CHAPTER

47

INERT GAS SYSTEM

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

47-EFFECTIVE PAGES

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YOU FIND A FAULT WITH AN AIRPLANE SYSTEM	These are the possible types of faults: 1. Observed Fault 2. Cabin Fault
USE BITE TO GET MORE INFORMATION	If you did a BITE test already, then you can go directly to the fault isolation procedure for the maintenance message. For details, see Figure 2 →
GO TO THE FAULT ISOLATION TASK IN THE FIM	Use the fault code or description to find the task in the FIM. There is a numerical list of fault codes in each chapter. There are lists of fault descriptions at the front of the FIM. For details, see Figure 3 →
FOLLOW THE STEPS OF THE FAULT ISOLATION TASK	The fault isolation task explains how to find the cause of the fault. When the task says "You corrected the fault" you know that the fault is gone. For details, see Figure 4 →

Basic Fault Isolation Process
Figure 1

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Some airplane systems have built-in test equipment (BITE). IF the system finds a fault when you do a BITE test, it will give you a maintenance message.

A maintenance message can be any of these:

- a code
- a text message
- a light
- an indication.

↓

To find the fault isolation task for a maintenance message, go to the Maintenance Message Index in the chapter for the applicable system.

If you do not know which chapter is the correct one, look at the list at the front of any Maintenance Message Index. For each system or component (LRU) that has BITE, this list gives the chapter number where you can find the Index that you need.

↓

Find the maintenance message for the applicable LRU or system in the Index. Then find the task number on the same line as the maintenance message. Go to the task in the FIM and do the steps of the task (see Figure 4).

Getting Fault Information from BITE
Figure 2

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IF YOU HAVE:	THEN DO THIS TO FIND THE TASK IN THE FIM:
FAULT CODE	1. The first two digits of the fault code are the FIM chapter that you need. Go to the Fault Code Index in that chapter and find the fault code. If the fault code starts with a letter, then go to the Cabin Fault Code Index at the front of the FIM. 2. Find the task number on the same line as the fault code. Go to the task in the FIM and do the steps in the task (see Figure 4).
OBSERVED FAULT DESCRIPTION	1. Go to the Observed Fault List at the front of the FIM and find the best description for the fault. 2. Find the task number on the same line as the fault description. Go to the task in the FIM and do the steps of the task (see Figure 4).
CABIN FAULT DESCRIPTION	1. Go to the Cabin Fault List at the front of the FIM and find the best description for the fault. 2. Find the task number on the same line as the fault description. Go to the task in the FIM and do the steps of the task (see Figure 4).
MAINTENANCE MESSAGE (FROM BITE)	1. Go to the Maintenance Message Index in the chapter for the LRU (the front of each Index gives you the chapter number for all LRUs). Find the maintenance message in the Index. 2. Find the task number on the same line as the maintenance message. Go to the task in the FIM and do the steps in the task (see Figure 4).

Finding the Fault Isolation Task in the FIM
Figure 3

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ASSUMED CONDITIONS AT START OF TASK

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

POSSIBLE CAUSES

- The list of possible causes has the most likely cause first and the least likely cause last.
- You can use the maintenance records of your airline to determine if the fault occurred before. Compare the list of possible causes to the past maintenance actions. This will help prevent repetition of the same maintenance actions.

INITIAL EVALUATION PARAGRAPH

- The primary purpose of the Initial Evaluation paragraph at the start of the task is to help you find out if 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 maintenance action to take. Then monitor the airplane to see if the fault happens again on subsequent flights.
- The Initial Evaluation paragraph can also help you find out which Fault Isolation Procedure to use to isolate and correct the fault.

FAULT ISOLATION STEPS

- Do the steps of the task in the specified order. The "If ... then" statements that you see will guide you along the correct path.
- When you are at the endpoint of the path, the step says "...you corrected the fault." Complete the step and exit the procedure.

Doing the Fault Isolation Task
Figure 4

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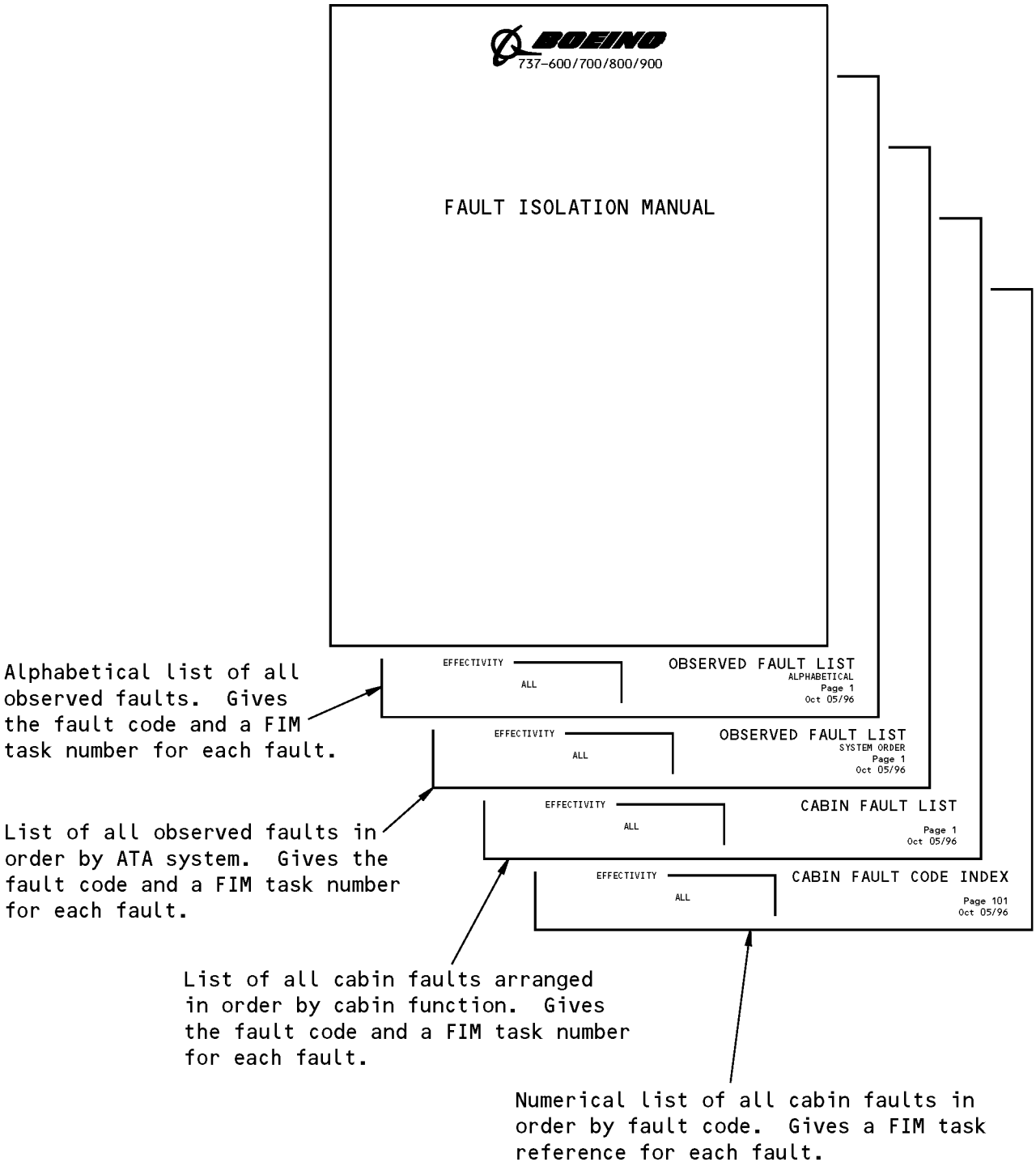

Subjects at Front of FIM
Figure 5

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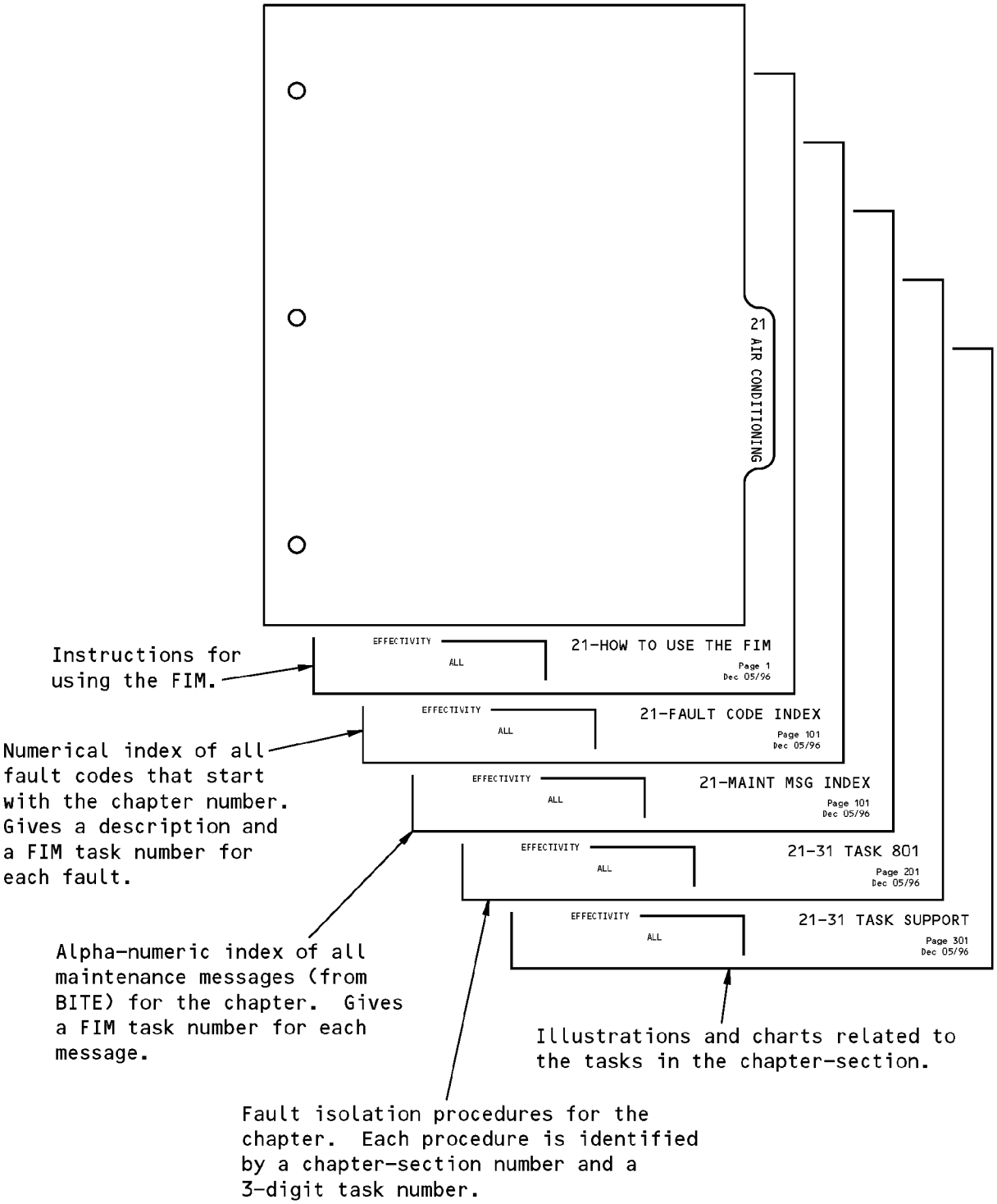

Subjects in Each FIM Chapter
Figure 6

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836. NGS BITE — Procedure

A. General

(1) The ASM performance is measured by the purity of the Nitrogen Enriched Air (NEA) delivered to the center tank. To do a test of the purity of the NEA, it is necessary to do a check of the NGS operational temperature, pressure and the oxygen percentage in the NEA stream. The Nitrogen Generation System (NGS) temperature and pressure measurements are calculated by the NGS controller and shown on the BITE Display Unit (BDU).

(2) To do a test of the oxygen percentage, (AMM TASK 47-00-00-720-801), an oxygen analyzer, COM-7456, is connected to the GSE test port on the NEADS line. The percent oxygen (shown on the oxygen analyzer) and NGS inlet pressure (shown on the BDU) are plotted on a go-no-go graph (Figure 201).

(3) You do the NGS BITE test from the BDU found in the forward air conditioning area.

(4) The NGS BITE procedure uses these functions from the GROUND TESTS menu

(a) ELECTRICAL TEST?

(b) SYSTEM TEST?

(5) ELECTRICAL TEST

(a) The BDU ELECTRICAL TEST? is a manually initiated test done by the NGS controller to test the controller valve drivers (on and off conditions), sensor interfaces, sensor open/short conditions, solenoid or torque motor open/short conditions and airplane discrete inputs. The electrical test can be done with the NGS system in a pressurized or non-pressurized condition. The electrical test opens and closes the NGS shutoff and overtemperature shutoff valves in a timed sequence to stop the pressurization of the NGS system.

(b) The electrical test displays any faults which are currently present in the BDU system.

(6) SYSTEM TEST

(a) The BDU SYSTEM TEST? is a manually initiated test done by the NGS controller when the NGS system is pressurized. To do the system test, it is necessary to pressurize the NGS with bleed air pressure and operate the left air conditioning pack. The system test is a timed sequence test that does a check of the open and closed position of all of the electrically controlled valves.

(b) The system tests displays any faults which are currently present in the BDU system.

B. NGS BITE Procedure

(1) Do these steps to do the BDU electrical test:

(a) Make sure that the BDU is in the main menu mode.

(b) The BDU will show one of these functions:

NOTE: If the BDU does not show one of these functions, then push the MENU button until one of the following menu item shows.

1) EXISTING FAULTS?

2) FAULT HISTORY?

3) GROUND TESTS?

4) OTHER FUNCTIONS?

(c) Push the up or down arrow until the BDU shows GROUND TESTS?

1) Push the YES button on the BDU.

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(d) Make sure the BDU display shows ELECTRICAL TEST?.

NOTE: If the BDU does not show ''ELECTRICAL TEST?'', push the up or down arrow until ''ELECTRICAL TEST?'' shows.

(e) Push the YES button on the BDU to start the electrical test.

(f) The BITE test will start.

NOTE: TEST IN PROGRESS XXX% COMPLETE will show on the display during the test.

The electrical test does an IBIT check of the operability indicator lights at 40 to 50 seconds after the test starts. You must witness that the 3 colored lights come on in this sequence:

Light Color	System Indication	Time Light is On
Blue	Degraded Temporaily Serviceable	12 seconds
Green	Operational	15 seconds
Amber	Inoperative - Unserviceable	21 seconds

(g) Make sure that the BITE Display Unit shows ELECTRICAL TEST PASS at the end of the test.

1) Make sure that the green OPERATIONAL light on the operability indicator is on.

(h) If the test fails, look at the BDU test results for the list of fault messages.

(2) Do these steps to do the BDU system test:

(a) Make sure the BDU display shows SYSTEM TEST?.

NOTE: If the BDU does not show ''SYSTEM TEST?'', push the up or down arrow until ''SYSTEM TEST?'' shows.

(b) Push the YES button on the BDU to start the system test.

(c) The BITE test will start.

NOTE: TEST IN PROGRESS XXX% COMPLETE will show on the display during the test.

(d) Wait until the test is complete.

NOTE: The test will take two to three minutes.

(e) If the test is satisfactory, ''SYSTEM TEST PASS'' shows on the display.

(f) If the test fails, look at the BDU test results for the list of fault messages.

(3) Refer to the NGS BITE Fault Message List that follows to find the fault isolation task for the applicable maintenance message.

NGS BITE Fault Message List

FAULT MESSAGE	MAINTENANCE MESSAGE	GO TO FIM TASK
47–30001	NGS CONTROLLER	47–31 TASK 802
47–30002	NGS CONTROLLER INOP	47–31 TASK 803
47–30010	NGS BLD PRESS SENSOR	47–31 TASK 804
47–30011	NGS TEMP SENSOR ELEC	47–31 TASK 805
47–30012	NGS TEMP SENSOR DRIFT	47–31 TASK 806
47–30013	DP SENSOR HI ELEC	47–31 TASK 807

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(Continued)

FAULT MESSAGE	MAINTENANCE MESSAGE	GO TO FIM TASK
47–30014	DP SENSOR HI DRIFT	47–31 TASK 808
47–30017	NGS ALT SENSOR ELEC	47–31 TASK 809
47–30018	BLD PRESS SENSOR DRIFT	47–31 TASK 811
47–30019	NGS ALT SENSOR DRIFT	47–31 TASK 810
47–30020	NGSSOV ELEC FAIL	47–31 TASK 812
47–30021	NGSSOV FAIL OPEN	47–31 TASK 813
47–30023	NGSSOV / OTSOV / HFV CLOSED	47–31 TASK 814
47–30024	OTSOV ELEC FAIL	47–31 TASK 815
47–30025	OTSOV FAIL OPEN	47–31 TASK 816
47–30026	NGSRAV ELEC FAIL	47–31 TASK 817
47–30027	NGSRAV FAIL OPEN	47–31 TASK 818
47–30028	NGSRAV FAIL CL/HX BLKD	47–31 TASK 819
47–30029	FILTER BLOCKED	47–31 TASK 820
47–30030	HFV ELEC FAIL	47–31 TASK 821
47–30031	HFV FAIL CLOSED	47–31 TASK 837
47–30032	HFV FAIL OPEN	47–31 TASK 823
47–30040	WOW SIG FAIL IN AIR	47–31 TASK 824
47–30041	WOW SIG FAIL ON GROUND	47–31 TASK 825
47–30042	FWD CGO FIRE SIG FAIL ON	47–31 TASK 826
47–30043	MN CGO FIRE SIG FAIL ON	47–31 TASK 827
47-30044	AFT CGO FIRE SIG FAIL ON	47–31 TASK 828
47–30045	FD SMK EVAC SIG FAIL ON	47–31 TASK 829
47–30050	ENG1 SIG FAIL	47–31 TASK 830
47–30051	ENG2 SIG FAIL	47–31 TASK 831
47–30054	PACK SIG FAIL OFF	47–31 TASK 832
47–30056	AIRCRAFT ID INVALID	47–31 TASK 833
47–30059	REFUEL SIG1 FAIL OPEN	47–31 TASK 834
47–30061	FLAPS SIG FAIL	47–31 TASK 835
47–30062	NGS OXYGEN SENS FAIL	47-31 TASK 838
47–30063	NGS ASM FAIL	47-31 TASK 839

END OF TASK

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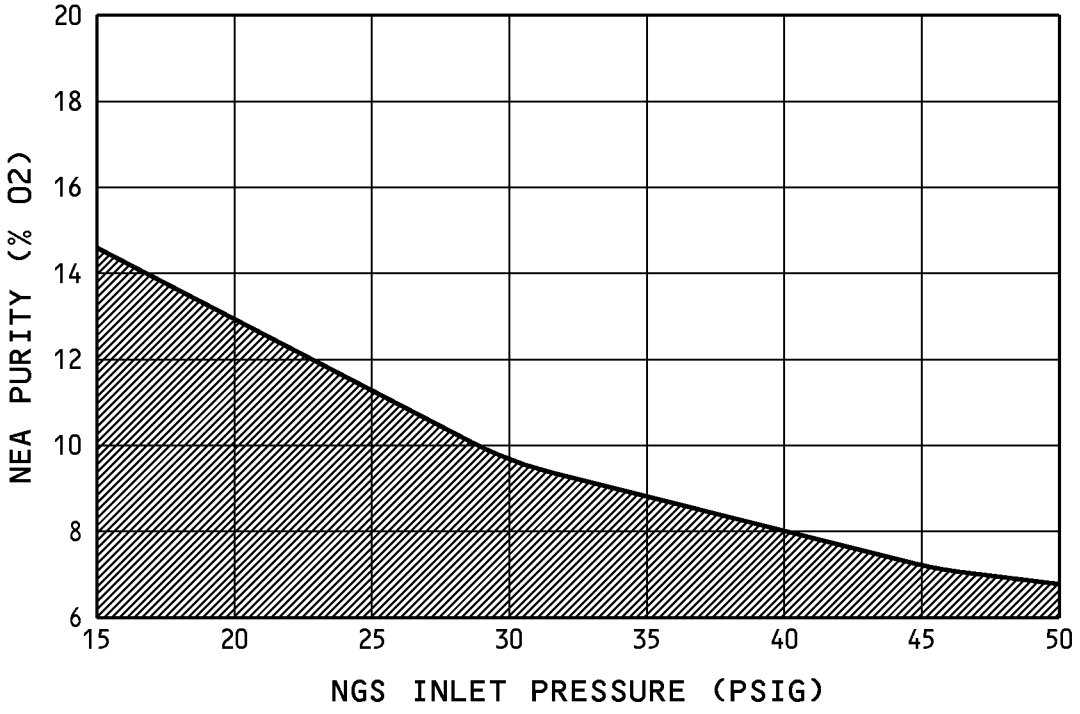

GSE GO-NO-GO CRITERIA AT LOW FLOW

LEGEND:
NEA PURITY SATISFACTORY (GO ZONE)
NEA PURITY NOT SATISFACTORY (NO-GO ZONE)

1495949 S0000271687_V1

GSE Go-No-Go Criteria
Figure 201 (Sheet 1 of 2)/ 47-31-00-990-801

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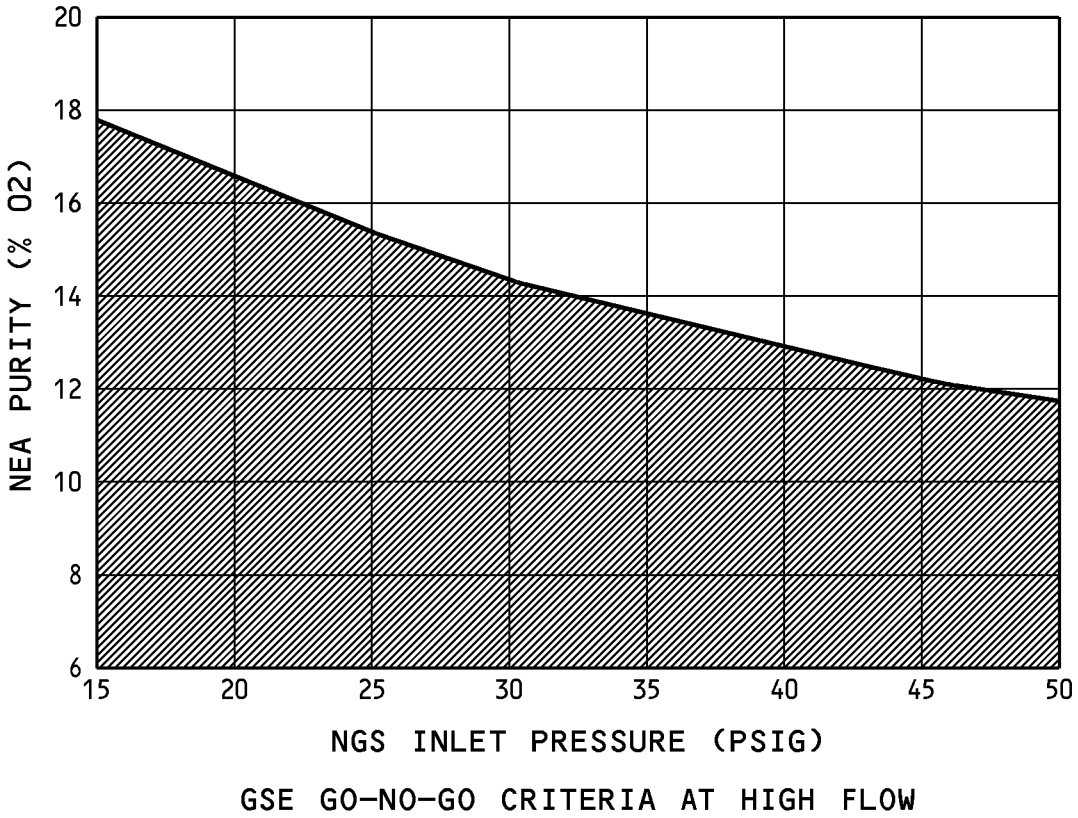

LEGEND:
NEA PURITY SATISFACTORY (GO ZONE)
NEA PURITY NOT SATISFACTORY (NO-GO ZONE)

1495996 S0000271691_V1

GSE Go-No-Go Criteria
Figure 201 (Sheet 2 of 2)/ 47-31-00-990-801

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802. NGS BITE Message NGS CONTROLLER - Fault Isolation

A. Description

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

(2) The operability indicator shows NGS DEGRADED (blue light). The NGS is operating below normal.

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

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

(a) Ram air valve driver - temperature out of range, value cannot be calulated

(b) Flow bypass valve driver fault

(c) High-flow valve driver fault

(d) NGS bleed pressure sensor interface fault

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

(f) NGS altitude sensor interface fault

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

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

(i) Non-volatile memory (NVM) fault

(j) BDU power supply driver fault

(k) Test mode fault

(l) Mux 4, 5, 6, 7, or 8 fault

(5) To find more data about this fault message, do this task: AMM TASK 47-31-02-740-803.

B. Possible Causes

(1) NGS Controller (M02559).

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47–30–01

WDM 47–30–11

E. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

(a) If the 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.

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F. Fault Isolation Procedure

(1) Replace the NGS controller, M02559 (AMM TASK 47-31-01-000-801, AMM TASK 47-31-01-400-801).

(2) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

G. Repair Confirmation

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

END OF TASK

803. NGS BITE Message NGS CONTROLLER INOP - Fault Isolation

A. Description

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

(2) The operability indicator shows INOPERATIVE (amber light). The NGS is offline.

(3) 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) NGS controller critical fault - affects the reliability of the CPU. NGS controller software incompatibility is a critical fault.

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

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

a) The NGS controller software will be disabled

b) The NGS controller will set all outputs to the OFF (fail-safe) condition

c) Communication between the NGS controller and BDU may be disabled.

3) 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.

B. Possible Causes

(1) NGS Controller (M02559) (SSM 47-30-11)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47–30–01

WDM 47–30–11

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E. Initial Evaluation

(1) Open and close these circuit breakers:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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

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

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

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

(a) NGS CONTROLLER INOP 47-30002 shows.

(b) No BDU menu items show.

F. Fault Isolation Procedure

(1) Replace the NGS controller, M02559 (AMM PAGEBLOCK 47-31-01/401).

(2) Open and close these circuit breakers:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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

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

G. Repair Confirmation

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

END OF TASK

804. NGS BITE Message NGS BLD PRESS SENSOR - Fault Isolation

A. Description

(1) This task is for fault message 47-30010.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) NGS BLD PRESS SENSOR shows on the display when the NGS controller finds an open or short circuit condition for the NGS pressure sensor (M02565).

(4) 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) NGS Pressure Sensor (M02565)

(2) NGS wiring

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(3) If the fault message, NGS BLD PRESS SENSOR 47-30010 shows, do the Fault Isolation Procedure.

F. Fault Isolation Procedure

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(2) Disconnect the NGS Pressure Sensor (M02565), connector D13830, 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, D13830.

4) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

6) If the fault message, NGS BLD PRESS SENSOR 47-30010 shows, then continue.

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

(3) Replace the NGS Pressure Sensor (M02565).

(a) Do this task: NGS Pressure Sensor Removal, AMM TASK 47-43-04-000-801.

(b) Do this task: NGS Pressure Sensor Installation, AMM TASK 47-43-04-400-801.

(4) Do this Task: NGS BITE — Procedure, 47-31 TASK 836.

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

(b) If the fault message, NGS BLD PRESS SENSOR 47-30010 shows, then continue.

(5) Disconnect the connector D13830 on the NGS pressure sensor.

(6) Disconnect the connector D13804 on the NGS controller.

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(7) Do a continuity check from the NGS pressure Sensor connector D13830, and the NGS controller connector D13804 (WDM 47-30-11).

D13830		D13804
pin 1	- - - - - - - - - - - - - - - - - - - -	pin 26
pin 3	- - - - - - - - - - - - - - - - - - - -	pin 25

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

(9) Connect the connectors: D13830 and D13804.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

——————— END OF TASK ———————

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

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) NGS TEMP SENSOR ELEC shows when the controller finds an open or short circuit condition for the NGS temperature sensor (T03020).

(4) 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) NGS Temperature Sensor (T03020)

(2) NGS Wiring

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

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

F. Fault Isolation Procedure

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(2) Disconnect the NGS temperature sensor (T03020), connector D13828, 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, D13828.

4) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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 (T03020).

(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.

(4) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

(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 D13828 on the NGS temperature sensor.

(6) Disconnect the connector D13804 on the NGS controller.

(7) Do a continuity check from the NGS temperature sensor connector D13828, and the NGS controller connector D13804 (WDM 47-30-11).

D13828		**D13804**
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 D13828 and D13804.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

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

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) 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.

(4) 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) NGS Temperature Sensor (T03020)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836

(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.

F. Fault Isolation Procedure

(1) Replace the temperature sensor, T03020.

(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.

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

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

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) DP SENSOR HI ELEC shows when the NGS controller finds an open or short circuit condition for the high-flow differential pressure sensor (M02564).

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

B. Possible Causes

(1) High-flow DP sensor (M02564)

(2) NGS Wiring

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

(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.

F. Fault Isolation Procedure

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(2) Disconnect the high-flow differential pressure sensor (M02564), connector D13824, 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, D13824.

4) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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.

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

(3) Replace the high-flow DP sensor (M02564).

(a) Do this task: High Flow Valve Differential Pressure Sensor Removal, AMM TASK 47-42-02-020-801.

(b) Do this task: High Flow Valve Differential Pressure Sensor Installation, AMM TASK 47-42-02-400-801.

(4) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

(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 D13824 on the high-flow DP sensor.

(6) Disconnect the connector D13804 on the NGS controller.

(7) Do a continuity check from the high-flow DP sensor connector D13824, and the NGS controller connector D13804 (WDM 47-30-11).

D13824		D13804
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 D13824 and D13804.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

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

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) 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.

(4) 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) High-flow DP Sensor (M02564)

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

(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.

F. Fault Isolation Procedure

(1) Replace the High-flow DP Sensor, M02564.

(a) Do this task: High Flow Valve Differential Pressure Sensor Removal, AMM TASK 47-42-02-020-801.

(b) Do this task: High Flow Valve Differential Pressure Sensor Installation, AMM TASK 47-42-02-400-801.

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

809. NGS BITE Message NGS ALT SENSOR ELEC - Fault Isolation

A. Description

(1) This task is for fault message 47-30017.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) NGS ALT SENSOR ELEC shows on the display when the NGS controller finds an open or a short circuit condition with the NGS altitude sensor.

(4) 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) NGS Altitude Sensor (M02562)

(2) NGS Wiring

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(3) If the fault message, NGS ALT SENSOR ELEC 47-30017 shows on the display, do the Fault Isolation Procedure.

F. Fault Isolation Procedure

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(2) Disconnect the NGS altitude sensor (M02562), connector D13818, 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, D13818.

4) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

6) If the fault message, NGS BLD PRESS SENSOR 47-30017 shows, then continue.

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

(3) Replace the NGS altitude sensor, M02562.

(a) Do this task: Altitude Sensor Removal, AMM TASK 47-42-01-000-801.

(b) Do this task: Altitude Sensor Installation, AMM TASK 47-42-01-400-801.

(4) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(b) If the fault message, NGS ALT SENSOR ELEC 47-30017 shows, then continue.

(5) Disconnect the connector D13818 on the NGS altitude sensor.

(6) Disconnect the connector D13804 on the NGS controller.

(7) Do a continuity check from the NGS altitude sensor connector D13818, to the NGS controller connector D13804 (WDM 47-30-11).

D13818		**D13804**
pin 1	- - - - - - - - - - - - - - - - - - - -	pin 11
pin 3	- - - - - - - - - - - - - - - - - - - -	pin 24

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

(9) Connect the connectors D13818 and D13804.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

———————— END OF TASK ————————

810. NGS BITE Message NGS ALT SENSOR DRIFT - Fault Isolation

A. Description

(1) This task is for maintenance message 47-30019.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) NGS ALT SENSOR DRIFT shows shows when the NGS controller finds an altitude sensor range fault. If the fault occurs in flight, the system defaults to the low flow mode.

(4) The fault confirmation time for this fault exceeds both the electrical test time and the system test time. The NGS ALT SENSOR DRIFT fault will never be validated in IBIT. The result is that the fault message will be cleared by selecting either IBIT. The fault is redetected in CBIT if the fault is still present.

(5) 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) NGS Altitude Sensor (M02562)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(a) Make sure that EXISTING FAULTS? shows on the display the BDU is in the main menu mode.

1) If EXISTING FAULTS? does not show, then push the MENU button several times until EXISTING FAULTS? shows on the display.

(b) If NGS ALT SENSOR DRIFT 47-30019 shows on the display, then do the Fault Isolation Procedure.

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F. Fault Isolation Procedure

(1) 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 MENU button or 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 MENU button or 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 altitude.

(2) Go to the flight compartment.

(a) Make sure that the barometric altimeter has the correct altimeter setting in the baro window.

1) Make a note of the barometric altitude.

(3) Compare the barometric altitude with the altitude shown on the BDU.

(a) If the altitude readings differ by 100 ft (30 m) or more, then do these tasks:

1) Altitude Sensor Removal, AMM TASK 47-42-01-000-801.

2) Altitude Sensor Installation, AMM TASK 47-42-01-400-801.

CAUTION: TO STOP THE GROUND TEST, MAKE SURE THAT YOU PUSH THE MENU BUTTON ON THE BDU FOR THE NITROGEN GENERATION SYSTEM. IF YOU DO NOT PUSH THE MENU BUTTON, THEN THE NGS SHUTOFF VALVE WILL STAY IN THE INCORRECT OPEN POSITION.

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

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

811. NGS BITE Message BLD PRESS SENSOR DRIFT - Fault Isolation

A. Description

(1) This task is for maintenance message 47-30018.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) BLD PRESS SENSOR DRIFT shows when NGS bleed pressure exceeded 67 psig (462 kPa) for more than 60 seconds during descent or cruising altitude. The fault message can show if the NGS bleed pressure is more than the overpressure limit for 60 seconds during the BDU system test.

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

B. Possible Causes

(1) Bleed air system over-pressurization (ATA 36)

(2) NGS pressure sensor (M02565)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) ATA 36

(2) SSM 47-30-11

(3) WDM 47-30-11

E. Initial Evaluation

(1) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(3) If the fault message, BLD PRESS SENSOR DRIFT 47-30018 shows on the display, then do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Look for over-pressure condition(s) in the bleed air system (ATA 36).

(a) 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.

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(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 NGS pressure sensor, M02565 (AMM PAGEBLOCK 47-43-04/401).

CAUTION: TO STOP THE GROUND TEST, MAKE SURE THAT YOU PUSH THE MENU BUTTON ON THE BDU FOR THE NITROGEN GENERATION SYSTEM. IF YOU DO NOT PUSH THE MENU BUTTON, THEN THE NGS SHUTOFF VALVE WILL STAY IN THE INCORRECT OPEN POSITION.

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

G. Repair Confirmation

(1) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

812. NGS BITE Message NGSSOV ELEC FAIL - Fault Isolation

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

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

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

B. Possible Causes

(1) NGS Shutoff Valve (V00172)

(2) NGS Wiring

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(b) If the fault message, NGS ALT SENSOR ELEC 47-30017 shows on the display, do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Replace the NGS shutoff valve, V00172 (AMM PAGEBLOCK 47-32-01/401).

(2) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(b) If the fault message, NGSSOV ELEC FAIL 47-30020 shows, then continue.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(4) Disconnect the NGS shutoff valve (V00172), connector D13810, 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, D13810.

4) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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.

(5) Disconnect the connector D13810 on the NGS shutoff valve.

(6) Disconnect the connector D13810 on the NGS shutoff valve.

(7) Do a check for 28 VDC between pin A and pin D of connector DV00172.

(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 DV00172 to pin 1 of the NITROGEN GENERATION CONTROL circuit breaker, C01657 (P18–3 CAPT Electrical System Panel).

2) Repair the problems that you find.

3) If the problem continues, replace the NITROGEN GENERATION CONTROL circuit breaker C01657.

(8) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

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

(10) 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:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL

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Row	Col	Number	Name
E	15	C01680	NGS ALT PWR

(b) Disconnect connector D13806 from the NGS controller M02559.

(c) Do a check of the wire from connector D13806 pin 31, to connector DV00172, pin B.

(d) Repair the problems that you find.

(e) Connect connectors D13806 and DV00172.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

813. NGS BITE Message NGSSOV FAIL OPEN - Fault Isolation

A. Description

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

(2) The operability indicator shows INOPERATIVE (amber light). The NGS is offline.

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

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

B. Possible Causes

(1) NGS Shutoff Valve (V00172)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(b) If the fault message, NGSSOV FAIL OPEN 47-30021 shows, do the Fault Isolation Procedure.

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F. Fault Isolation Procedure

(1) Replace the NGS shutoff valve, V00172 AMM PAGEBLOCK 47-32-01/401.

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

814. NGS BITE Message NGSSOV / OTSOV / HFV CLOSED - Fault Isolation

A. Description

(1) This task is for maintenance message 47-30023.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

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

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

B. Possible Causes

(1) NGS shutoff valve (V00172)

(2) Overtemperature shutoff valve (V00175)

(3) High flow valve (V00174).

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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 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 / OTSOV / HFV CLOSED shows on the display, then do the fault isolation procedure.

F. Fault Isolation Procedure

(1) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836.

NOTE: The system test will run for 4 minutes.

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

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

(b) If the NGS shutoff valve does not open during the system test, then replace the NGS shutoff valve (AMM PAGEBLOCK 47-32-01/401).

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

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

(e) If the fault message, NGSSOV / OTSOV / HFV CLOSED 47-30023 shows on the display, then continue with the fault isolation.

(2) Replace the overtemperature shutoff valve (AMM PAGEBLOCK 47-11-04/401).

(3) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836..

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

(b) If NGSSOV / OTSOV / HFV CLOSED shows on the display, then continue with the fault isolation.

(4) Replace the high flow valve (AMM PAGEBLOCK 47-11-02/401).

G. Repair Confirmation

(1) Do thsystem test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

815. NGS BITE Message OTSOV ELEC FAIL - Fault Isolation

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) 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.

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

B. Possible Causes

(1) NGS Thermal Switch (S01129)

(2) OTSOV (V00175)

(3) NGS Wiring

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

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(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(b) If the fault message, OTSOV ELEC FAIL 47-30024 shows, do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Replace the NGS thermal switch, S01129 (AMM PAGEBLOCK 47-43-02/401).

(2) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836.

(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, V00175 (AMM PAGEBLOCK 47-11-04/401).

(4) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836.

(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) Disconnect the connector D13826 from the OTSOV, V00175.

(6) Measure the voltage from pin A to pin B, connector D13826.

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

1) Disconnect the connector D13816 from the NGS thermal switch, S01129.

2) Measure the voltage from pin A to pin C, connector D13816.

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

<1> Do a continuity check from the NGS thermal switch, S01129, connector D13816, pin B to the OTSOV, V00175, connector D13826, 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 D13816 and D13826.

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

<1> Disconnect the connector D40830P from the NITROGEN GENERATION CONTROL circuit breaker, C01657.

<2> Do a continuity check from the NGS thermal switch, S01129, connector D13816, pin A to the NITROGEN GENERATION CONTROL circuit breaker, C01657, connector D40830P, pin 13 (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, C01657.

<5> Connect the connectors: D13816, D13826, and D40830P.

(7) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836.

(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 D13826, then continue.

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(8) Open these circuit breakers:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(9) Disconnect the connector D13806 from the NGS controller.

(10) Do a continuity check from the NGSSOV, V00175, connector D13826, pin C to the NGS controller, M02559, connector D13806, pin 30 (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 D13806 and D13826.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

——————— END OF TASK ———————

816. NGS BITE Message OTSOV FAIL OPEN - Fault Isolation

A. Description

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

(2) The operability indicator shows INOPERATIVE (amber light). The NGS is offline.

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

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

B. Possible Causes

(1) Overtemperature Shutoff Valve - OTSOV (V00175)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

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E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(b) If the fault message, OTSOV FAIL OPEN 47-30025 shows, do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Replace the overtemperature shutoff valve, V00715 (AMM PAGEBLOCK 47-11-04/401).

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

——————— END OF TASK ———————

817. NGS BITE Message NGSRAV ELEC FAIL - Fault Isolation

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) NGSRAV ELEC FAIL shows when the NGS controller finds an open or short circuit condition for the NGS ram air valve.

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

B. Possible Causes

(1) NGS ram air valve (V00173)

(2) NGS wiring

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(b) If the fault message NGSRAV ELEC FAIL 47-30026 shows on the display, then do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Replace the NGS ram air valve (AMM PAGEBLOCK 47-32-05/401).

(2) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

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

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(4) Disconnect the NGS ram air valve (V00173), connector D13812, 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.

(5) Disconnect connector D13806 from the NGS controller (M02559).

(6) Do a continuity check from the NGS ram air valve connector D13812, to the NGS controller connector D13806 (WDM 47-30-11).

D13812		**D13806**
pin B	- - - - - - - - - - - - - - - - - - - -	pin 34
pin A	- - - - - - - - - - - - - - - - - - - -	pin 35

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

(8) Connect the connectors D13806 and D13826.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

818. NGS BITE Message NGSRAV FAIL OPEN - Fault Isolation

A. Description

(1) This task is for fault 47-30027.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) The NGS controller detected that the bleed air temperature went below 110°F (43°C) and the bleed pressure was more than 15 psig (103 kPa). If these conditions last for more than 20 minutes during flight, the NGSRAV FAIL OPEN fault message is set.

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

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B. Possible Causes

(1) Air leak in the RAV muscle air line.

(2) NGS ram air valve (V00173).

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(3) If the fault message, NGSRAV FAIL OPEN 47-30027 shows on the display, then do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Do this task: Leak Check of the Nitrogen Generation System, AMM TASK 47-00-00-790-801.

(a) Repair the leaks that you find.

(b) If you do not find an air leak in the NGS ram air valve muscle air line, then continue.

(2) Replace the NGS ram air valve, V00173 (AMM PAGEBLOCK 47-32-05/401).

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

819. NGS BITE Message NGSRAV FAIL CL/HX BLKD - Fault Isolation

A. Description

(1) This task is for fault 47-30028.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) NGSRAV FAIL CL/HX BLKD shows on the display when there is an overtemperature shutdown.

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

B. Possible Causes

(1) NGS Ram Air Valve (V00173) failure to close.

(2) The heat exchanger is blocked.

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

(a) Make sure that the BDU is in the main menu mode.

(3) Push the MENU button until one of these functions shows on the display:

(a) EXISTING FAULTS?

(b) FAULT HISTORY?

(c) GROUND TEST?

(d) OTHER FUNCTIONS?

(4) Push the up/down arrow until EXISTING FAULTS? shows on the display.

(a) Push the YES button.

(5) If NGSRAV FAIL CL/HX BLKD 47-30028 shows on the display, then do the fault isolation procedure.

F. Fault Isolation Procedure

(1) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836.

(a) Have a second person examine the NGS Ram Air Valve during the system test.

(b) If the NGS Ram Air Valve does not open, then do this task: RAM AIR VALVE - REMOVAL/INSTALLATION, AMM 47-32-05/401.

(c) If the NGS Ram Air Valve does open, then do this task: HEAT EXCHANGER - REMOVAL/INSTALLATION, AMM 47-32-03/401.

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

820. NGS BITE Message FILTER BLOCKED - Fault Isolation

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) 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:

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(a) The filter differential pressure switch senses high pressure

(b) The NGS system is on

(c) The airplane is in the climb condition

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

B. Possible Causes

(1) Filter DP switch (M02561)

(2) NGS filter

(3) Airplane wiring

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836

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

(b) If the fault message, FILTER BLOCKED 47-30029 shows on the display, then do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Replace the filter DP switch, M02561 (AMM PAGEBLOCK 47-43-01/401).

(2) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

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

(3) Replace the NGS filter (AMM PAGEBLOCK 47-32-04/401).

(4) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

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

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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(6) Disconnect the filter DP switch (M02561), connector D13814, 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 connector D13806 from the NGS controller, M02559.

(8) Do a continuity check from the filter DP switch connector D13814 to the NGS controller connector D13806 (WDM 47-30-11).

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

D13814		D13806
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 D13806 and D13826.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do the system test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

(2) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

821. NGS BITE Message HFV ELEC FAIL - Fault Isolation

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) 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.

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

B. Possible Causes

(1) High-flow valve (V00174)

(2) Airplane wiring

(3) Circuit breaker - Nitrogen Generation Control (C01657).

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47–30–01

(2) WDM 47–30–11.

E. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

(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.

F. Fault Isolation Procedure

(1) Replace the high-flow valve (AMM PAGEBLOCK 47-11-02/401).

(2) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

(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) Disconnect the electrical connector D13820, from the high-flow valve V00174.

(4) Do a check for 28 VDC between pin 1 and pin 3 of connector D13820.

(a) If there is not 28 VDC at pin 1, then do these steps:

1) Do a check for an open circuit from pin 1 of connector D13820, to pin 1 of the NITROGEN GENERATION CONTROL circuit breaker, C01657 (P18–3 CAPT electrical System Panel).

2) Repair the problems that you find.

3) If the problem continues, replace the NITROGEN GENERATION CONTROL circuit breaker C01657.

(b) Connect the connector D13820.

(5) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

(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.

1) If there is 28 VDC at pin 1, then continue with the fault isolation.

(6) 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.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(b) Disconnect connector D13806 from the NGS controller M02559.

(c) Do a check of the wire from connector D13806 pin 14, to connector D13820 pin 2.

(d) Repair the problems that you find.

(e) Connect the connectors D13806 and D13820.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

——————— END OF TASK ———————

837. NGS BITE Message HFV FAIL CLOSED - Fault Isolation

A. Description

(1) This task is for fault 47–30031.

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

(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) High flow valve (V00174)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

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(b) If the fault message HFV FAIL CLOSED 47–30031 shows on the display, do the Fault Isolation Procedure

F. Fault Isolation Procedure

(1) Replace the high flow valve (AMM PAGEBLOCK 47-11-02/401).

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

823. NGS BITE Message HFV FAIL OPEN - Fault Isolation

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

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

(4) 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) High-flow valve (V00174)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do the system test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

(b) If the fault message, OTSOV FAIL OPEN 47-30025 shows, do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Replace the high-flow valve, V00174 (AMM PAGEBLOCK 47-11-02/401).

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

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

A. Description

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

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) 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 condition for more than 10 seconds.

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

B. Possible Causes

(1) Primary air/ground relay system

(2) Airplane wiring

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 32–09–11

(2) SSM 32–09–12

(3) WDM 32–09–11

(4) WDM 32–09–12

(5) SSM 47-30-01

(6) WDM 47-30-11.

E. Initial Evaluation

(1) Make sure that the airplane is in the ground mode (AMM TASK 32-09-00-860-802).

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

(a) The BDU will show IN AIR for one second then go off.

F. Fault Isolation Procedure

(1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.

NOTE: Look for maintenance message 32–06001 AIR/GND R584 FLT on the PSEU.

(2) If the maintenance message 32–06001 AIR/GND R584 FLT shows on the PSEU display, then do these steps:

(a) Do the applicable fault isolation procedure(s) for this fault.

(b) Make sure that the messages related to the AIR / GROUND relay system are corrected.

(3) After you repair the problem, do these steps to make sure that you repaired the problem:.

(a) Make sure that the airplane is in the ground mode (AMM TASK 32-09-00-860-802).

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

1) If the BDU menu is available, then you repaired the problem.

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2) If the BDU shows IN AIR for one second then goes off, continue with the fault isolation procedure.

(4) Do these steps to do a check for an open circuit between the NGS controller (M02559) and the R584 System 1 AIR/GND relay:

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(b) Disconnect the electrical connector D13806 at the NGS controller (M02559) (WDM 47-30-11).

(c) Disconnect the electrical connector D11002 at the AIR/GND relay (R584) in the J22 Panel (WDM 32–09–11).

(d) Do a check of the wiring from connector D13806 pin 12, to connector D11002 pin D3.

(e) Repair the problems that you find.

(f) Connect the connectors D13806 and D11002.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Make sure that the airplane is in the ground mode (AMM TASK 32-09-00-860-802).

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

(a) If the BDU menu is available, then you repaired the problem.

END OF TASK

825. NGS BITE Message WOW SIG FAIL ON GROUND - Fault Isolation

A. Description

(1) This task is for fault message 47-30041.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(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) Primary air/ground relay system

(2) Airplane Wiring.

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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D. Related Data
   (1) SSM 47–30–01
   (2) WDM 47–30–11
   (3) WDM 32–09–11
   (4) WDM 32–09–12
   (5) SSM 47-30-01
   (6) WDM 47-30-11.

E. Initial Evaluation
   (1) Do this task: Prepare to Put the Airplane in the Air Mode, AMM TASK 32-09-00-840-801.
   (2) Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
   (3) Do these steps to navigate to the DIGITAL INPUTS? menu:
      (a) Push the ON/OFF button on the BDU.

         NOTE: The BDU will go off after five minutes of inactivity, so you must restart it.
      (b) 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 I/O MONITOR? shows on the display.
            a) If I/O MONITOR? does not show, push the up or down arrow until I/O MONITOR? shows on the display.
            b) Push the YES button.
         3) Make sure that DIGITAL INPUTS? shows on the display.
            a) If DIGITAL INPUTS? does not show, push the up or down arrow until DIGITAL INPUTS? shows on the display.
            b) Push the YES button.
         4) Push the up or down arrow until WOW: ON GROUND shows on the display. This verifies the BITE fault message.
   (4) Do the fault isolation procedure.

F. Fault Isolation Procedure
   (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.

      NOTE: Look for maintenance message 32–06001 AIR/GND R584 FLT on the PSEU.
   (2) If the maintenance message 32–06001 AIR/GND R584 FLT shows on the PSEU display, then do these steps:
      (a) Do the applicable fault isolation procedure(s) for this fault.
      (b) Make sure that the messages related to the AIR/GND relay system are corrected.
   (3) After you repair the problem, do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

      NOTE: Make sure that the airplane is in the ground mode for ten minutes to reset the air/ground mode signal.

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(4) Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.

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

NOTE: The BDU will go off after five minutes of inactivity. You must restart it.

(a) Move to the DIGITAL INPUTS menu.

1) Push the up or down arrow until the WOW condition shows on the display.

a) If WOW: IN AIR shows on the display, then you repaired the problem.

b) If WOW: ON GROUND shows on the display, then continue the fault isolation.

(6) Do these steps to do a check for a short circuit between the NGS controller (M02559) and the R584 System 1 AIR/GND relay:

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(b) Disconnect the electrical connector D13806 at the NGS controller (WDM 47-30-11).

(c) Disconnect the electrical connector DD11002 at the R584 air AIR/GND relay (WDM 36-23-11).

(d) Do a check of the wire from connector D13806 pin 12, to connector D11002 pin D3.

(e) Repair the problems that you find.

(f) Connect the connectors D13806 and D11002.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) After you repair the problem, do this task:Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

NOTE: Make sure that the airplane is in the ground mode for ten minutes to reset the air/ground mode signal.

(2) Do this task: Prepare to Put the Airplane in the Air Mode, AMM TASK 32-09-00-840-801.

(3) Do these steps to make sure that you repaired the problem:

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

NOTE: The BDU will go off after five minutes of inactivity. You must restart it.

(b) Push the MENU button on the BDU.

1) Move to the DIGITAL INPUT menu.

2) Push the up or down arrow until the WOW condition shows on the display.

a) If WOW: IN AIR shows on the display, then you repaired the problem.

(4) Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

END OF TASK

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826. NGS BITE Message FWD CGO FIRE SIG FAIL ON - Fault Isolation

A. Description

(1) This task is for fault message 47-30042.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) FWD CGO FIRE SIG FAIL ON shows on the display when the NGS controller senses that the forward cargo fire signal is in the incorrect ON state.

(4) 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) Forward cargo fire signal system

(2) Airplane wiring.

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 21–31–23

(2) SSM 26–16–21

(3) SSM 47-30-01

(4) WDM 21–31–23

(5) WDM 26–16–21

(6) WDM 47-30-11

E. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

(b) If FWD CGO FIRE SIG FAIL ON 47-30042 shows on the display, then do the fault isolation procedure.

F. Fault Isolation Procedure

(1) Do this task: Cargo Fire Control Panel BITE Procedure, 26-23 TASK 801.

(a) If the test fails then do the applicable fault isolation procedure: .

(2) Repair the problems that you find.

(a) Make sure that the BITE messages related to the forward cargo fire signal system are corrected.

(3) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

(b) If FWD CGO FIRE SIG FAIL ON 47-30042 shows on the display, then continue the fault isolation procedure.

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(4) Do these steps to check the wiring for a short circuit to ground between the NGS controller and the rate of descent (ROD) 750 cargo fire relay (R904) (SSM 21–31–22):

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(b) Disconnect the electrical connector D13806 at the NGS controller.

(c) Disconnect the electrical connector D13690 at the J20 panel.

(d) Do a check of the wire from connector D13806 pin 3, to connector D13690 pin A1.

(e) Repair the problems that you find.

(f) Connect the connectors D13806 and D13690.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

END OF TASK

827. NGS BITE Message MN CGO FIRE SIG FAIL ON - Fault Isolation

A. Description

(1) This task is for fault 47-30043.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) MN CGO FIRE SIG FAIL ON shows on the display when the NGS controller senses that the main deck cargo fire signal is in the incorrect ON state.

(4) 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) Main deck fire signal system

(2) Airplane wiring

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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D. Related Data

(1) SSM 21–31–23

(2) SSM 26–16–21

(3) SSM 47-30-01

(4) WDM 21–31–23

(5) WDM 26–16–21

(6) WDM 47-30-11

E. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

(b) If MN CGO FIRE SIG FAIL ON 47-30043 shows on the display, then do the fault isolation procedure.

F. Fault Isolation Procedure

(1) Do this task: Cargo Fire Control Panel BITE Procedure, 26-23 TASK 801.

(a) If the test fails, then do the applicable fault isolation procedure.

(2) Repair the problems that you find.

(a) Make sure that the BITE messages related to the forward cargo fire signal system are corrected.

(3) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

(b) If MN CGO FIRE SIG FAIL ON 47-30043 shows on the display, then continue the fault isolation procedure.

(4) Do these steps to check the wiring for a short circuit to ground between the NGS controller and the rate of descent (ROD) 750 cargo fire relay (R904) (SSM 21–31–22):

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(b) Disconnect the electrical connector D13806 at the NGS controller.

(c) Disconnect the electrical connector D13690 at the J20 panel.

(d) Do a check of the wire from connector D13806 pin 8, to connector D13690 pin A1.

(e) Repair the problems that you find.

(f) Connect the connectors D13806 and D13690.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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G. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

—————— END OF TASK ——————

828. NGS BITE Message AFT CGO FIRE SIG FAIL ON - Fault Isolation

A. Description

(1) This task is for fault 47-30044.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) AFT CGO FIRE SIG FAIL ON shows on the display when the NGS controller senses that the aft cargo fire signal is in the incorrect ON state.

(4) 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) Main deck fire signal system

(2) Airplane wiring.

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 21-31-23

(2) SSM 26–16–21

(3) SSM 47-30-01

(4) WDM 21–31–23

(5) WDM 26–16–21

(6) WDM 47-30-11

E. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

(b) If MN CGO FIRE SIG FAIL ON 47-30043 shows on the display, then do the fault isolation procedure.

F. Fault Isolation Procedure

(1) Do this task: Cargo Fire Control Panel BITE Procedure, 26-23 TASK 801.

(a) If the test fails then do the applicable fault isolation procedure: .

(2) Repair the problems that you find.

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(a) Make sure that the BITE messages related to the forward cargo fire signal system are corrected.

(3) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

(b) If FWD CGO FIRE SIG FAIL ON 47-30042 shows on the display, then continue the fault isolation procedure.

(4) Do these steps to check the wiring for a short circuit to ground between the NGS controller and the rate of descent (ROD) 750 cargo fire relay (R904) (SSM 21–31–22):

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(b) Disconnect the electrical connector D13806 at the NGS controller.

(c) Disconnect the electrical connector D13690 at the J20 panel.

(d) Do a check of the wire from connector D13806 pin 27, to connector D13690 pin A1.

(e) Repair the problems that you find.

(f) Connect the connectors D13806 and D13690.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

END OF TASK

829. NGS BITE Message FD SMK EVAC SIG1 FAIL ON - Fault Isolation

A. Description

(1) This task is for fault message 47-30045.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) FD SMK EVAC SIG1 FAIL ON shows on the display when the NGS controller finds that the forward smoke evacuation signal is in the incorrect ON condition.

(4) 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) Forward smoke evacuation system

(2) Airplane wiring.

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 21–43–21

(2) SSM 47-30-01

(3) WDM 21-43-21

(4) WDM 47-30-11

E. Initial Evaluation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

(b) If FD SMK EVAC SIG1 FAIL ON 47-30045 shows on the display, then do the fault isolation procedure.

F. Fault Isolation Procedure

(1) Do a check of the overboard evacuation valve.

(a) If the overboard evacuation valve is in the SMOKE position, then do this task: Equipment Cooling Overboard Exhaust Valve - Functional Test, AMM TASK 21-27-00-700-803.

(b) If the test fails, then do the applicable fault isolation procedure.

(2) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

(b) If FD SMK EVAC SIG1 FAIL ON 47-30045 shows on the display, then continue with the fault isolation procedure.

(3) Make sure that the overboard evacuation valve is in the NORMAL position.

(4) Do these steps to do a check for a short to ground between the NGS controller and the overboard exhaust valve relay:

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(b) Disconnect the electrical connector D13806 at the NGS controller.

(c) Disconnect the electrical connector D11880 at the overboard exhaust valve (V157).

(d) Do a check of the wire from connector D13806 pin 41 to the airplane structure.

NOTE: If pin 41 and the airplane structure are connected, then there is a short circuit to ground.

1) Repair the problems that you find.

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(e) Connect the connectors D13806 and D11880.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Do the electrical test in this task: Ground Operation of the Nitrogen Generation System, AMM TASK 47-00-00-800-801.

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

END OF TASK

830. NGS BITE Message ENG 1 SIG FAIL - Fault Isolation

A. Description

(1) This task is for fault 47-30050.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) ENG1 SIG FAIL shows on the display when the NGS controller detects an incorrect engine 1 running relay open circuit.

B. Possible Causes

(1) Engine 1 running relay (R564)

(2) Airplane wiring.

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 73–22–31

(2) WDM 73–22–31

(3) SSM 47–30–01

(4) WDM 47–30–11.

E. Initial Evaluation

(1) Push the MENU button.

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

1) IF EXISTING FAULTS? does not show, push the up or down arrow until EXISTING FAULTS? shows.

a) Push the YES button.

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(b) If ENG1 SIG FAIL 47–30050 shows on the display, do the fault isolation procedure.

F. Fault Isolation Procedure

(1) To navigate to the I/O MONITOR? DISCRETE INPUTS? menu, 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, then push the up or down arrow until OTHER FUNCTIONS? shows on the display.

(b) Push the YES button.

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

a) IF I/O MONITOR? does not show, then push the up or down arrows until I/O MONITOR? shows on the display.

(c) Push the YES button.

1) Make sure that DISCRETE INPUTS? shows on the display.

a) If DISCRETE INPUTS? does not show, then push the up or down arrow until DISCRETE INPUTS? shows on the display.

(d) Push the YES button.

(e) Push the up or down arrow until ENG 1 SIG XXX shows.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT
B	3	C01312	ENGINE 1 RUN/PWR

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

(3) Remove and replace the engine 1 running relay.

NOTE: The engine1 running relay is in the junction box, J22.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

(b) Make sure that pneumatic pressure is not available to both engines.

(c) Make sure that the fire handles are in the NORMAL position.

(d) Put the engine 1 and 2 start levers to the IDLE position.

NOTE: You must wait five minutes or more for the engine running controls and relays to change state.

(4) Navigate to the I/O MONITOR? DISCRETE INPUTS? menu.

(a) Push the up or down arrow until ENG 1 SIG XXX shows on the display.

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1) If ENG 1 SIG ON shows, then you repaired the problem.
2) If ENG 1 SIG OFF shows, then continue with the fault isolation.

(5) Put the engine 1 and 2 start levers to the OFF position.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(7) Do these steps to do a check of the wiring between the NGS controller and the engine 1 running relay:

(a) Disconnect the connector D13806 from the NGS controller.

(b) Disconnect the connector D10918 from the engine 1 running relay.

(c) Do a check of the wire from connector D13806 pin 52 to connector S10918 pin D2.

(d) Repair the problems that you find.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

G. Repair Confirmation

(1) Put the engine 1 and 2 start levers to the IDLE position.

NOTE: You must wait five minutes or more for the engine running controls and relays to change state.

(2) Navigate to the I/O MONITOR? DISCRETE INPUTS? menu.

(a) Push the up or down arrow until ENG 1 SIG XXX shows on the display.

1) If ENG 1 SIG ON shows, then you repaired the problem.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

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F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

END OF TASK

831. NGS BITE Message ENG2 SIG FAIL - Fault Isolation

A. Description

(1) This task is for fault 47-30051.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) ENG2 SIG FAIL shows on the display when the NGS controller detects an incorrect engine 2 running relay open circuit.

B. Possible Causes

(1) Engine 2 running relay (R563)

(2) Airplane wiring.

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	5	C01313	ENGINE 2 RUN/PWR

D. Related Data

(1) SSM 73–22–31

(2) WDM 73–22–31

(3) SSM 47–30–01

(4) WDM 47–30–11.

E. Initial Evaluation

(1) Push the MENU button.

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

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

a) Push the YES button.

(b) If ENG2 SIG FAIL 47–30051 shows on the display, do the fault isolation procedure.

F. Fault Isolation Procedure

(1) To navigate to the I/O MONITOR? DISCRETE INPUTS? menu, do these steps:

(a) Push the MENU button on the BDU.

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

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

(b) Push the YES button.

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

a) If I/O MONITOR? does not show, then push the up or down arrows until I/O MONITOR? shows on the display.

(c) Push the YES button.

1) Make sure that DISCRETE INPUTS? shows on the display.

a) If DISCRETE INPUTS? does not show, then push the up or down arrow until DISCRETE INPUTS? shows on the display.

(d) Push the YES button.

(e) Push the up or down arrow until ENG 2 SIG XXX shows.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	5	C01313	ENGINE 2 RUN/PWR
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

(3) Remove and replace the engine 2 running relay.

NOTE: The engine 2 running relay is in the junction box, J24.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	5	C01313	ENGINE 2 RUN/PWR

(b) Make sure that pneumatic pressure is not available to both engines.

(c) Make sure that the fire handles are in the NORMAL position.

(d) Put the engine 1 and 2 start levers to the IDLE position.

NOTE: You must wait five minutes or more for the engine running controls and relays to change state.

(4) Navigate to the I/O MONITOR? DISCRETE INPUTS? menu.

(a) Push the up or down arrow until ENG 2 SIG XXX shows on the display.

1) If ENG 2 SIG ON shows, then you repaired the problem.

2) If ENG 2 SIG OFF shows, then continue with the fault isolation.

(5) Put the engine 1 and 2 start levers to the OFF position.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	5	C01313	ENGINE 2 RUN/PWR

(6) Do these steps to do a check of the wiring between the NGS controller and the engine 2 running relay:

(a) Disconnect the connector D13806 from the NGS controller.

(b) Disconnect the connector D10916 from the engine 2 running relay.

(c) Do a check of the wire from connector D13806 pin 16 to connector S10916 pin D2.

(d) Repair the problems that you find.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	5	C01313	ENGINE 2 RUN/PWR

G. Repair Confirmation

(1) Put the engine 1 and 2 start levers to the IDLE position.

NOTE: You must wait five minutes or more for the engine running controls and relays to change state.

(2) Navigate to the I/O MONITOR? DISCRETE INPUTS? menu.

(a) Push the up or down arrow until ENG 2 SIG XXX shows on the display.

1) If ENG2 SIG ON shows, then you repaired the problem.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

END OF TASK

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832. NGS BITE Message PACK SIG FAIL OFF - Fault Isolation

A. Description

(1) This task is for maintenance message 47-30054.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) PACK SIG FAIL OFF shows on the display when the controller finds that the PACK signal is failed OFF.

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

B. Possible Causes

(1) Air conditioning pack signal

(2) Airplane wiring.

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
C	6	C00262	AIR CONDITIONING PACK CONT VALVES LEFT

D. Related Data

(1) WDM 21–51–11

(2) WDM 47–30–11.

E. Initial Evaluation

(1) Put the L PACK switch on the P-5 panel to the HIGH or AUTO position.

(a) Make sure that the R PACK switch is OFF.

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

NOTE: If the BDU has been inactive for five minutes, you must restart it.

(2) Push the MENU 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/down arrow until EXISTING FAULTS? shows.

a) Push the YES button.

(b) PACK SIG FAIL OFF shows on the display.

(3) Do these steps to move through the BDU menus:

(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 I/O MONITOR? shows on the display.

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

b) Push the YES button.

3) Make sure that DISCRETE INPUTS? shows on the display.

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

b) Push the YES button.

4) Push the up or down arrow until PACK SIG: OFF shows on the display. This verifies the BITE fault message.

F. Fault Isolation Procedure

(1) Do this task: Pack Flow Control Valve - Operational Test, AMM TASK 21-51-00-700-802.

(a) If a FAIL indication for the pack flow control valve operational test shows, then do these steps:

1) Do the applicable fault isolation procedures.

2) Repair the problems that you find.

(2) Navigate to the I/O Monitor DISCRETE inputs menu.

(a) Push the YES button.

1) Push the up or down arrow until PACK SIG: XXX shows on the display.

a) If PACK SIG: ON shows on the display, then you repaired the problem.

b) If PACK SIG: OFF shows on the display, then continue with the fault isolation.

(3) Do these steps to do a check of the airplane wiring:

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
C	6	C00262	AIR CONDITIONING PACK CONT VALVES LEFT

(b) Disconnect the connector D13806 from the NGS controller.

(c) Disconnect the connector D458B from the air conditioning relay 1 (M00324).

(d) Do a check of the wiring between connector D13806 pin 23 and connector D458B, pin 43.

(e) Repair the problems that you find.

(f) Connect the connector D13806 to the NGS controller.

(g) Connect the connector D458B to the air conditioning relay 1.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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F/O Electrical System Panel, P6-4

Row	Col	Number	Name
C	6	C00262	AIR CONDITIONING PACK CONT VALVES LEFT

G. Repair Confirmation

(1) Navigate to the I/O Monitor DISCRETE/ inputs screen on the BDU.

(a) Push the up or down arrow until PACK SIG: XXX shows on the display.

1) If PACK SIG: ON shows on the display, then you repaired the problem.

END OF TASK

833. NGS BITE Message AIRCRAFT ID INVALID - Fault Isolation

A. Description

(1) This task is for fault 47-30056.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) AIRCRAFT ID INVALID shows on the display when the NGS controller detects an incorrect aircraft ID signal.

(4) 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 return connected to ID pins 1, 2, and 5.(SSM 47-30-01) (WDM 47-30-11)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47–30–01

(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 D13804 for the NGS controller M02559.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

(a) Disconnect the electrical connector D13804 at the NGS controller.

(b) Do a check of the wires at connector D13804 pin 30 (ID 1), pin 29 (ID 2), pin 46 (ID 5) and pin 47 (ID return).

NOTE: Pins 30, 29, and must all be connected to the ID return pin 47.

(c) Repair the problems that you find.

(d) Connect the connector D13804.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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: 737 shows on the display.

a) If AIRCRAFT ID: 737 shows on the display, then you have repaired the problem.

END OF TASK

834. NGS BITE Message REFUEL SIG1 FAIL - Fault Isolation

A. Description

(1) This task is for fault 47–30059.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) REFUEL SIG1 FAIL 47–30059 shows on the display when the controller senses that the center tank refuel valve is in the incorrect open position.

B. Possible Causes

(1) Center tank refuel valve relay

(2) Airplane wiring

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47–30–01

(2) WDM 47–30–11

(3) SSM 28–44–11

(4) WDM 27–44–11

E. Initial Evaluation

(1) Push the MENU 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.

(2) If REFUEL SIG1 FAIL 47–30059 shows on the display, then do the fault isolation procedure.

F. Fault Isolation Procedure

(1) To navigate to the I/O MONITOR? DISCRETE INPUTS? menu, 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, then push the up or down arrow until OTHER FUNCTIONS? shows on the display.

(b) Push the YES button.

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

a) IF I/O MONITOR? does not show, then push the up or down arrows until I/O MONITOR? shows on the display.

(c) Push the YES button.

1) Make sure that DISCRETE INPUTS? shows on the display.

a) If DISCRETE INPUTS? does not show, then push the up or down arrow until DISCRETE INPUTS? shows on the display.

(d) Push the YES button.

(e) Push the up or down arrow until REFUEL VLV SIG1: VALVE OPEN shows on the display. This verifies the fault message.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	3	C00032	FUEL FUELING CONT

(3) Remove and replace the center tank refuel valve relay (R951).

NOTE: The center tank refuel valve relay is in the J20 junction box.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	3	C00032	FUEL FUELING CONT

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

(c) Navigate to the I/O MONITOR? DISCRETE INPUTS? menu.

(d) Push the up or down arrow until REFUEL VLV SIG1: VALVE XXXXX shows on the display.

1) If REFUEL VLV SIG1: VALVE CLOSED shows on the display, then you repaired the problem.

(e) If REFUEL VLV SIG1: VLV OPEN shows on the display, then continue with the fault isolation procedure.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	3	C00032	FUEL FUELING CONT

(5) Do these steps to do a check of the wiring between the NGS controller and the center tank refuel valve relay:

(a) Disconnect the connector D13806 from the NGS controller.

(b) Disconnect the connector D13842 from the center tank refuel valve relay.

(c) Do a check of the wire from connector D13806 pin 33 to connector D13842 pin X1.

(d) Repair the problems that you find.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	3	C00032	FUEL FUELING CONT

G. Repair Confirmation

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

(2) Navigate to the I/O MONITOR? DISCRETE INPUTS? menu.

(3) Push the up or down arrow until REFUEL VLV SIG1: VALVE XXXXX shows on the display.

(a) If REFUEL VLV SIG1: VALVE CLOSED shows on the display, then you repaired the problem.

END OF TASK

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835. NGS BITE Message FLAP SIG FAIL - Fault Isolation

A. Description

(1) This task is for fault 47–30061.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) FLAP SIG FAIL shows on the display if the controller senses that there is a flap signal deployed ON fault or a flap signal deployed OFF fault.

B. Possible Causes

(1) Trailing edge flaps up switch (S1051)

(2) Left RAM MOD control relay

(3) Airplane wiring.

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
HAP 106-999			
A	8	C00265	AIR CONDITIONING RAM AIR MOD CONT LEFT
HAP 047-053, 106-999			

D. Related Data

(1) SSM 47-30-01

(2) WDM 47–30–11

(3) SSM 27-31-37

(4) WDM 27-31-37

(5) SSM 21-51-14

(6) WDM 21-51-14

E. 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, push the up or down arrow until EXISTING FAULTS? shows on the display.

a) Push the YES button.

(b) If FLAP SIG FAIL 47–30061 shows on the display, then do the fault isolation procedure.

F. Fault Isolation Procedure

(1) Make sure that the trailing edge flaps are in the UP position.

(2) Do this task: Prepare to Put the Airplane in the Air Mode, AMM TASK 32-09-00-840-801

(3) Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801

(4) To navigate to the DISCRETE INPUTS? menu, do these steps:

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(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, then push the up or down arrow until OTHER FUNCTIONS? shows on the display.

(b) Push the YES button.

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

a) IF I/O MONITOR? does not show, then push the up or down arrows until I/O MONITOR? shows on the display.

(c) Push the YES button.

1) Make sure that DISCRETE INPUTS? shows on the display.

a) If DISCRETE INPUTS? does not show, then push the up or down arrow until DISCRETE INPUTS? shows on the display.

(d) Push the YES button.

(e) Push the up or down arrow until FLAP SIG: XXXXX shows on the display.

1) If FLAP SIG: DEPLOYED shows on the display, then there is a short circuit to ground.

(5) Move the left and right trailing edge flaps to the FLAP 1 position.

(a) If FLAP SIG:NOT DEPLOYED shows on the display then there is an open circuit.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
HAP 106-999			
A	8	C00265	AIR CONDITIONING RAM AIR MOD CONT LEFT
HAP 047-053, 106-999			

(7) Remove and replace the trailing edge flaps up switch (S1051).

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
HAP 106-999			
A	8	C00265	AIR CONDITIONING RAM AIR MOD CONT LEFT
HAP 047-053, 106-999			

(9) Make sure that the trailing edge flaps are in the FLAPS 1 position.

(a) Navigate to the DISCRETE INPUTS? menu.

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1) Push the up or down arrow until FLAP SIG XXXX shows on the display.
   a) If the problem was an open circuit and FLAP SIG: DEPLOYED shows on the display, then you repaired the problem.
   b) If FLAP SIG: NOT DEPLOYED shows on the display, then continue the fault isolation.

(10) Move the flaps to the UP position.
   (a) Navigate to the DISCRETE INPUTS? menu.
      1) Push the up or down arrow until FLAP SIG XXXX shows on the display.
         a) If the problem was an short circuit and FLAP SIG: NOT DEPLOYED shows on the display, then you repaired the problem.
         b) If FLAP SIG: DEPLOYED shows on the display, then continue the fault isolation.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
HAP 106-999			
A	8	C00265	AIR CONDITIONING RAM AIR MOD CONT LEFT
HAP 047-053, 106-999			

(12) Make sure that the trailing edge flaps are in the FLAPS 1 position.
   (a) Navigate to the DISCRETE INPUTS? menu.
      1) Push the up or down arrow until FLAP SIG XXXX shows on the display.
         a) If the problem was an open circuit and FLAP SIG: DEPLOYED shows on the display, then you repaired the problem.
         b) If FLAP SIG: NOT DEPLOYED shows on the display, then continue the fault isolation.

(13) Move the flaps to the UP position.
   (a) Navigate to the DISCRETE INPUTS? menu.
      1) Push the up or down arrow until FLAP SIG XXXX shows on the display.
         a) If the problem was an short circuit and FLAP SIG: NOT DEPLOYED shows on the display, then you repaired the problem.
         b) If FLAP SIG: DEPLOYED shows on the display, then continue the fault isolation.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

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F/O Electrical System Panel, P6-4

Row	Col	Number	Name
HAP 106-999			
A	8	C00265	AIR CONDITIONING RAM AIR MOD CONT LEFT
HAP 047-053, 106-999			

(15) Do these steps to do a check of the wire between the NGS controller and the left RAM MOD control relay:

(a) Disconnect the connector D13806 from the NGS controller.

(b) Disconnect the connector D458B from the left RAM MOD control relay.

(c) Disconnect the connector D46040J from the left trailing edge flaps up switch (S1051).

(d) Do a check of the wire for an open circuit from connector D13806 pin 9 to connector D458B pin A7.

(e) Repair the problems that you find.

(f) Do a check of the wire for a short circuit from connector D13806 pin 9 to connector D46040J pin 14.

(g) Repair the problems that you find.

(16) Connect these connectors:

(a) D13806

(b) D458B

(c) D46040J.

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
HAP 106-999			
A	8	C00265	AIR CONDITIONING RAM AIR MOD CONT LEFT
HAP 047-053, 106-999			

G. Repair Confirmation

(1) Make sure that the trailing edge flaps are in the FLAPS 1 position.

(a) Navigate to the DISCRETE INPUTS? menu.

1) Push the up or down arrow until FLAP SIG XXXX shows on the display.

a) If the problem was an open circuit and FLAP SIG: DEPLOYED shows on the display, then you repaired the problem.

(2) Move the flaps to the UP position.

(a) Navigate to the DISCRETE INPUTS? menu.

1) Push the up or down arrow until FLAP SIG XXXX shows on the display.

a) If the problem was an short circuit and FLAP SIG: NOT DEPLOYED shows on the display, then you repaired the problem.

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H. Return the airplane to the ground mode.

(1) Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

(2) Do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.

END OF TASK

838. NGS BITE Message NGS OXYGEN SENS FAIL - Fault Isolation

A. Description

(1) This task is for fault message 47-30062.

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) NGS OXYGEN SENS FAIL shows when the controller finds an open or short circuit condition for the NGS oxygen sensor (M2692).

(4) 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) NGS oxygen sensor (M2692)

(2) NGS wiring

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

(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.

F. Fault Isolation Procedure

(1) Disconnect the NGS Oxygen Sensor (M2692), connector D14200, 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, D14200.

4) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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.

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

(2) Replace the NGS oxygen sensor (M2692).

(a) Do this task: NGS Oxygen Sensor Removal, AMM TASK 47-42-03-020-801.

(b) Do this task: NGS Oxygen Sensor Installation, AMM TASK 47-42-03-420-801.

(3) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

(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) Disconnect the connector D14200 on the NGS oxygen sensor.

(5) Disconnect the connector D13804 on the NGS controller.

(6) Disconnect the connector D13806 on the NGS controller.

(7) Do a continuity check from the NGS oxygen sensor connector D14200, and the NGS controller connectors D13804 and D13806 (WDM 47-30-11).

D14200	D13806
pin G	pin 15

D14200	D13804
pin E	pin 44
pin D	pin 42

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

(9) Connect the connectors: D14200, D13806, and D13804.

G. Repair Confirmation

(1) Do this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

839. NGS BITE Message NGS ASM FAIL - Fault Isolation

A. Description

(1) This task is for fault 47-30063

(2) The operability indicator shows DEGRADED (blue light). The NGS is operating below normal.

(3) The NGS ASM FAIL shows when the ASM performance is degraded or an overtemperature occurs.

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

B. Possible Causes

(1) NGS ASM

(2) NGS Oxygen Sensor

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
D	17	C01657	NITROGEN GENERATION CONTROL
E	15	C01680	NGS ALT PWR

D. Related Data

(1) SSM 47-30-11

(2) WDM 47-30-11

E. Initial Evaluation

(1) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836

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

(b) If the fault message, NGS ASM FAIL 47-30063 shows on the display, then do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Replace the ASM (AMM PAGEBLOCK 47-11-01/401).

G. Repair Confirmation

(1) Do the electrical test in this task: NGS BITE — Procedure, 47-31 TASK 836.

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

END OF TASK

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