCG-00W-15;** NGS has no input from ASG on ARINC 429 Bus. **AIMS-2, CMCF LDI 3114-BCG-00W-16;** NGS has no input from ASG on ARINC 429 bus.	47-31 TASK 842
47-30065	Compressor Outlet Pressure Sensor circuit is open or shorted.	47-31 TASK 843
47-30066	Airplane altitude input signal is failed.	47-31 TASK 844
47-30067	Compressor Temp Sensor circuit is open or shorted.	47-31 TASK 845
47-30068	Turbo compressor temperature is high.	47-31 TASK 846
47-38890	Nitrogen Generation System has no output on NGS ARINC 429 Buses.	47-31 TASK 847

801. NGS BITE Message NGS CONTROLLER - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30001.

B. Description

(1) This task is for fault message 47-30001.

(2) This fault message shows when the NGS controller internal self-test detects a controller problem.

(3) The NGS BITE display unit (BDU) will show the NGS CONTROLLER fault message when one or more of these conditions are true:

(a) Flow bypass valve driver fault

(b) High-flow valve driver fault

(c) NGS bleed pressure sensor interface fault

(d) NGS temperature sensor element 1 or 2 interface fault

(e) ASM differential pressure sensor (high-flow) interface fault

(f) ASM differential pressure sensor (mid-flow) interface fault

(g) Non-volatile memory (NVM) fault

(h) NGS BDU power supply driver fault

(i) Test mode fault

(j) Mux 4, 5, 7, or 8 fault

(k) A429 wraparound fault

(l) Temperature control valve driver fault

(m) Fan relay driver fault

(n) Ram door relay driver fault

(o) NGS oxygen sensor oxygen % or pressure sensor interface faults.

(p) NGS oxygen sensor driver fault

(q) Compressor temperature 1 or 2 interface fault

(r) Turbocompressor shutoff valve sol driver fault

(4) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Controller (M47001).

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the NGS BDU message, ELECTRICAL TEST PASS shows, then there was an intermittent problem.

(b) If the fault message, NGS CONTROLLER 47-30001 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Replace the NGS controller, M47001, do these tasks:

Nitrogen Generation System (NGS) Controller Removal, AMM TASK 47-31-01-000-801

Nitrogen Generation System (NGS) Controller Installation, AMM TASK 47-31-01-400-801

(2) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

H. Repair Confirmation

(1) If the NGS BDU Message, ELECTRICAL TEST PASS shows on the display, then you have corrected the problem.

——— END OF TASK ———

802. NGS BITE Message NGS CONTROLLER INOP - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30002.

B. Description

(1) This task is for fault code 47-30002.

(2) The NGS controller will show NGS CONTROLLER INOP when one or more of these conditions are true:

(a) NGS shutoff valve driver fault

(b) Overtemperature shutoff valve driver fault

(c) Program memory fault

(d) RAM fault

(e) Power supply fault

(f) Foreground frame overrun fault

(g) CSCI3 checksum fault

(h) Configuration fault

(i) Unexpected reset fault

(j) Watchdog fault

(k) Background frame overrun fault

(l) Mux 6 failed fault

(m) External watchdog fault

(n) NGSC compatibility fault

(3) If the controller finds a critical fault, it will reconfigure the system to the system fail-safe mode.

(a) The fail-safe mode will cause these system conditions:

1) The NGS controller software will be disabled.
2) The NGS controller will set all outputs to the OFF (fail-safe) condition.
3) Communication between the NGS controller and BDU may be disabled.

(b) The recovery condition to unlatch the fault is to cycle the system power. The system fail-safe mode will continue until the NGS controller passes the power-up self-test.

(4) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Controller (M47001)

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Open and close these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(2) The NGS controller will start the power-up self-test.

NOTE: The power-up self-test will be complete in 5 seconds.

(3) If the BDU messages are available and NGS CONTROLLER INOP 47-30002 does not show, then there was an intermittent fault.

(4) Do the fault isolation procedure if one of these conditions exist:

(a) NGS CONTROLLER INOP 47-30002 shows.

(b) No BDU menu items show.

G. Fault Isolation Procedure

(1) Replace the NGS controller, M47001, do these tasks:

Nitrogen Generation System (NGS) Controller Removal, AMM TASK 47-31-01-000-801

Nitrogen Generation System (NGS) Controller Installation, AMM TASK 47-31-01-400-801

(2) Open and close these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

(Continued)

Left Power Management Panel, P110

Row	Col	Number	Name
L	10	C47602	NGS 28V DC POWER

(a) The NGS controller will start the power-up self-test.

NOTE: The power-up self-test will be complete in 5 seconds.

H. Repair Confirmation

(1) If the BDU menu items are available and fault message, NGS CONTROLLER INOP 47-30002 does not show, then you corrected the problem.

——— END OF TASK ———

803. NGS BITE Message NGS TEMP SENSOR ELEC - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30011.

B. Description

(1) This task is for fault message 47-30011.

(2) NGS TEMP SENSOR ELEC shows when the controller finds an open or short circuit condition for the NGS temperature sensor.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Temperature Sensor (M47024)

(2) NGS Wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, NGS TEMP SENSOR ELEC 47-30011 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

(2) Disconnect the NGS temperature sensor (M47024), connector (DM47024), and examine the pins for corrosion or damage.

(a) If there is corrosion or damage, then do these steps:

1) Clean the connector (SWPM 20-60-01).

2) Repair the pins or replace the connector.

3) Re-connect the connector, DM47024.

4) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

5) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

6) If the fault message, NGS TEMP SENSOR ELEC 47-30011 shows, then continue.

(b) If there is no corrosion or damage, then continue.

(3) Replace the temperature sensor, M47024, do these tasks:

Temperature Sensor Removal, AMM TASK 47-43-03-000-801

Temperature Sensor Installation, AMM TASK 47-43-03-400-801

(4) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

(b) If the fault message, NGS TEMP SENSOR ELEC 47-30011 shows, then continue.

(5) Disconnect the connector, DM47024, on the NGS temperature sensor.

(6) Disconnect the connector, DM47001A, on the NGS controller.

(7) Do a continuity check from the NGS temperature sensor connector, DM47024, and the NGS controller connector, DM47001A (WDM 47–30–11).

DM47024	DM47001A
PIN A	PIN 8
PIN D	PIN 7
PIN B	PIN 3
PIN C	PIN 2

(8) If you find a problem with the wiring, then repair the wiring (WDM 47–30–11).

(9) Re-connect the connectors DM47024 and DM47001A.

(10) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

804. NGS BITE Message NGS TEMP SENSOR DRIFT - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30012.

B. Description

(1) This task is for fault message 47-30012.

(2) The NGS controller compares the temperature sensor 1 signal and the temperature sensor 2 signal. If the difference is more than ±16°F (-8.9°C) and lasts for more than 2 minutes 30 seconds, then the NGS TEMP SENSOR DRIFT fault message is set. If the NGS TEMP SENSOR DRIFT fault message is set, then the NGS controller will use the higher of the two temperature signals.

NOTE: The Electrical IBIT may clear this fault if it is only occurs at the higher temperatures during actual system operation. Pay additional attention to this fault if it shows on subsequent flights.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Temperature Sensor (M47024)

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the SYSTEM TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, NGS TEMP SENSOR DRIFT 47-30012 shows on the display, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Replace the temperature sensor, M47024, do these tasks:

Temperature Sensor Removal, AMM TASK 47-43-03-000-801

Temperature Sensor Installation, AMM TASK 47-43-03-400-801

H. Repair Confirmation

(1) Do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the SYSTEM TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

805. NGS BITE Message DP SENSOR HI ELEC - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30013.

B. Description

(1) This task is for fault message 47-30013.

(2) DP SENSOR HI ELEC shows when the NGS controller finds an open or short circuit condition for the high-flow differential pressure sensor (M47006).

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) High-flow Differential Pressure Sensor (M47006)

(2) NGS Wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, DP SENSOR HI ELEC 47-30013 shows on the display, do the Fault Isolation Procedure.

G. Fault Isolation Procedure

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

(2) Disconnect the high-flow differential pressure sensor (M47006), connector (DM47006), and examine the pins for corrosion or damage.

(a) If there is corrosion or damage, then do these steps:

1) Clean the connector (SWPM 20-60-01).
2) Repair the pins or replace the connector.
3) Re-connect the connector, DM47006.
4) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.
5) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.
6) If the fault message, DP SENSOR HI ELEC 47-30013 shows, then continue.

(b) If there is no corrosion or damage, then continue.

(3) Replace the differential pressure sensor, M47006, do these tasks:

Differential Pressure Sensor Removal, AMM TASK 47-42-02-000-801

Differential Pressure Sensor Installation, AMM TASK 47-42-02-400-801

(4) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

(b) If the fault message, DP SENSOR HI ELEC 47-30013 shows, then continue.

(5) Disconnect the connector, DM47006, on the high-flow differential pressure sensor.

(6) Disconnect the connector, DM47001A, on the NGS controller.

(7) Do a continuity check from the high-flow differential pressure sensor connector, DM47006, and the NGS controller connector, DM47001A (WDM 47–30–11).

DM47006	DM47001A
PIN 1	PIN 10
PIN 3	PIN 23

(8) If you find a problem with the wiring, then repair the wiring (WDM 47–30–11).

(9) Re-connect the connectors DM47006 and DM47001A.

(10) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If ELECTRICAL TEST PASS shows on the display, you corrected the problem.

——— END OF TASK ———

806. NGS BITE Message DP SENSOR HI DRIFT - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30014.

B. Description

(1) This task is for fault message 47-30014.

(2) DP SENSOR HI DRIFT shows on the display when there is a pressure drift for the high-flow differential pressure sensor. The fault message is set when the NGS controller does a zero pressure test of the high-flow DP sensor when the NGS system is commanded off.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) High-flow Differential Pressure Sensor (M47006)

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, DP SENSOR HI DRIFT 47-30014 shows, do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Replace the High-flow Differential Pressure Sensor, M47006, do these tasks:

Differential Pressure Sensor Removal, AMM TASK 47-42-02-000-801

Differential Pressure Sensor Installation, AMM TASK 47-42-02-400-801

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If ELECTRICAL TEST PASS shows on the display, the problem is corrected.

END OF TASK

807. NGS BITE Message OTSOV/HFV FAIL CLOSED - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30015.

B. Description

(1) This task is for maintenance message 47-30015.

(2) OTSOV/HFV FAIL CLOSED shows when the NGS is on, but a no-flow condition is sensed by the NGS controller.

(3) To find more data about this maintenance message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Overtemperature shutoff valve (V47005)

(2) High flow valve (V47004)

(3) High-flow differential pressure sensor (M47006)

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Push the ON/OFF button on the BDU.

(a) Make sure that EXISTING FAULTS? shows on the display.

1) If Existing FAULTS? does not show, then push the up or down arrow until EXISTING FAULTS? shows on the display.

(b) Push the YES button.

1) If OTSOV/HFV FAIL CLOSED shows on the display, then do the fault isolation procedure.

G. Fault Isolation Procedure

(1) Replace the overtemperature shutoff valve.

(a) Do these tasks:

Overtemperature Shutoff Valve (OTSOV) Removal, AMM TASK 47-11-03-000-801

Overtemperature Shutoff Valve (OTSOV) Installation, AMM TASK 47-11-03-400-801

(b) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

1) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

2) If OTSOV/HFV FAIL CLOSED shows on the display, then continue with the fault isolation.

(2) Replace the high flow valve.

(a) Do these tasks:

High Flow Valve Removal, AMM TASK 47-11-02-000-801

High Flow Valve Installation, AMM TASK 47-11-02-400-801

(b) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

1) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

2) If OTSOV/HFV FAIL CLOSED shows on the display, then continue with the fault isolation.

(3) Replace the high-flow differential pressure sensor.

(a) Do these tasks:

Differential Pressure Sensor Removal, AMM TASK 47-42-02-000-801

Differential Pressure Sensor Installation, AMM TASK 47-42-02-400-801

H. Repair Confirmation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

808. NGS BITE Message COMP PRESS SENS DRIFT - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30016.

B. Description

(1) This task is for maintenance message 47-30016.

(2) COMP PRESS SENSOR DRIFT shows when the turbo compressor pressure shows more than 5 psig (34 kPa), the pressure bleed (left manifold pressure) is less than 5 psig (34 kPa), and the NGS SOV is commanded closed for 45 seconds.

(3) To find more data about this fault , do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Left manifold pressure sensor (M36211)

(2) Turbo compressor pressure sensor (M47005)

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 36-21-11

(2) SSM 47-30-11

(3) WDM 47-30-11

F. Initial Evaluation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the SYSTEM TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, COMP PRESS SENSOR DRIFT 47-30016 shows on the display, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Look for a bleed air system pressure reading error.

(a) If there is error, do a check of the left manifold pressure sensor (M36211).

(b) If the bleed air system is satisfactory, then continue.

(2) Push the MENU button on the BDU.

(a) Make sure that OTHER FUNCTIONS? shows on the display.

1) If OTHER FUNCTIONS? does not show, push the up or down arrow until OTHER FUNCTIONS? shows on the display.

2) Push the YES button.

(b) Make sure that I/O MONITOR? shows on the display.

1) If I/O MONITOR? does not show, push the MENU button or the up or down arrow until I/O MONITOR? shows on the display.

2) Push the YES button.

(c) Make sure that ANALOG INPUTS? shows on the display.

1) If ANALOG INPUTS? does not show, push the up or down arrow until ANALOG INPUTS? shows on the display.

2) Push the YES button.

(d) Push the up or down arrow until PALT: XXXX.X FT/ PB: YYY.Y PSIG shows on the display.

1) Make a note of the bleed pressure (PB).

(3) Go to the flight compartment.

(a) Look at the dual duct pressure gage.

1) Make a note of the duct pressure.

(4) Compare the dual duct pressure gage reading with the bleed pressure (PB) reading on the BDU.

(a) If the pressure readings differ by ±2 psig (14 kPa) or more, then replace the turbo compressor pressure sensor, M47005.

1) Do these tasks:

Pressure Sensor Removal, AMM TASK 47-43-04-000-801

Pressure Sensor Installation, AMM TASK 47-43-04-400-801

(5) Push the MENU button to stop the test.

H. Repair Confirmation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the SYSTEM TEST PASS shows on the display, then you corrected the problem.

——— END OF TASK ———

809. NGS BITE Message NGSSOV ELEC FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30020.

B. Description

(1) This task is for fault 47-30020.

(2) NGSSOV ELEC FAIL shows when the NGS controller finds an open or a short circuit condition with the NGS shutoff valve solenoid.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Shutoff Valve (V47001)

(2) NGS Wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then there was an intermittent problem.

(b) If NGSSOV ELEC FAIL 47-30020 shows, then do the fault isolation procedure.

G. Fault Isolation Procedure

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(2) Disconnect the NGS shutoff valve (V47001), connector (DV47001), and examine the pins for corrosion or damage.

(a) If there is corrosion or damage, then do these steps:

1) Clean the connector (SWPM 20-60-01).

2) Repair the pins or replace the connector.

3) Re-connect the connector, DV47001.

4) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

5) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

6) If the NGS shutoff valve stays in the OPEN position, then look for the fault message NGSSOV FAIL OPEN 47-30021.

NOTE: This fault message may not show if the NGSSOV has an electrical fault.

7) If the NGS shutoff valve is in the CLOSED position, then continue with the fault isolation.

(b) If there is no corrosion or damage, then continue.

(3) Disconnect the connector, DV47001, on the NGS shutoff valve.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(5) Do a check for 28 VDC between pin A and pin D of connector DV47001.

(a) If there is not 28 VDC at pin A, then do these steps:

1) Do a check for an open circuit from pin A of connector, DV47001, to pin 9 of connector D11033P (P110 Left Power Management Panel).

2) Repair the problems that you find.

3) If the problem continues, replace the NITROGEN GENERATION CONTROL circuit breaker, C47601.

(6) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then you repaired the problem.

(7) If there is 28 VDC at pin A, then continue with the fault isolation.

(8) Do these steps to do a check for an open circuit between the NGS controller and the NGS shutoff valve:

(a) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(b) Disconnect connector, DM47001B, from the NGS controller, M47001.

(c) Do a check of the wire from connector DM47001B, pin 31, to connector DV47001, pin B.

(d) Repair the problems that you find.

(e) Connect connectors DM47001B and DV47001.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(10) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then you repaired the problem.

(11) If the problem continues, replace the NGS SOV:

NGS Shutoff Valve Removal, AMM TASK 47-32-01-000-801

NGS Shutoff Valve Installation, AMM TASK 47-32-01-400-801

H. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then you repaired the problem.

END OF TASK

810. NGS BITE Message NGSSOV FAIL OPEN - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30021.

B. Description

(1) This task is for fault 47-30021.

(2) NGSSOV FAIL OPEN shows on the display when the NGS controller finds that the NGS shutoff valve is in the incorrect open position.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Shutoff Valve (V47001)

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then there was an intermittent problem.

(b) If the fault NGSSOV FAIL OPEN 47-30021 shows on the display, then do the fault isolation procedure.

G. Fault Isolation Procedure

(1) Replace the NGS shutoff valve, V47001, do these tasks:

NGS Shutoff Valve Removal, AMM TASK 47-32-01-000-801,

NGS Shutoff Valve Installation, AMM TASK 47-32-01-400-801.

H. Repair Confirmation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

811. NGS BITE Message NGSSOV FAIL CLOSED - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30022.

B. Description

(1) This task is for maintenance message 47-30022.

(2) NGSSOV FAIL CLOSED shows when the NGS is on, but a no-flow condition is sensed by the NGS controller.

(3) To find more data about this maintenance message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS shutoff valve (V47001)

(2) L Manifold Press Sensor (M36211)

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Push the ON/OFF button on the BDU.

(a) Make sure that EXISTING FAULTS? shows on the display.

1) If Existing FAULTS? does not show, then push the up or down arrow until EXISTING FAULTS? shows on the display.

(b) Push the YES button.

1) If NGSSOV FAIL CLOSED shows on the display, then do the fault isolation procedure.

G. Fault Isolation Procedure

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

NOTE: The system test will run for 4 minutes.

(a) While the system test operates, have a person monitor the NGS shutoff valve position.

1) Make sure the NGS shutoff valve opens, then closes, during the system test.

(b) If the NGS shutoff valve does not open during the system test, then replace the NGS shutoff valve.

1) Do these tasks:

NGS Shutoff Valve Removal, AMM TASK 47-32-01-000-801,

NGS Shutoff Valve Installation, AMM TASK 47-32-01-400-801.

(c) If the NGS shutoff valve opens, then closes, during the system test, the NGS shutoff valve is serviceable.

1) Do this task: Manifold Pressure Sensor (Left) Signal Failed - Fault Isolation, 36-21 TASK 805.

H. Repair Confirmation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

812. NGS BITE Message OTSOV ELEC FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30024.

B. Description

(1) This task is for fault 47-30024.

(2) OTSOV ELEC FAIL shows on the display if the NGS controller finds one of these problems:

(a) The overtemperature shutoff valve (OTSOV) does not operate.

(b) There is a short circuit.

(c) There is an open circuit.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Thermal Switch (S47005)

(2) OTSOV (V47005)

(3) NGS Wiring

(4) NGS Temperature Sensor (M47024)

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then there was an intermittent problem.

(b) If OTSOV ELEC FAIL 47-30024 shows on the display, then do the fault isolation procedure.

G. Fault Isolation Procedure

(1) Replace the NGS thermal switch, S47005.

(a) Do these tasks:

Thermal Switch Removal, AMM TASK 47-42-04-000-801,

Thermal Switch Installation, AMM TASK 47-42-04-400-801.

(2) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is repaired.

(b) If the fault message, OTSOV ELEC FAIL 47-30024 shows, then continue.

(3) Replace the OTSOV, V47005.

(a) Do these tasks:

Overtemperature Shutoff Valve (OTSOV) Removal, AMM TASK 47-11-03-000-801,

Overtemperature Shutoff Valve (OTSOV) Installation, AMM TASK 47-11-03-400-801.

(4) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is repaired.

(b) If the fault message, OTSOV ELEC FAIL 47-30024 shows, then continue.

(5) Do these tasks to replace the NGS temperature sensor, M47024:

Temperature Sensor Removal, AMM TASK 47-42-05-000-801

Temperature Sensor Installation, AMM TASK 47-42-05-400-801

(6) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is repaired.

(b) If the fault message, OTSOV ELEC FAIL 47-30024 shows, then continue.

(7) Disconnect the connector, DV47005, from the OTSOV, V47005.

(8) Measure the voltage from pin A to pin B, on connector, DV47005.

(a) If the voltage is 28 VDC at pin A, then do these steps:

1) Disconnect the connector, DS47005, from the NGS thermal switch, S47005.

2) Measure the voltage from pin A to pin C, on connector, DS47005.

a) If the voltage is 28 VDC at pin A, then do these steps:

<1> Do a continuity check from the NGS thermal switch connector, DS47005, pin B to the OTSOV connector, DV47005, pin A (WDM 47-30-11).

<2> If you find a problem with the wiring, then repair the wiring (WDM 47-30-11).

<3> Connect the connectors DS47005 and DV47005.

b) If the voltage is not 28 VDC at pin A, then do these steps:

<1> Disconnect the connector, D11033P, from the NITROGEN GENERATION CONTROL circuit breaker, C47601.

<2> Do a continuity check from the NGS thermal switch connector, DS47005, pin A to the NITROGEN GENERATION CONTROL circuit breaker connector, D11033P, pin 9 (WDM 47-30-11).

<3> If you find a problem with the wiring, then repair the wiring (WDM 47-30-11).

<4> If the problem continues, replace the NITROGEN GENERATION CONTROL circuit breaker, C47601.

<5> Connect the connectors: DS47005, DV47005, and D11033P.

(9) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

(b) If there is 28 VDC at pin A, connector DV47005, then continue.

(10) Open these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(11) Disconnect the connector, DM47001B, from the NGS controller, M47001.

(12) Do a continuity check from the OTSOV connector, DV47005, pin C to the NGS controller connector, DM47001B, pin 30 (WDM 47-30-11).

(13) If you find a problem with the wiring, then repair the wiring (WDM 47-30-11).

(14) Connect the connectors DM47001B and DV47005.

(15) Disconnect the connector, DM47024, from the NGS temperature sensor, M47024 and the DM47001A, on the NGS controller, M47001.

(16) Do a continuity check from the NGS temperature sensor, DM47024 and the NGS controller connector, DM47001A (WDM 47-30-11):

DM47024	DM47001A
pin A	pin 8
pin D	pin 7
pin B	pin 3
pin C	pin 2

(a) If you find a problem with wiring, then repair the wiring (WDM 47-30-11).

(17) Reconnect the connectors DM47024 and DM47001A.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

813. NGS BITE Message OTSOV FAIL OPEN - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30025.

B. Description

(1) This task is for fault 47-30025.

(2) OTSOV FAIL OPEN shows when the NGS controller finds that the overtemperature shutoff valve is in the incorrect open position.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Overtemperature Shutoff Valve - OTSOV (V47005)

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then there was an intermittent problem.

(b) If OTSOV FAIL OPEN 47-30025 shows on the display, then do the fault isolation procedure.

G. Fault Isolation Procedure

(1) Replace the overtemperature shutoff valve, V47005.

(a) Do these tasks:

Overtemperature Shutoff Valve (OTSOV) Removal, AMM TASK 47-11-03-000-801

Overtemperature Shutoff Valve (OTSOV) Installation, AMM TASK 47-11-03-400-801

H. Repair Confirmation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

814. NGS BITE Message NGSTCV ELEC FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30026.

B. Description

(1) This task is for fault 47-30026.

(2) NGSTCV ELEC FAIL shows when the NGS controller finds an open or a short circuit condition with the NGS temperature control valve (TCV).

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Temperature Control Valve (V47002)

(2) NGS Wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then there was an intermittent problem.

(b) If NGSTCV ELEC FAIL 47-30026 shows, then do the fault isolation procedure.

G. Fault Isolation Procedure

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

(2) Disconnect the NGS TCV connector (DV47002), and examine the pins for corrosion or damage.

(a) If there is corrosion or damage, then do these steps:

1) Clean the connector (SWPM 20-60-01).

2) Repair the pins or replace the connector.

3) Re-connect the connector, DV47002.

4) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

5) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

6) If the fault message, NGSTCV ELEC FAIL 47-30026 shows, then continue.

(b) If there is no corrosion or damage, then continue.

(3) Replace the NGS TCV, V47002, do these tasks:

Temperature Control Valve Removal, AMM TASK 47-32-09-000-801

Temperature Control Valve Installation, AMM TASK 47-32-09-400-801

(4) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

(b) If the fault message, NGSTCV ELEC FAIL 47-30026 shows, then continue.

(5) Disconnect the connector, DV47002, on the NGS TCV.

(6) Disconnect the connector, DM47001B, on the NGS controller.

(7) Do a continuity check from the NGS TCV connector, DV47002, and the NGS controller connector, DM47001B (WDM 47–30–11).

DV47002	**DM47001B**
PIN A	PIN 35
PIN B	PIN 34

(8) If you find a problem with the wiring, then repair the wiring (WDM 47–30–11).

(9) Re-connect the connectors DV47002 and DM47001B.

(10) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, you corrected the problem.

——— END OF TASK ———

815. NGS BITE Message NGSTCV FAIL CLOSED - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30027.

B. Description

(1) This task is for maintenance message 47-30027.

(2) NGSTCV FAIL CLOSED shows when the NGS is on, but a low temperature condition is sensed by the NGS controller.

(3) To find more data about this maintenance message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS temperature control valve (V47002)

(2) Left manifold pressure sensor (M36211)

(3) NGS heat exchanger

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Push the ON/OFF button on the BDU.

(a) Make sure that EXISTING FAULTS? shows on the display.

1) If Existing FAULTS? does not show, then push the up or down arrow until EXISTING FAULTS? shows on the display.

(b) Push the YES button.

1) If NGSTCV FAIL CLOSED shows on the display, then do the fault isolation procedure.

G. Fault Isolation Procedure

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

NOTE: The system test will run for 4 minutes.

(a) While the system test operates, have a person monitor the NGS temperature control valve (TCV) torque motor.

1) Make sure the NGSTCV opens, then closes, during the system test.

(b) If the NGSTCV opens, then closes during the system test, then replace the NGS heat exchanger.

1) Do these tasks:

Heat Exchanger Removal, AMM TASK 47-32-03-000-802

Heat Exchanger Installation, AMM TASK 47-32-03-400-802

(c) If the NGSTCV does not open during the system test, then replace the NGSTCV.

1) Do these tasks:

Temperature Control Valve Removal, AMM TASK 47-32-09-000-801

Temperature Control Valve Installation, AMM TASK 47-32-09-400-801

(d) If the NGSTCV opens, then closes, during the system test, the NGSTCV is serviceable.

(2) Do the Fault Isolation Procedure in this task: Manifold Pressure Sensor (Left) Signal Failed - Fault Isolation, 36-21 TASK 805.

H. Repair Confirmation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

816. NGS BITE Message NGS OVERTEMP - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30028.

B. Description

(1) This task is for fault 47–30028

(2) NGS OVERTEMP shows when the NGS controller senses that the NGS system is operating above the optimal system temperature limits.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Temperature Control Valve

(2) NGS Heat Exchanger

(3) NGS Fan

(4) NGS Ram Air Check Valve

(5) NGS Ram Air Door

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
B	10	C47401	NGS RAM AIR ACTUATOR
H	10	C47301	NGS FAN
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the SYSTEM TEST PASS shows on the display, then there was an intermittent problem.

(b) If NGS OVERTEMP 47-30028 shows, then do the Fault Isolation Procedure.

(2) Listen to find if the NGS fan operates.

G. Fault Isolation Procedure

(1) Do this task: NGS BITE Message NGSTCV ELEC FAIL - Fault Isolation, 47-31 TASK 814.

(2) Do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the SYSTEM TEST PASS shows on the display, the problem is corrected.

(b) If the NGS OVERTEMP 47–30028 message shows, then continue.

(3) Replace the NGS heat exchanger.

(a) Do these tasks:

Heat Exchanger Removal, AMM TASK 47-32-03-000-802

Heat Exchanger Installation, AMM TASK 47-32-03-400-802

(4) Do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the SYSTEM TEST PASS shows on the display, the problem is corrected.

(b) If the NGS OVERTEMP 47–30028 message shows, then continue.

(5) Do this task: NGS BITE Message NGS FAN CIRCUIT FAIL - Fault Isolation, 47-31 TASK 823.

(a) If the NGS Fan did not operate in the Initial Evaluation, replace the NGS Fan Relay, K47002, installed in the power management panel, P110 (WDM 47-30-11).

(6) Do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the SYSTEM TEST PASS shows on the display, the problem is corrected.

(b) If the NGS OVERTEMP 47–30028 message shows, then continue.

(7) Replace the ram air check valve.

(a) Do these tasks:

Ram Air Check Valve Removal, AMM TASK 47-32-05-000-801

Ram Air Check Valve Installation, AMM TASK 47-32-05-400-801

(8) Do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the SYSTEM TEST PASS shows on the display, the problem is corrected.

(b) If the NGS OVERTEMP 47–30028 message shows, then continue.

(9) Do this task: NGS BITE Message NGS RAM DOOR FAIL - Fault Isolation, 47-31 TASK 825.

H. Repair Confirmation

(1) Do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the SYSTEM TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

817. NGS BITE Message FILTER BLOCKED - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30029.

B. Description

(1) This task is for fault 47-30029.

(2) The NGS controller does a filter BIT to find a blocked or defective filter. The filter BIT sets the FILTER BLOCKED message when all of these conditions are true:

(a) The filter differential pressure switch senses high pressure

(b) The NGS system is on

(c) The airplane is in the climb condition

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Filter DP switch (S47004)

(2) NGS filter

(3) Airplane wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then there was an intermittent problem.

(b) If FILTER BLOCKED 47-30029 shows on the display, then do the fault isolation procedure.

G. Fault Isolation Procedure

(1) Replace the filter DP switch, S47004.

(a) Do these tasks:

Filter Differential Pressure Switch Removal, AMM TASK 47-43-01-000-801

Filter Differential Pressure Switch Installation, AMM TASK 47-43-01-400-801

(2) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

(b) If FILTER BLOCKED 47-30029 shows, then continue with the fault isolation.

(3) Replace the NGS filter.

(a) Do these tasks:

Filter Removal, AMM TASK 47-32-04-000-801

Filter Installation, AMM TASK 47-32-04-400-801

(4) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

(b) If FILTER BLOCKED 47-30029 shows, then continue with the fault isolation.

(5) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(6) Disconnect the filter DP switch connector, DS47004, and examine the pins for corrosion or damage.

(a) If there is corrosion or damage, then do these steps:

1) Clean the connector (SWPM 20-60-01).

2) Repair the pins or replace the connector.

(b) If there is no corrosion or damage, then continue.

(7) Disconnect the NGS controller connector, DM47001B.

(8) Do a continuity check from the filter DP switch connector, DS47004, to the NGS controller connector, DM47001B (WDM 47-30-11).

NOTE: Pin 29 is the 28V DC RETURN pin.

DS47004		DM47001B
pin A	. . . . .	pin 6
pin B	. . . . .	pin 29

(9) If you find a problem with the wiring, then repair the wiring (WDM 47-30-11).

(10) Connect connectors DS47004 and DM47001B

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

818. NGS BITE Message HFV ELEC FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30030.

B. Description

(1) This task is for maintenance message 47-30030.

(2) HFV ELEC FAIL shows on the display when the NGS controller finds a problem with high-flow valve, an open circuit, or a short circuit in the high-flow valve circuit.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) High-flow valve (V47004)

(2) Airplane wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11.

F. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then there was an intermittent problem.

(b) If HFV ELEC FAIL 47-30030 shows, then do the fault isolation procedure.

G. Fault Isolation Procedure

(1) Replace the high-flow valve.

(a) Do these tasks:

High Flow Valve Removal, AMM TASK 47-11-02-000-801

High Flow Valve Installation, AMM TASK 47-11-02-400-801

(2) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then you repaired the problem.

(b) If HFV ELEC FAIL 47-30030 shows, then continue with the fault isolation procedure.

(3) Do these steps to do a check of the circuit between the NGS controller and the high-flow valve:

NOTE: Do a check for an open circuit or a short circuit in the wiring.

(a) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(b) Disconnect NGS controller, DM47001B.

(c) Disconnect the high-flow valve connector, DV47004.

(d) Do a check of the wire from connector, DM47001B, pin 14, to connector, DV47004, pin 2.

(e) Repair the problems that you find.

(f) Connect the connectors DM47001B and DV47004.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

819. NGS BITE Message HFV FAIL OPEN - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30032.

B. Description

(1) This task is for fault 47-30032.

(2) HFV FAIL OPEN shows when the NGS controller finds that the hardware for the ASM high-flow valve is failed in the open position.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) High-flow valve (V47004)

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

(Continued)

Left Power Management Panel, P110

Row	Col	Number	Name
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then there was an intermittent problem.

(b) If HFV FAIL OPEN 47-30032 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Replace the high-flow valve, V47004.

(a) Do these tasks:

High Flow Valve Removal, AMM TASK 47-11-02-000-801

High Flow Valve Installation, AMM TASK 47-11-02-400-801

H. Repair Confirmation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If SYSTEM TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

820. NGS BITE Message TCSOV/NGSSOV FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30033.

B. Description

(1) This task is for maintenance message 47-30033.

(2) TCSOV/NGSSOV FAIL shows when the turbo compressor shutoff valve has failed open or the NGS shutoff valve has failed to regulate properly.

(3) To find more data about this maintenance message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Turbo compressor shutoff valve (V47003)

(2) NGS shutoff valve (V47001)

(3) Airplane wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, then there was an intermittent problem.

(b) If the test does not pass, then do the fault isolation procedure.

G. Fault Isolation Procedure

(1) Replace the turbo compressor shutoff valve.

Do these tasks:

Turbo Compressor Shutoff Valve Removal, AMM TASK 47-32-17-000-801

Turbo Compressor Shutoff Valve Installation, AMM TASK 47-32-17-400-801

(2) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, then you repaired the problem.

(b) If the test does not pass, then continue with the fault isolation procedure.

(3) Disconnect the NGS shutoff valve connector, DV47001.

(4) Do a check for 28 VDC between pin A and pin D of connector, DV47001.

(a) If there is not 28 VDC at pin A, then do these steps:

1) Do a check for an open circuit from pin A of connector, DV47001, to pin 9 of the NITROGEN GENERATION CONTROL circuit breaker, C47601.

2) Repair the problems that you find.

3) If the problem continues, then replace the NITROGEN GENERATION CONTROL circuit breaker, C47601.

(b) If there is 28 VDC at pin A, then continue with the fault isolation procedure.

(c) Connect the connector, DV47001.

(5) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, then you repaired the problem.

(b) If the test does not pass, then continue with the fault isolation procedure.

(6) Do these steps to do a check of the circuit between the NGS controller and the NGS shutoff valve:

NOTE: Do a check for an open circuit or a short circuit in the wiring.

(a) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(b) Disconnect the NGS controller connector, DM47001B.

(c) Disconnect the NGS shutoff valve connector, DV47001.

(d) Do a check of the wire from connector, DM47001B, pin 31, to connector, DV47001, pin B.

(e) Repair the problems that you find.

(f) Connect the connectors, DM47001B and DV47001.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(8) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, then you repaired the problem.

(b) If the test does not pass, then continue with the fault isolation procedure.

(9) Replace the NGS shutoff valve.

(a) Do these tasks:

NGS Shutoff Valve Removal, AMM TASK 47-32-01-000-801

NGS Shutoff Valve Installation, AMM TASK 47-32-01-400-801

H. Repair Confirmation

(1) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, then you repaired the problem.

——— END OF TASK ———

821. NGS BITE Message TURBOCOMP FLOW LOSS - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30034.

B. Description

(1) The TURBOCOMP FLOW LOSS message shows when the Nitrogen Generation System (NGS) is ON, and the NGS Controller detects a NO FLOW condition.

(2) To find more data about this maintenance message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Turbo Compressor Shutoff Valve, V47003

(2) Turbo Compressor

(3) NGS Regen Heat Exchanger Assembly

(4) Turbo Compressor Check Valve

(5) Turbo Compressor Pressure Sensor, M47005

(6) Left Manifold Pressure Sensor, M36211

(7) NGS Controller

(8) Airplane Wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) WDM 47-30-11

(2) SSM 47-30-11

F. Initial Evaluation

(1) Do the ELECTRICAL TEST in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If “electrical test pass” shows on the BITE Display Unit (BDU), do the NGS PERF BOOSTED Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

1) If the test is satisfactory, then there was an intermittent problem.

2) If the test is not satisfactory, then do the Fault Isolation Procedure below.

(b) If TURBOCOMP FLOW LOSS 47-30034 shows on the BDU, then do the Fault Isolation Procedure below.

G. Fault Isolation Procedure

(1) Do this check of the NGS System wiring (WDM 47-30-11):

(a) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(b) Disconnect the Turbo Compressor Shutoff Valve electrical connector, DV47003.

(c) Disconnect the Compressor Out Thermal Switch electrical connector, DS47003.

(d) Disconnect the Pressure Sensor electrical connector, DM47005.

(e) Disconnect the NGS Controller electrical connectors, DM47001A and DM47001B.

(f) Do these continuity checks:

NGS CNTRLR DM47001A	PRESS SNSR DM47005
pin 9	pin 1
pin 22	pin 3

NGS CTRLR DM47001B	TRB CMPRSR SOV DM47001BDV47003
pin 50	pin C

TRB CMPRSR SOV DV47003	CMPRSR OUT THERM SW DS47003
pin A	pin B

(g) Repair the problems that you find (WDM 47-30-11).

(h) Reconnect the electrical connectors DV47003, DS47003, DM47005, DM47001A and DM47001B to their respective components.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(j) Do the Repair Confirmation at the end of this task.

(2) Replace the NGS Controller. These are the tasks:

- Nitrogen Generation System (NGS) Controller Removal, AMM TASK 47-31-01-000-801
- Nitrogen Generation System (NGS) Controller Installation, AMM TASK 47-31-01-400-801

(a) Do the Repair Confirmation at the end of this task.

(3) Do the Turbo Compressor Shaft Rotation (spin test) Torque Measurement as follows:

NOTE: Hand force is required to spin the Turbo Compressor to do the test.

(a) Assemble and use the tools that follow to spin the Turbo Compressor:

1) torque watch gauge, COM-14628
2) 1/4 inch drive adapter, STD-14629
3) 7/32 inch deep socket wrench, STD-14630.

(b) Put the socket side of the assembled tool unit into the Turbo Compressor.

(c) Spin the Turbo Compressor.

(d) Make sure that the Shaft Breakaway Torque is between 2 and 5 inch-ounces.

1) If the Shaft Breakaway Torque is not correct, replace the Turbo Compressor. These are the tasks:

- Turbo Compressor Removal, AMM TASK 47-32-15-000-801
- Turbo Compressor Installation, AMM TASK 47-32-15-400-801

a) Do the Repair Confirmation at the end of this task.

WARNING

OBEY THE SUBSEQUENT STEPS FOR ACCESS PANELS IDENTIFIED WITH A NITROGEN GENERATION SYSTEM PLACARD. IF THERE IS A LEAK IN THE NITROGEN GENERATION SYSTEM, IT WILL DECREASE THE OXYGEN IN THE AIR THAT YOU BREATHE. IF YOU BREATHE AIR THAT DOES NOT HAVE SUFFICIENT OXYGEN, DANGEROUS HEALTH CONDITIONS CAN QUICKLY OCCUR.

WARNING

WHEN YOU DO A TEST OF THE SYSTEM, MAKE SURE THAT THERE IS SUFFICIENT AIRFLOW IN THE AREA. USE LIFE SUPPORT EQUIPMENT IF YOU THINK THAT THERE IS A HIGH NITROGEN CONCENTRATION. LOW OXYGEN LEVELS IN THE AIR ARE DANGEROUS TO PERSONNEL.

CAUTION

IF THERE IS TOO MUCH LEAKAGE, STOP THE TEST. TOO MUCH LEAKAGE CAN CAUSE DAMAGE TO THE COMPONENTS.

(4) Do the Air Supply to the NGS Leakage Test as follows:

(a) Make sure that all duct connections or sense lines are tightened.

(b) On the P5 Panel, make sure that the L and R Air Conditioning Packs are in the OFF position.

(c) Put the EICAS Computer Select Switch to AUTO.

(d) Push the ECS/MSG button on the EICAS Maintenance Panel.

NOTE: All EICAS messages that show must be verified on the L and R EICAS Computers.

(e) On the P5 Overhead Panel, push the L ISLN and C ISLN Valve Switches to the OPEN position (bar shown).

(f) On the P5 Overhead Panel, push the R ISLN Valve Switch to the CLOSED position (bar not shown).

(g) Access the L and R Manifold Pressure on the AIR SUPPLY Page of the Multi-Function Display (MFD).

(h) Make sure that the L and R Manifold Pressure is in the specified range below:

- L Manifold is 0 to 3 psi.
- R Manifold is 0 to 3 psi.

1) If the L and R Manifold Pressure is not in the specified range, replace the Pressure Sensor. These are the tasks:

- Pressure Sensor Removal, AMM TASK 47-43-04-000-801
- Pressure Sensor Installation, AMM TASK 47-43-04-400-801

a) Do the Repair Confirmation at the end of this task.

2) If the L and R Manifold Pressure is in the specified range, continue.

(i) Do this task: Pressurize the Pneumatic System, AMM TASK 36-00-00-860-802.

(j) Make sure that the Air Driven Pump (ADP) to the Hydraulic Control Module is in the OFF position.

(k) On the P5 Overhead Panel, make sure that the Bleed Air Control Module Switches are in the correct position (see Table 201).

Table 201/47-31-00-993-801 Overhead Panel P5 Valve/Switches

Valve/Switch	APU Supplied Air Position (Indication)
L ENG BLEED AIR Switch	CLOSED (Bar Not Showing)
R ENG BLEED AIR Switch	CLOSED (Bar Not Showing)
APU BLEED Switch	OPEN (Bar Showing)
L ISLN Switch	OPEN (Bar Showing)
R ISLN Switch	CLOSED (Bar Not Showing)
C ISLN Switch	OPEN (Bar Showing)

(l) On the MFD AIR SUPPLY Page, access the L and R Manifold Pressure.

(m) Make sure that the L Manifold Pressure is more than 18 psi.

1) If the L Manifold Pressure is 18 psi or less, then repair the switches as necessary.

a) Do the Repair Confirmation at the end of this task.

2) If the L Manifold Pressure is more than 18 psi, then continue.

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

Left Power Management Panel, P110

Row	Col	Number	Name
H	10	C47301	NGS FAN
L	9	C47601	NGS CONTROL

(o) Push the ON/OFF pushbutton to ON to energize the NGS BDU.

NOTE: The NGS BDU will automatically turn OFF after five minutes of inactivity. If this occurs, push the NGS BDU ON/OFF pushbutton to continue with the test.

NOTE: The BDU is in the ECS Low Pressure Connection Door - 196CR.

(p) Do the NGS PERF NON-BOOSTED Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803 .

(Figure 301, Figure 302, Figure 303, Figure 304)

(q) On the MFD AIR SUPPLY Page, access the L and R Manifold Pressure.

(r) Make sure that the drop in the Left Manifold Pressure is less than 4 psi from the recorded value of greater than 18 psi.

1) If the pressure drop is more than or equal to 4 psi and no other excessive leakage is detected, then replace the Turbocompressor Shutoff Valve. These are the tasks:

- Turbo Compressor Shutoff Valve Removal, AMM TASK 47-32-17-000-801
- Turbo Compressor Shutoff Valve Installation, AMM TASK 47-32-17-400-801

a) Do the Repair Confirmation at the end of this task.

2) If other excessive leakage is detected, then repair the leakage as necessary.

a) Do the Repair Confirmation at the end of this task.

3) If the pressure drop is less than 4 psi, then continue.

(s) Make sure there is no concentrated leakage from the TCU/ASU Interconnecting Duct Assemblies and connections that are within reach from existing access panel.

NOTE: The Interconnecting Duct Assemblies connect the TCU to the filter and the ASU Pallet. On the TCU/ASU Interconnecting Ducts, a concentrated leak is defined as a leak where airflow can be felt on a hand 12 in. (30 cm) away. The TCU/ASU Interconnecting Duct Assemblies include a 1 in. (25 mm) x 0.06 in. (1.52 mm) diameter weep hole on the Center Crossover Bleed Duct Assembly. Ignore the air leaks from the weep hole. Diffuse leakage is permitted at all joints. The OTSOV and HFV are not part of this requirement because of possible constant leakage from solenoids and actuators.

1) If concentrated leakage is detected, replace the associated TCU/ASU Interconnecting Duct Assembly.

a) Do the Repair Confirmation at the end of this task.

2) If no concentrated leakage is detected, then continue.

(t) Make sure that there is airflow from one or both drain holes at the bottom of the NGS Filter.

(u) Use a soap solution to make sure that there are no airflow leaks from the Sense Lines and/or connections to the ducts associated with the Differential Pressure Switch Sense Lines.

1) If you find leakage, replace the Filter Differential Pressure Switch Sense Line.

a) Do the Repair Confirmation at the end of this task.

2) If you find no leakage, continue.

(v) Do the NGS PERF BOOSTED Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803 .

(Figure 301, Figure 302, Figure 303, Figure 304)

NOTE: The TCSOV is open in the Low Flow BOOSTED and High Flow BOOSTED Modes.

(w) On the TCU along the Turbocompressor Shutoff Valve (TCSOV) Interconnecting Duct Assemblies and Connections, make sure that no air flow leakage can be felt on a hand 12 in. (30 cm) away from the TCSOV.

(x) Push the MENU pushbutton on the BDU to exit the PERF BOOSTED Test Mode.

(y) Do this task: APU Usual Shutdown, AMM TASK 49-11-00-860-805.

(z) If you found leakage along the Turbocompressor Shutoff Valve (TCSOV) Interconnecting Duct Assemblies and Connections, replace the TCU along the Turbocompressor Shutoff Valve (TCSOV). These are the tasks:

- Turbo Compressor Check Valve Removal, AMM TASK 47-32-16-000-801
- Turbo Compressor Check Valve Installation, AMM TASK 47-32-16-400-801

1) Do the Repair Confirmation at the end of this task.

(aa) If you found no leakage, continue.

(5) Replace the NGS Regenerative Heat Exchanger. These are the tasks:

- Regenerative Heat Exchanger Removal, AMM TASK 47-32-14-000-801
- Regenerative Heat Exchanger Installation, AMM TASK 47-32-14-400-801

(a) Do the Repair Confirmation at the end of this task.

(6) Replace the three Air Separation Module (ASM)s. These are the tasks:

- Air Separation Module (ASM) Removal, AMM TASK 47-11-01-000-801
- Air Separation Module (ASM) Installation, AMM TASK 47-11-01-400-801

(a) Do the Repair Confirmation at the end of this task.

H. Repair Confirmation

(1) Do the ELECTRICAL TEST in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If “electrical test pass” shows on the BDU, do the NGS PERF BOOSTED Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

1) If the test is satisfactory, then you corrected the problem.

2) If the test is not satisfactory, then continue the Fault Isolation Procedure at the subsequent step.

——— END OF TASK ———

822. NGS BITE Message TCSOV ELEC FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30035.

B. Description

(1) This task is for fault 47-30035.

(2) TCSOV ELEC FAIL shows on the display if the NGS controller finds one of these problems:

(a) The turbo compressor shutoff valve (TCSOV) does not operate.

(b) There is a short circuit.

(c) There is an open circuit.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Turbo Compressor Thermal Switch (S47003)

(2) TCSOV (V47003)

(3) NGS Wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then there was an intermittent problem.

(b) If TCSOV ELEC FAIL 47-30035 shows on the display, then do the fault isolation procedure.

G. Fault Isolation Procedure

(1) Replace the turbo compressor thermal switch, S47003.

(a) Do these tasks:

Thermal Switch Removal, AMM TASK 47-43-02-000-801

Thermal Switch Installation, AMM TASK 47-43-02-400-801

(2) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is repaired.

(b) If the fault message, TCSOV ELEC FAIL 47-30035 shows, then continue.

(3) Replace the TCSOV, V47003.

(a) Do these tasks:

Turbo Compressor Shutoff Valve Removal, AMM TASK 47-32-17-000-801

Turbo Compressor Shutoff Valve Installation, AMM TASK 47-32-17-400-801

(4) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is repaired.

(b) If the fault message, TCSOV ELEC FAIL 47-30035 shows, then continue.

(5) Disconnect the connector, DV47003, from the TCSOV, V47003.

(6) Measure the voltage from pin A to pin B, on connector, DV47003.

(a) If the voltage is 28 VDC at pin A, then do these steps:

1) Disconnect the connector, DS47003, from the turbo compressor thermal switch, S47003.

2) Measure the voltage from pin A to pin C, on connector, DS47003.

a) If the voltage is 28 VDC at pin A, then do these steps:

<1> Do a continuity check from the turbo compressor thermal switch connector, DS47003, pin B to the TCSOV connector, DV47003, pin A (WDM 47-30-11).

<2> If you find a problem with the wiring, then repair the wiring (WDM 47-30-11).

<3> Connect the connectors DS47003 and DV47003.

b) If the voltage is not 28 VDC at pin A, then do these steps:

<1> Disconnect the connector, D11033P, from the NITROGEN GENERATION CONTROL circuit breaker, C47601.

<2> Do a continuity check from the turbo compressor thermal switch connector, DS47003, pin A to the NITROGEN GENERATION CONTROL circuit breaker connector, D11033P, pin 9 (WDM 47-30-11).

<3> If you find a problem with the wiring, then repair the wiring (WDM 47-30-11).

<4> If the problem continues, replace the NITROGEN GENERATION CONTROL circuit breaker, C47601.

<5> Connect the connectors: DS47003, DV47003, and D11033P.

(7) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

(b) If there is 28 VDC at pin A, connector DV47003, then continue.

(8) Open these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(9) Disconnect the connector, DM47001B, from the NGS controller, M47001.

(10) Do a continuity check from the TCSOV connector, DV47003, pin C to the NGS controller connector, DM47001B, pin 50 (WDM 47-30-11).

(11) If you find a problem with the wiring, then repair the wiring (WDM 47-30-11).

(12) Connect the connectors DM47001B and DV47003.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

823. NGS BITE Message NGS FAN CIRCUIT FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30036.

B. Description

(1) This task is for fault 47-30036.

(2) NGS FAN CIRCUIT FAIL shows when the NGS controller detects an open or shorted fan control circuit.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Fan (B47001)

(2) NGS Fan Relay (K47002)

(3) NGS Controller (M47001)

(4) Wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
H	10	C47301	NGS FAN
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent problem.

(b) If NGS FAN CIRCUIT FAIL 47-30036 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Make sure there is power to the NGS Fan Relay, K47002 (WDM 47-30-11).

(a) Do a check for 28VDC at the NGS Fan Relay connector, DK47002, pin X1.

(b) Do a check for 115VAC at the NGS Fan Relay connector, DK47002f, pins A2, B2 and C2.

(c) Repair any problems you find (WDM 47-30-11).

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

Left Power Management Panel, P110

Row	Col	Number	Name
H	10	C47301	NGS FAN
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(3) Replace the NGS Fan Relay, K47002, installed in the power management panel, P110 (WDM 47-30-11).

(a) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

1) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

2) If the NGS FAN CIRCUIT FAIL 47-30036 message shows, then continue.

(4) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
H	10	C47301	NGS FAN
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(5) Replace the NGS Fan, B47001, do these tasks:

Fan Removal, AMM TASK 47-32-11-000-801

Fan Installation, AMM TASK 47-32-11-400-801

(a) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

1) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

2) If the NGS FAN CIRCUIT FAIL 47-30036 message shows, then continue.

(6) Do these steps to do a check of the wiring (WDM 47-30-11):

(a) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
H	10	C47301	NGS FAN
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(b) Disconnect the NGS Fan Relay connector, DK47002.

(c) Disconnect the NGS Fan connector, DB47001.

(d) Disconnect the NGS Controller connector, DM47001B.

(e) Do the subsequent continuity checks:

DK47002	**DM47001B**
PIN X2	PIN 20
DB47001	**DM47001B**
PIN 6	PIN 4
DK47002	**DB47001**
PIN A1	PIN 1
PIN B1	PIN 2
PIN C1	PIN 3
PIN X2	PIN 5
D11033P	**DM47001B**
PIN 9	PIN 4

(f) If you find a problem with the wiring, then repair the wiring (WDM 47-30-11).

NOTE: There is a 422 ohm resistor in the circuit check between connectors D11033P, Pin 9 and DM47001B, Pin 4.

(g) Re-connect the connectors DK47002, DB47001, D11033P and DM47001B.

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

Left Power Management Panel, P110

Row	Col	Number	Name
H	10	C47301	NGS FAN
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

824. NGS BITE Message NGS RAM CIRCUIT FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30037.

B. Description

(1) This task is for fault 47-30037.

(2) NGS RAM CIRCUIT FAIL shows when the NGS controller senses that the Ram Air Door Relay is open/short.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Ram Air Actuator Relay (K47001)

(2) Wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
B	10	C47401	NGS RAM AIR ACTUATOR
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent problem.

(b) If NGS RAM CIRCUIT FAIL 47-30037 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Replace the NGS Ram Air Actuator Relay, K47001, installed in the power management panel, P110 (WDM 47–30–11).

(a) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

1) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

2) If the NGS RAM CIRCUIT FAIL 47–30037 message shows, then continue.

(2) Do these steps to check the wiring (WDM 47–30–11).

(a) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
B	10	C47401	NGS RAM AIR ACTUATOR
L	9	C47601	NGS CONTROL

(b) Disconnect the NGS Ram Air Actuator Relay connector, DK47001.

(c) Disconnect the NGS Controller connector, DM47001B.

(d) Disconnect the Ram Air Actuator connector, DM47015.

DK47001	DM47001B
PIN X1	PIN 17
PIN X2	PIN 18

DK47001	DM47015
PIN A3	PIN 10
PIN A1	PIN 1

(f) If you find a problem with the wiring, then repair the wiring (WDM 47–30–11).

(g) Re-connect the connectors DK47001, DM47001B, and DM47015.

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

Left Power Management Panel, P110

Row	Col	Number	Name
B	10	C47401	NGS RAM AIR ACTUATOR
L	9	C47601	NGS CONTROL

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

END OF TASK

825. NGS BITE Message NGS RAM DOOR FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30038.

B. Description

(1) This task is for fault 47-30038.

(2) NGS RAM DOOR FAIL shows when the NGS controller senses that the Ram Air Door is in the incorrect state.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Ram Air Door Actuator (M47015)

(2) NGS Ram Air Actuator Relay (K47001)

(3) NGS Controller (M47001)

(4) Wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
B	10	C47401	NGS RAM AIR ACTUATOR
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent problem.

(b) If NGS RAM DOOR FAIL 47-30038 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Replace the NGS Ram Air Actuator Relay, K47001, installed on the power management panel, P110 (WDM 47–30–11).

(a) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

1) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

2) If the NGS RAM DOOR FAIL 47–30038 message shows, then continue.

(2) Replace the Ram Air Door Actuator, M47015.

(a) Do this task: Ram Air Door Actuator Removal, AMM TASK 47-32-18-000-801.

(b) Do this task: Ram Air Door Actuator Installation, AMM TASK 47-32-18-400-801.

(c) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

1) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

2) If the NGS RAM DOOR FAIL 47–30038 message shows, then continue.

(3) Do these steps to check the wiring (WDM 47–30–11).

(a) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
B	10	C47401	NGS RAM AIR ACTUATOR
L	9	C47601	NGS CONTROL

(b) Disconnect the NGS Ram Air Actuator Relay connector, DK47001.

(c) Disconnect the NGS Controller connector, DM47001B.

(d) Disconnect the Ram Air Actuator connector, DM47015.

DK47001	**DM47001B**
PIN X1	PIN 17
PIN X2	PIN 18

DK47001	**DM47015**
PIN A3	PIN 10
PIN A1	PIN 1

DM47001B	**DM47015**
PIN 21	PIN 4

(f) If you find a problem with the wiring, then repair the wiring (WDM 47–30–11).

(g) Re-connect the connectors DK47001, DM47001B, and DM47015.

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

Left Power Management Panel, P110

Row	Col	Number	Name
B	10	C47401	NGS RAM AIR ACTUATOR
L	9	C47601	NGS CONTROL

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

826. NGS BITE Message WOW SIG FAIL IN AIR - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30040.

B. Description

(1) This task is for fault 47-30040.

(2) WOW SIG FAIL IN AIR shows on the display when the NGS controller senses that the AIR/GROUND relay system is in the incorrect air state for more than 10 seconds.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Primary air/ground relay system

(2) Airplane wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, WOW SIG FAIL IN AIR 47–30040 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Look at the Line Maintenance, Existing Flight Deck Effects display on the MAT.

(a) Look for EICAS messages related to weight-on-wheels.

(2) For each applicable EICAS messsage, do these steps:

(a) Find the maintenance message(s) listed with the EICAS message on the MAT.

(b) Find the maintenance message in the applicable FIM Maintenance Message Index.

(c) Do the specified fault isolation task.

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

827. NGS BITE Message WOW SIG FAIL ON GROUND - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30041.

B. Description

(1) This task is for fault 47-30041.

(2) WOW SIG FAIL ON GROUND shows on the display when the NGS controller senses that the AIR/GROUND relay system is in the incorrect ground state for more than 10 seconds.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Primary air/ground relay system

(2) Airplane wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Put the airplane in the air mode. To put the airplane in the air mode, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.

NOTE: Make sure the airplane is in the air mode for 20 seconds.

(2) Stop the air mode simulation. To stop the air mode simulation, do this task: Air/Ground Mode Simulation, AMM TASK 32-09-00-860-801.

(3) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(4) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(5) If the fault message, WOW SIG FAIL ON GROUND 47–30041 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Look at the Line Maintenance, Existing Flight Deck Effects display on the MAT.

(a) Look for EICAS messages related to weight-on-wheels.

(2) For each applicable EICAS messsage, do these steps:

(a) Find the maintenance message(s) listed with the EICAS message on the MAT.

(b) Find the maintenance message in the applicable FIM Maintenance Message Index.

(c) Do the specified fault isolation task.

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

833. NGS BITE Message ENG1 SIG FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30050.

B. Description

(1) This task is for fault 47-30050.

(2) ENG1 SIG FAIL shows on the display when the NGS controller senses that the engine 1 signal is in the incorrect state.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Engine 1 signal

(2) Airplane wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, ENG1 SIG FAIL 47–30050 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Look at the Line Maintenance, Existing Flight Deck Effects display on the MAT.

(a) Look for EICAS messages related to Engine 1.

(2) For each applicable EICAS messsage, do these steps:

(a) Find the maintenance message(s) listed with the EICAS message on the MAT.

(b) Find the maintenance message in the applicable FIM Maintenance Message Index.

(c) Do the specified fault isolation task.

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

834. NGS BITE Message ENG2 SIG FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30051.

B. Description

(1) This task is for fault 47-30051.

(2) ENG2 SIG FAIL shows on the display when the NGS controller senses that the engine 2 signal is in the incorrect state.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Engine 2 signal

(2) Airplane wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, ENG2 SIG FAIL 47–30051 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Look at the Line Maintenance, Existing Flight Deck Effects display on the MAT.

(a) Look for EICAS messages related to Engine 2.

(2) For each applicable EICAS messsage, do these steps:

(a) Find the maintenance message(s) listed with the EICAS message on the MAT.

(b) Find the maintenance message in the applicable FIM Maintenance Message Index.

(c) Do the specified fault isolation task.

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

835. NGS BITE Message COMP TEMP SENS DRIFT - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30055.

B. Description

(1) This task is for fault message 47-30055.

(2) The NGS controller compares the temperature sensor 1 signal and the temperature sensor 2 signal. If the difference is more than ±16°F (-8.9°C) and lasts for more than 2 minutes 30 seconds, then the COMP TEMP SENS DRIFT fault message is set. If the COMP TEMP SENS DRIFT fault message is set, then the NGS controller will use the higher of the two temperature signals.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Turbo Compressor Temperature Sensor (M47003)

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the test passes, then there was an intermittent fault.

(3) If the test does not pass, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(2) Replace the turbo compressor temperature sensor, M47003.

(a) Do this task: Temperature Sensor Removal, AMM TASK 47-43-03-000-801.

(b) Do this task: Temperature Sensor Installation, AMM TASK 47-43-03-400-801.

H. Repair Confirmation

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(2) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, the problem is corrected.

——— END OF TASK ———

836. NGS BITE Message AIRCRAFT ID INVALID - Fault Isolation

A. Description

(1) This task is for fault 47-30056.

(2) AIRCRAFT ID INVALID shows on the display when the NGS controller detects an incorrect aircraft ID signal.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

B. Possible Causes

(1) Airplane wiring (ID 1 connected to ID pins 2, 3 and RETURN (WDM 47-30-11).

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

D. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11.

E. Initial Evaluation

(1) Push the ON/OFF button on the BDU.

(a) Make sure that EXISING FAULTS? shows on the display.

1) If EXISTING FAULTS? does not show, push the up/down arrow until EXISTING FAULTS? shows on the display.

a) Push the YES button.

(b) If AIRCRAFT ID INVALID shows on the display, then do the fault isolation procedure.

F. Fault Isolation Procedure

(1) Do these steps to check the wiring for an open circuit at connector, DM47001A, for the NGS controller, M47001.

Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(a) Disconnect the electrical connector, DM47001A, at the NGS controller.

(b) Do a check of the wires at connector, DM47001A, pin 30 (ID 1), pin 29 (ID 2), pin 28 (ID 3) and pin 47 (ID return).

NOTE: Pins 47, 29, and 28 must all be connected to the ID 1 pin 30.

(c) Repair the problems that you find.

(d) Connect the connector, DM47001A.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

G. Repair Confirmation

(1) Do these steps:

(a) Push the MENU button on the BDU.

1) Make sure that OTHER FUNCTIONS? shows on the display.

a) If OTHER FUNCTIONS? does not show, push the up or down arrow until OTHER FUNCTIONS? shows on the display.

b) Push the YES button.

2) Make sure that SYS CONFIG? shows on the display.

a) If SYS CONFIG? does not show, push the up or down arrow until SYS CONFIG? shows on the display.

b) Push the YES button.

3) Make sure that AIRCRAFT ID: 777 shows on the display.

a) If AIRCRAFT ID: 777 shows on the display, then you have repaired the problem.

——— END OF TASK ———

837. NGS BITE Message REFUEL SIG1 FAIL OPEN - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30059.

B. Description

(1) This task is for fault 47-30059.

(2) REFUEL SIG1 FAIL OPEN shows on the display when the NGS controller senses that the refuel valve is in the incorrect state.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Left Center Tank Refuel Valve (Refuel Valve 1)

(2) Airplane Wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 28–21–21

(2) SSM 28–41–11

(3) SSM 47-30-11

(4) WDM 28–21–21

(5) WDM 28–41–11

(6) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the fault message, REFUEL SIG1 FAIL OPEN 47–30059 shows, then do the Fault Isolation Procedure.

(3) If the ELECTRICAL TEST PASS shows on the display, then do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(4) If the SYSTEM TEST PASS shows on the display, then there was an intermittent fault.

(5) If the fault message, REFUEL SIG1 FAIL OPEN 47–30059 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Look at the Line Maintenance, Existing Flight Deck Effects display on the MAT.

(a) Look for EICAS messages related to Left Center Tank Refuel Valve (Refuel Valve 1).

(2) For each applicable EICAS messsage, do these steps:

(a) Find the maintenance message(s) listed with the EICAS message on the MAT.

(b) Find the maintenance message in the applicable FIM Maintenance Message Index.

(c) Do the specified fault isolation task.

(3) Make sure that the Left Refuel Valve Open indication light is extinguished on the Integrated Refuel Panel.

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(b) If the SYSTEM TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

838. NGS BITE Message REFUEL SIG2 FAIL OPEN - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30060.

B. Description

(1) This task is for fault 47-30060.

(2) REFUEL SIG2 FAIL OPEN shows on the display when the NGS controller senses that the refuel valve is in the incorrect state.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Right Center Tank Refuel Valve (Refuel Valve 2)

(2) Airplane Wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 28–21–31

(2) SSM 28–41–11

(3) SSM 47-30-11

(4) WDM 28–21–31

(5) WDM 28–41–11

(6) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the fault message, REFUEL SIG1 FAIL OPEN 47–30059 shows, then do the Fault Isolation Procedure.

(3) If the ELECTRICAL TEST PASS shows on the display, then do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(4) If the SYSTEM TEST PASS shows on the display, then there was an intermittent fault.

(5) If the fault message, REFUEL SIG2 FAIL OPEN 47–30060 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Look at the Line Maintenance, Existing Flight Deck Effects display on the MAT.

(a) Look for EICAS messages related to Right Center Tank Refuel Valve (Refuel Valve 2).

(2) For each applicable EICAS messsage, do these steps:

(a) Find the maintenance message(s) listed with the EICAS message on the MAT.

(b) Find the maintenance message in the applicable FIM Maintenance Message Index.

(c) Do the specified fault isolation task.

(3) Make sure that the Right Refuel Valve Open indication light is extinguished on the Integrated Refuel Panel.

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then do the System Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(b) If the SYSTEM TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

840. NGS BITE Message NGS OXYGEN SENS FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30062.

B. Description

(1) This task is for fault message 47-30062.

(2) NGS OXYGEN SENS FAIL shows when the NGS controller finds an open or short circuit condition for the NGS oxygen sensor (M47018).

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS oxygen sensor (M47018)

(2) NGS wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

(3) If the fault message, NGS OXYGEN SENSOR ELEC 47-30062 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Disconnect the NGS oxygen sensor connector, DM47018, and examine the pins for corrosion or damage.

(a) If there is corrosion or damage, then do these steps:

1) Clean the connector (SWPM 20-60-01).

2) Repair the pins or replace the connector.

3) Re-connect the connector, DM47018.

4) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

5) If the ELECTRICAL TEST PASS shows on the display, then you repaired the problem.

6) If the fault message, NGS OXYGEN SENSOR 47-30062 shows on the display, then continue.

(b) If there is no corrosion or damage, then continue.

(2) Replace the NGS oxygen sensor (M47018).

(a) Do this task: Oxygen Sensor Removal, AMM TASK 47-42-03-000-801.

(b) Do this task: Oxygen Sensor Installation, AMM TASK 47-42-03-400-801.

(3) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then you repaired the problem.

(b) If the fault message, NGS OXYGEN SENSOR 47-30062 shows on the display, then continue.

(4) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(5) Disconnect the connector, DM47018, on the NGS oxygen sensor.

(6) Disconnect the connector, DM47001A, on the NGS controller.

(7) Disconnect the connector, DM47001B, on the NGS controller.

(8) Do a continuity check from the NGS oxygen sensor connector, DM47018, and the NGS controller connectors, DM47001A and DM47001B (WDM 47-30-11).

DM47018	DM47001B
pin G	pin 15

DM47018	DM47001A
pin E	pin 44
pin D	pin 42

(9) If you find a problem with the wiring, repair the wiring (WDM 47-30-11).

(10) Connect the connectors: DM47018, DM47001A, and DM47001B.

(11) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then you repaired the problem.

——— END OF TASK ———

841. NGS BITE Message NGS ASM FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30063.

B. Description

(1) This task is for fault 47-30063

(2) The NGS ASM FAIL shows when the ASM performance is degraded or an overtemperature occurs.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Air Separation Module (ASM)

(2) NGS Oxygen Sensor

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do ground operation test in the non-boosted mode and the boosted mode in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the tests pass, then there was an intermittent fault.

(b) If the tests do not pass, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(2) Replace all three ASMs.

(a) Do these tasks:

Air Separation Module (ASM) Removal, AMM TASK 47-11-01-000-801

Air Separation Module (ASM) Installation, AMM TASK 47-11-01-400-801

(3) Do ground operation test in non-boosted mode and boosted mode in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, then you repaired the problem.

(b) If the test do not pass, then do the Fault Isolation Procedure.

(4) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(5) Do these steps to replace the NGS oxygen sensor (M47018):

(a) Oxygen Sensor Removal, AMM TASK 47-42-03-000-801

(b) Oxygen Sensor Installation, AMM TASK 47-42-03-400-801

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the ground operation test in the non-boosted mode and the boosted mode in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the tests pass, the problem is corrected.

END OF TASK

842. NGS BITE Message LOSS OF ASG A429 INPUT - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30064.

B. Description

(1) This task is for fault 47-30064.

(2) LOSS OF ASG A429 INPUT shows on the display when the NGS controller senses that the ARINC 429 signal is not transmitting.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) ASG ARINC 429 Transmitter

(2) NGSC ARINC 429 Receiver

(3) Airplane wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, LOSS OF ASG A429 INPUT 47–30064 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(2) Do a continuity check from the NGS controller connector, DM47001B to the system cardfile (left), DP8510 (WDM 47-30-11).

DM47001B	DP8510
pin 38	pin 45
pin 39	pin 44
pin 55	pin 24
pin 37	pin 42

(3) Look at the Line Maintenance, Existing Flight Deck Effects display on the MAT.

(a) Look for EICAS messages related to ARINC 429.

(4) For each applicable EICAS messsage, do these steps:

(a) Find the maintenance message(s) listed with the EICAS message on the MAT.

(b) Find the maintenance message in the applicable FIM Maintenance Message Index.

(c) Do the specified fault isolation task.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

843. NGS BITE Message COMP PRESS SENS ELEC - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30065.

B. Description

(1) This task is for fault message 47-30065.

(2) COMP PRESS SENS ELEC shows when the controller finds an open or short circuit condition for the NGS turbo compressor pressure sensor (M47005).

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Turbo Compressor Pressure Sensor (M47005)

(2) Wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, COMP PRESS SENS ELEC 47-30065 shows, do the Fault Isolation Procedure.

G. Fault Isolation Procedure

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

(2) Disconnect the NGS turbo compressor pressure sensor (M47005), connector, DM47005, and examine the pins for corrosion or damage.

(a) If there is corrosion or damage, then do these steps:

1) Clean the connector (SWPM 20-60-01).

2) Repair the pins or replace the connector.

3) Re-connect the connector, DM47005.

(b) If there is no corrosion or damage, then continue.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(4) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

(b) If the fault message, COMP PRESS SENS ELEC 47-30065 shows, then continue.

(5) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(6) Replace the turbo compressor pressure sensor, M47005.

(a) Do these tasks:

Pressure Sensor Removal, AMM TASK 47-43-04-000-801

Pressure Sensor Installation, AMM TASK 47-43-04-400-801

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(8) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

(b) If the fault message, COMP PRESS SENS ELEC 47-30065 shows, then continue.

(9) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(10) Disconnect the connector, DM47005, on the turbo compressor pressure sensor.

(11) Disconnect the connector, DM47001A, on the NGS controller.

(12) Do a continuity check from the turbo compressor pressure sensor connector, DM47005, to the NGS controller connector, DM47001A (WDM 47–30–11).

DM47005		DM47001A
pin 1	. . . . .	pin 9
pin 3	. . . . .	pin 22

(13) If you find a problem with the wiring, repair the wiring (WDM 47–30–11).

(14) Connect the connectors, DM47005 and DM47001A.

(15) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

H. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

844. NGS BITE Message LOSS OF ALTITUDE DATA - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30066.

B. Description

(1) This task is for fault 47-30066.

(2) LOSS OF ALTITUDE DATA shows on the display when the NGS controller senses that the altitude data is in the incorrect state.

(3) To find more data about this fault, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) Altitude Indication

(2) Airplane wiring

D. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Related Data

(1) SSM 47-30-11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, LOSS OF ALTITUDE DATA 47–30066 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

(1) Look at the Line Maintenance, Existing Flight Deck Effects display on the MAT.

(a) Look for EICAS messages related to altitude indication.

(2) For each applicable EICAS messsage, do these steps:

(a) Find the maintenance message(s) listed with the EICAS message on the MAT.

(b) Find the maintenance message in the applicable FIM Maintenance Message Index.

(c) Do the specified fault isolation task.

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

845. NGS BITE Message COMP TEMP SENS ELEC - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30067.

B. Description

(1) This task is for fault message 47-30067.

(2) COMP TEMP SENS ELEC shows when the controller finds an open or short circuit condition for the NGS turbo compressor temperature sensor (M47003).

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Turbo Compressor Temperature Sensor (M47003)

(2) NGS Wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

F. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(2) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent fault.

(3) If the fault message, COMP TEMP SENS ELEC 47-30067 shows, do the Fault Isolation Procedure.

G. Fault Isolation Procedure

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

(2) Disconnect the turbo compressor temperature sensor (M47003), connector, DM47003, and examine the pins for corrosion or damage.

(a) If there is corrosion or damage, then do these steps:

1) Clean the connector (SWPM 20-60-01).

2) Repair the pins or replace the connector.

3) Re-connect the connector, DM47003.

(b) If there is no corrosion or damage, then continue.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(4) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

(b) If the fault message, COMP TEMP SENS ELEC 47-30067 shows, then continue.

(5) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(6) Replace the turbo compressor temperature sensor (M47003).

(a) Do this task: Temperature Sensor Removal, AMM TASK 47-43-03-000-801.

(b) Do this task: Temperature Sensor Installation, AMM TASK 47-43-03-400-801.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(8) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then the problem is corrected.

(b) If the fault message, COMP TEMP SENS ELEC 47-30067 shows, then continue.

(9) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(10) Disconnect the connector, DM47003, on the turbo compressor temperature sensor.

(11) Disconnect the connector, DM47001A, on the NGS controller.

(12) Do a continuity check from the turbo compressor temperature sensor connector, DM47003, and the NGS controller connector, DM47001A (WDM 47–30–11).

DM47003		DM47001A
pin A	. . . . .	pin 40
pin D	. . . . .	pin 39
pin B	. . . . .	pin 21
pin C	. . . . .	pin 20

(13) If you find a problem with the wiring, then repair the wiring (WDM 47–30–11).

(14) Re-connect the connectors, DM47003 and DM47001A.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If ELECTRICAL TEST PASS shows on the display, the problem is corrected.

——— END OF TASK ———

846. NGS BITE Message TURBOCOMP OVER HEAT - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-30068.

B. Description

(1) This task is for fault 47-30068.

(2) TURBOCOMP OVER HEAT shows when the NGS controller senses that the turbo compressor is not operating correctly.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS turbo compressor

(2) NGS regen heat exchanger assembly

(3) Turbo compressor check valve

(4) Turbo compressor shutoff valve

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

F. Initial Evaluation

(1) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, then there was an intermittent problem.

(b) If the test does not pass, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(2) Replace the turbo compressor.

(a) Do these tasks:

Turbo Compressor Removal, AMM TASK 47-32-15-000-801

Turbo Compressor Installation, AMM TASK 47-32-15-400-801

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(4) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, the problem is corrected.

(b) If the test does not pass, then continue.

(5) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(6) Replace the NGS regen heat exchanger assembly.

(a) Do these tasks:

Regenerative Heat Exchanger Removal, AMM TASK 47-32-14-000-801

Regenerative Heat Exchanger Installation, AMM TASK 47-32-14-400-801

(7) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, the problem is corrected.

(b) If the test does not pass, then continue.

(8) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(9) Replace the turbo compressor check valve

(a) Do these tasks:

Turbo Compressor Check Valve Removal, AMM TASK 47-32-16-000-801

Turbo Compressor Check Valve Installation, AMM TASK 47-32-16-400-801

(10) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, the problem is corrected.

(b) If the test does not pass, then continue.

(11) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(12) Replace the turbo compressor shutoff valve

(a) Do these tasks:

Turbo Compressor Shutoff Valve Removal, AMM TASK 47-32-17-000-801

Turbo Compressor Shutoff Valve Installation, AMM TASK 47-32-17-400-801

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the ground operation (boosted mode) test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the test passes, the problem is corrected.

——— END OF TASK ———

847. NGS BITE Message NITROGEN GENERATION SYSTEM ACTIVITY FAIL - Fault Isolation

A. Maintenance Messages

(1) This task is for maintenance message: 47-38890.

B. Description

(1) This task is for fault 47-38890.

(2) NITROGEN GENERATION SYSTEM ACTIVITY FAIL shows when the AIMS/EICAS has lost communication with the NGS.

(3) To find more data about this fault message, do this task: BDU Fault History Menu, AMM TASK 47-31-02-740-803.

C. Possible Causes

(1) NGS Controller, M47001

(2) Left ASG Card, P85A12

(3) Right ASG Card, P85A15

(4) Airplane Wiring

D. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

E. Related Data

(1) WDM 47-30-11

F. Initial Evaluation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, then there was an intermittent problem.

(b) If NITROGEN GENERATION SYSTEM ACTIVITY FAIL 47-38890 shows, then do the Fault Isolation Procedure.

G. Fault Isolation Procedure

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

(1) Do a check for 28 VDC from pin 46 to pin 45 of connector DM47001B.

(a) If there is not 28 VDC at pin 46 of connector DM47001B, do these steps:

1) Repair the wiring.

2) Do the Repair Confirmation at the end of this task.

3) If NITROGEN GENERATION SYSTEM ACTIVITY FAIL 47-38890 shows, then continue.

(b) If there is 28 VDC at pin 46 of connector DM47001B, then replace the NGS Controller, M47001.

These are the tasks:

Nitrogen Generation System (NGS) Controller Removal, AMM TASK 47-31-01-000-801,

Nitrogen Generation System (NGS) Controller Installation, AMM TASK 47-31-01-400-801.

1) Do the Repair Confirmation at the end of this task.

2) If NITROGEN GENERATION SYSTEM ACTIVITY FAIL 47-38890 shows, then continue.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

(3) Do a check of this wiring:

(a) Remove the left ARINC Signal Gateway (ASG) card, P85A12 (AMM TASK 31-09-02-000-801).

(b) Do a wiring check between these pins of connector XA12 at the P85A12 shelf and connector DM47001B at the NGS Controller:

XA12	DM47001B
pin 75	pin 55
pin 78	pin 37

(c) If you find a problem with the wiring, do these steps:

1) Replace the ARINC 429 wiring.
2) Install the left ASG card, P85A12 (AMM TASK 31-09-02-400-802).
3) Remove the safety tags and close these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

4) Do the Repair Confirmation at the end of this task.
5) If NITROGEN GENERATION SYSTEM ACTIVITY FAIL 47-38890 shows, then continue.

(d) If you do not find a problem with the wiring, then replace the left ASG card, P85A12.

These are the tasks:

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

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

1) Do the Repair Confirmation at the end of this task.
2) If NITROGEN GENERATION SYSTEM ACTIVITY FAIL 47-38890 shows, then continue.

(4) Do a check of this wiring:

(a) Remove the right ASG card, P85A15. To remove it, do this task: ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801.

(b) Do a wiring check between these pins of connector XA15 at the P85A15 shelf and connector DP8511:

XA15	DP8511
pin 75	pin 24
pin 78	pin 42

(c) If you find a problem with the wiring, do these steps:

1) Replace the ARINC 429 wiring.
2) Install the right ASG card, P85A15 (AMM TASK 31-09-02-400-802).
3) Do the Repair Confirmation at the end of this task.
4) If NITROGEN GENERATION SYSTEM ACTIVITY FAIL 47-38890 shows, then continue.

(d) If you do not find a problem with the wiring, then replace the right ASG card, P85A15.

These are the tasks:

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

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

1) Do the Repair Confirmation at the end of this task.

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

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL
L	10	C47602	NGS 28V DC POWER

H. Repair Confirmation

(1) Do the Electrical Test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-910-803.

(a) If the ELECTRICAL TEST PASS shows on the display, you corrected the fault.

——— END OF TASK ———

848. NGS BITE Message INHIBITED: CMCS ACTIVE

A. Description

(1) INHIBITED:CMCS ACTIVE shows on the NGS Bite Display Unit (BDU) when the NGS system or electrical test from the MAT is completed.

B. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

Row	Col	Number	Name
L	9	C47601	NGS CONTROL

C. Related Data

(1) SSM 47–30–11

(2) WDM 47–30–11

D. Fault Isolation Procedure

(1) Open and close this circuit breaker:

Left Power Management Panel, P110

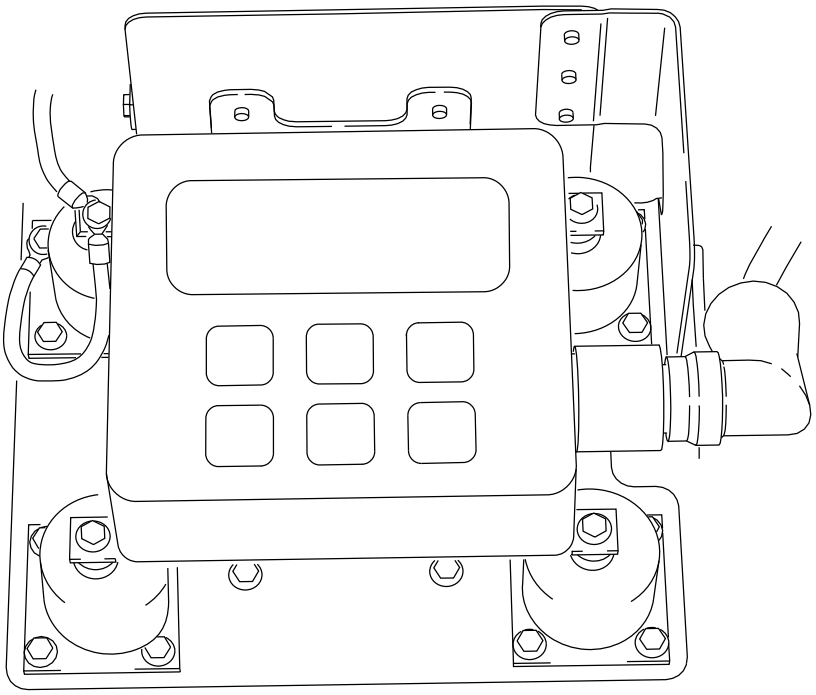
Row	Col	Number	Name
L	9	C47601	NGS CONTROL

E. Repair Confirmation

(1) Push the “ON/OFF” push button on the NGS BDU.

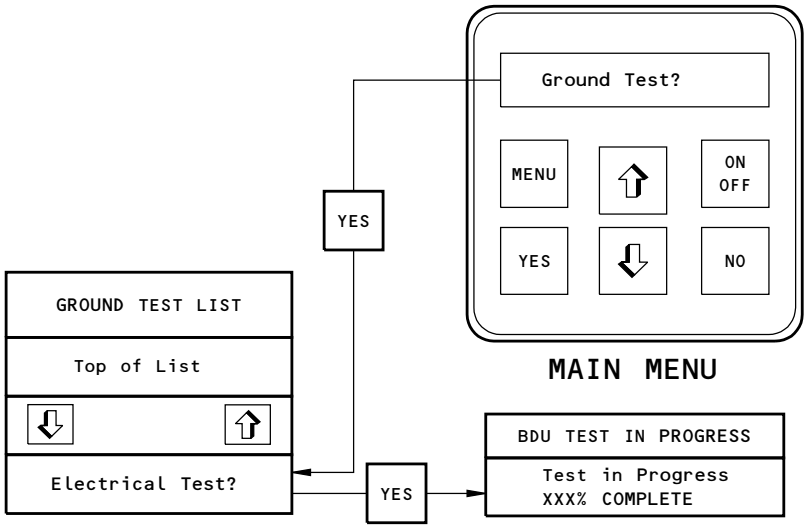
(a) Make sure the NGS BDU turns ON and is in the Main Menu mode.

——— END OF TASK ———



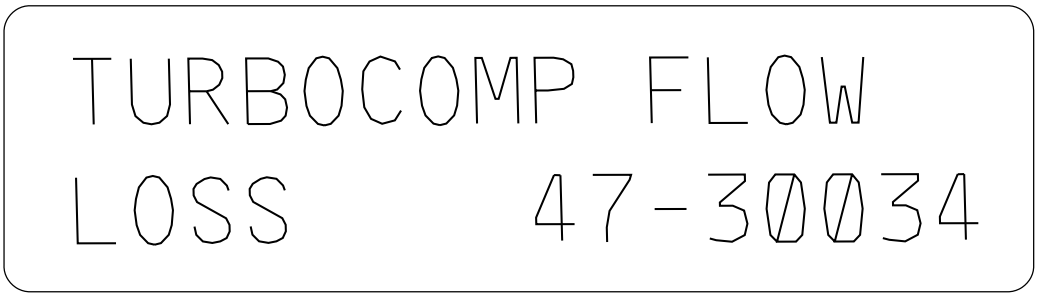
2470814 S0000578100_V1

NGS Display Unit Test Equipment
Figure 301/47-31-00-990-801



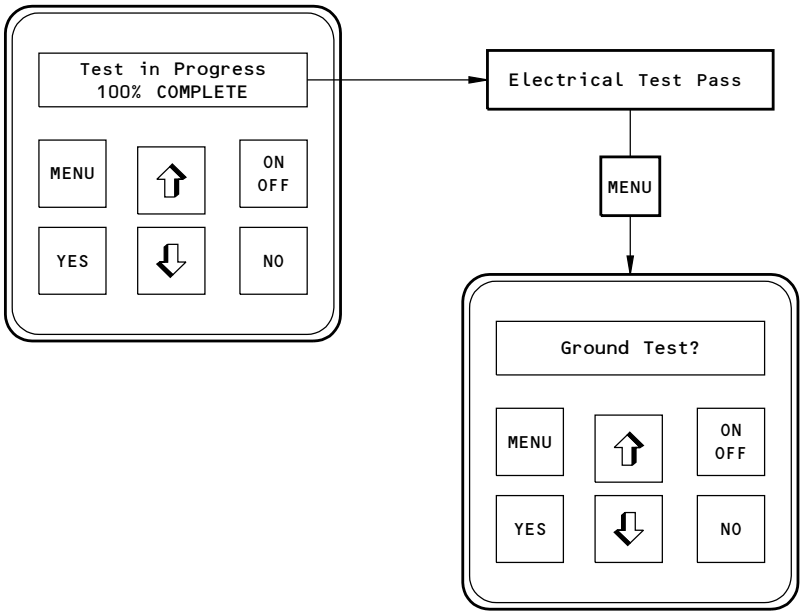
2470816 S0000578101_V1

NGS BDU Ground Test Display
Figure 302/47-31-00-990-802



2470817 S0000578102_V1

NGS BDU Displays Turbocomp Flowloss 47-30034
Figure 303/47-31-00-990-803



2470820 S0000578105_V1

NGS BDU Electrical Test Pass Display
Figure 304/47-31-00-990-804