CHAPTER

79

OIL

(CFM56 ENGINES (CFM56-7))

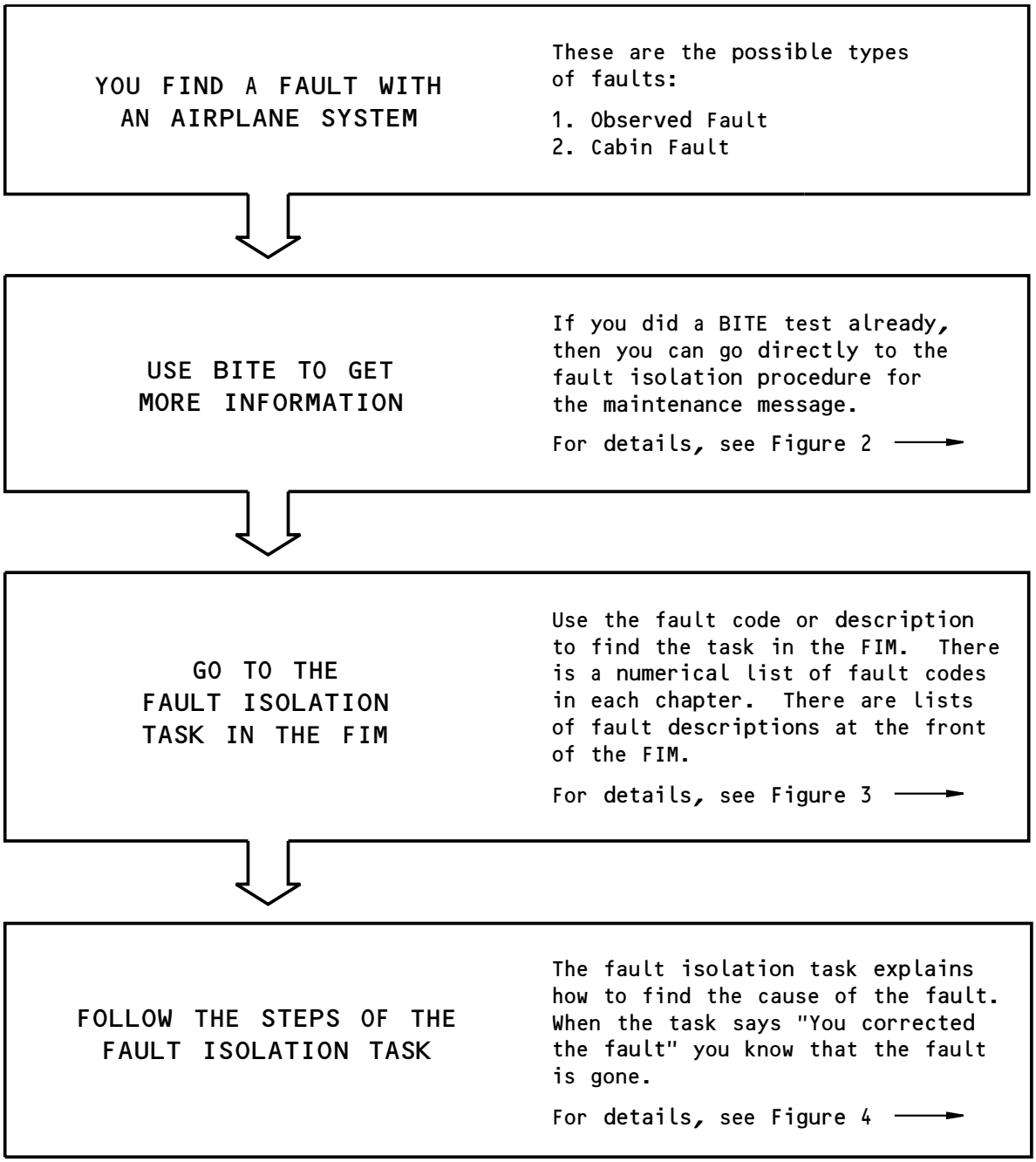
BOEING

737-600/700/800/900
FAULT ISOLATION MANUAL

CHAPTER 79
OIL

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

79-EFFECTIVE PAGES



G04902 S0000148576_V1

Basic Fault Isolation Process
Figure 1

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.

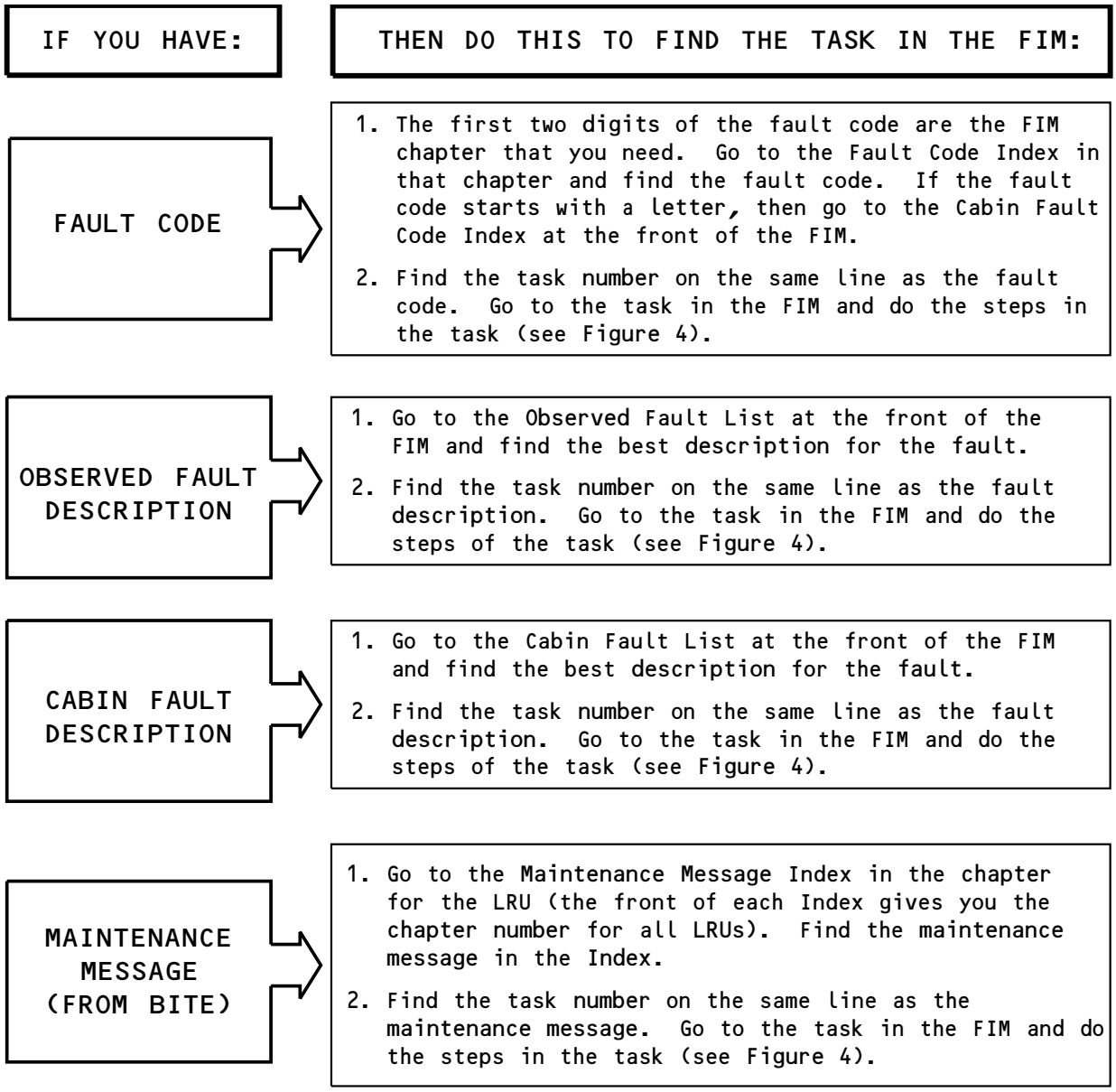
To find the fault isolation task for a maintenance message, go to the Maintenance Message Index in the chapter for the applicable system.

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).

G04950 S0000148578_V1

Getting Fault Information from BITE
Figure 2



G04979 S0000148579_V2

Finding the Fault Isolation Task in the FIM
Figure 3

ASSUMED CONDITIONS AT START OF TASK

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

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

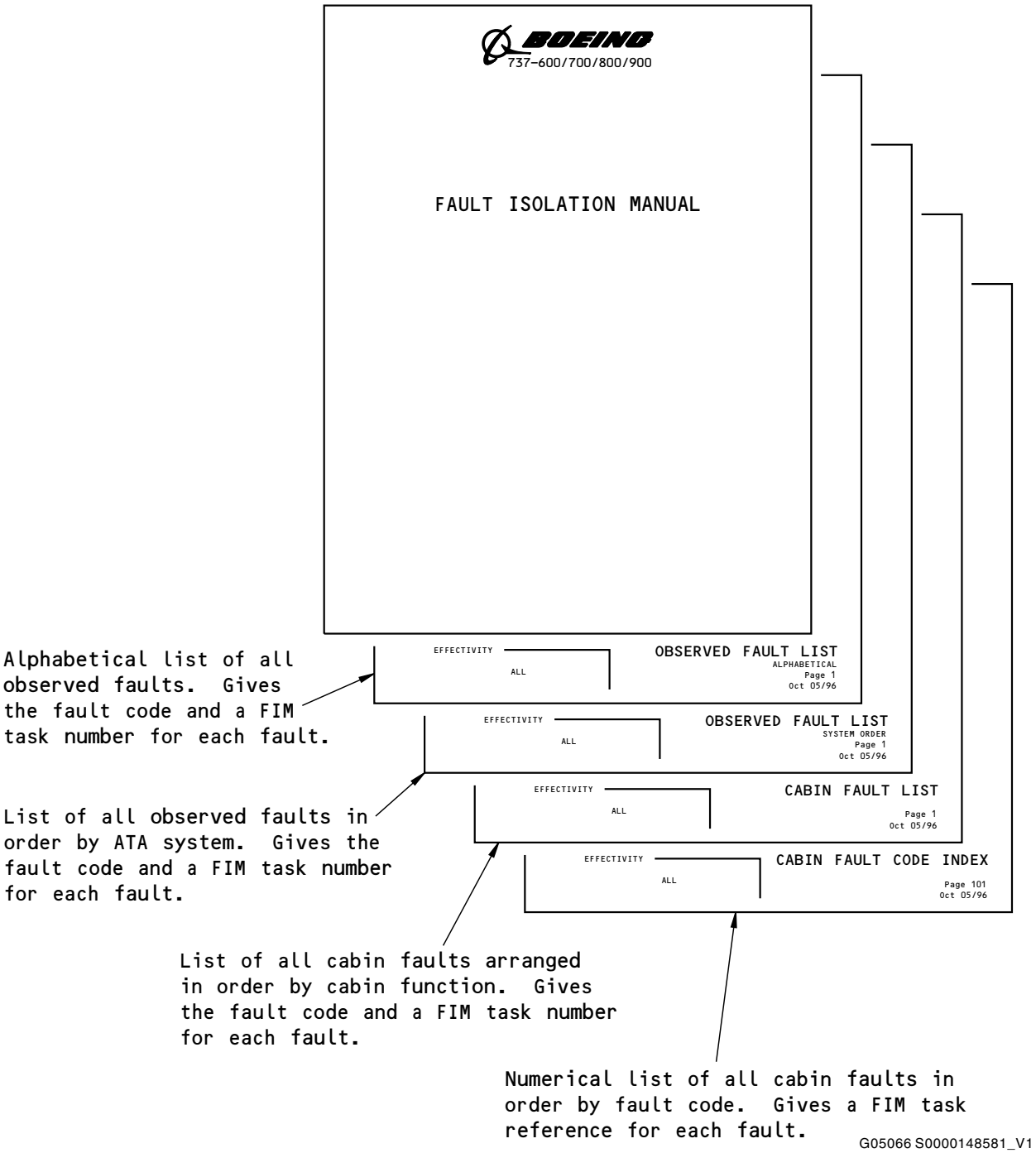
- The primary purpose of the Initial Evaluation paragraph at the start of the task is to help you find out if you can detect the fault right now:
  - If you cannot detect the fault right now, then the task cannot isolate the fault and the Initial Evaluation paragraph will say that there was an intermittent 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

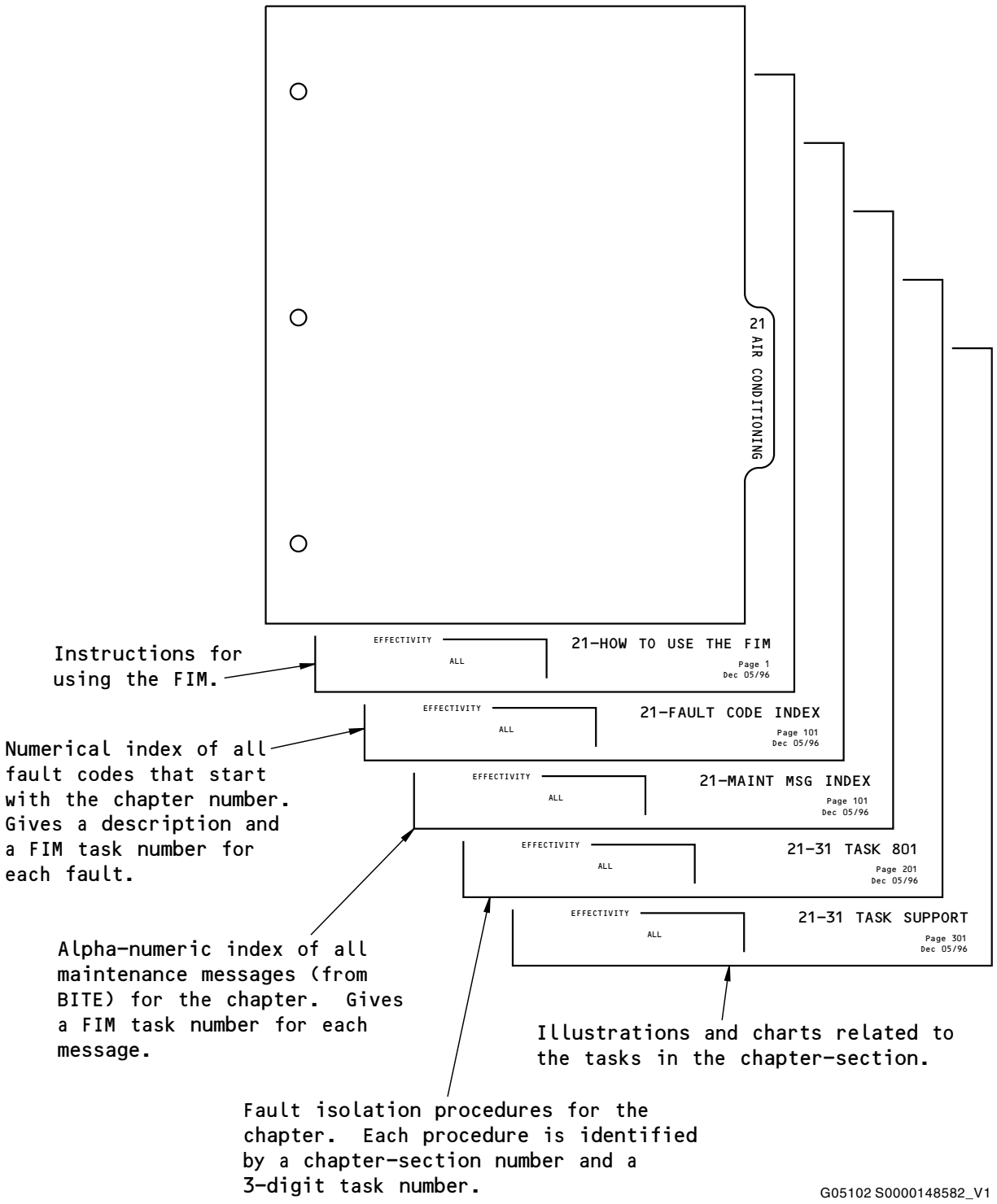
- The FIM task steps are presented in a specified order. The "If... then" statements will guide you along a logical path. But if you do not plan to follow the FIM task exactly, make sure that you read it before you start to isolate the fault. Some FIM procedures start with important steps that have an effect on the other steps in the procedure.
- When you are at the endpoint of the path, the step says "...you corrected the fault." Complete the step and exit the procedure.

G05009 S0000148580_V3

Doing the Fault Isolation Task
Figure 4



Subjects at Front of FIM
Figure 5



Subjects in Each FIM Chapter
Figure 6

FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
790 010 51	Engine oil consumption: high (oil quantity decreases at a quick rate) - engine 1.	79-05 TASK 801
790 010 52	Engine oil consumption: high (oil quantity decreases at a quick rate) - engine 2.	79-05 TASK 801
790 015 51	Engine oil pressure indication: high - engine 1.	79-05 TASK 802
790 015 52	Engine oil pressure indication: high - engine 2.	79-05 TASK 802
790 045 51	Engine oil pressure indication: low or zero (red) - engine 1.	79-05 TASK 803
790 045 52	Engine oil pressure indication: low or zero (red) - engine 2.	79-05 TASK 803
790 050 51	Engine oil pressure indication: intermittent or blank - engine 1.	79-05 TASK 807
790 050 52	Engine oil pressure indication: intermittent or blank - engine 2.	79-05 TASK 807
790 055 51	Engine oil pressure indication: red bar shows on oil pressure indication scale/bar - left engine.	31-63 TASK 827
790 055 52	Engine oil pressure indication: red bar shows on oil pressure indication scale/bar - right engine.	31-63 TASK 827
790 060 51	Engine oil quantity indication: high - engine 1.	79-05 TASK 808
790 060 52	Engine oil quantity indication: high - engine 2.	79-05 TASK 808
790 070 51	Engine oil quantity indication: low - engine 1.	79-05 TASK 809
790 070 52	Engine oil quantity indication: low - engine 2.	79-05 TASK 809
790 080 51	Engine oil quantity indication: inaccurate, intermittent, remains constant, or blank - engine 1.	79-05 TASK 810
790 080 52	Engine oil quantity indication: inaccurate, intermittent, remains constant, or blank - engine 2.	79-05 TASK 810
790 085 51	Engine oil temperature indication: high (amber) - engine 1.	79-05 TASK 811
790 085 52	Engine oil temperature indication: high (amber) - engine 2.	79-05 TASK 811
790 090 51	Engine oil temperature indication: high (red) - engine 1.	79-05 TASK 812
790 090 52	Engine oil temperature indication: high (red) - engine 2.	79-05 TASK 812
790 095 51	Engine oil temperature indication: red bar shows on oil temperature indication scale/bar - left engine.	31-63 TASK 827
790 095 52	Engine oil temperature indication: red bar shows on oil temperature indication scale/bar - right engine.	31-63 TASK 827
790 100 51	Engine oil temperature indication: intermittent or blank - engine 1.	79-05 TASK 815
790 100 52	Engine oil temperature indication: intermittent or blank - engine 2.	79-05 TASK 815
790 110 51	OIL FILTER BYPASS Message: shows on the Engine Display - ENG 1.	79-05 TASK 817
790 110 52	OIL FILTER BYPASS Message: shows on the Engine Display - ENG 2.	79-05 TASK 817

FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
790 120 51	OIL FILTER BYPASS Message: does not show on the Engine Display during the EEC Test - ENG 1.	79-05 TASK 818
790 120 52	OIL FILTER BYPASS Message: does not show on the Engine Display during the EEC Test - ENG 2.	79-05 TASK 818

LRU/SYSTEM	SHORT NAME	CHAPTER
Air Data Inertial Reference System	ADIRS	34
Air Traffic Controller Transponder - 1 (Left)	ATC XPDR - 1 (L)	34
Air Traffic Controller Transponder - 2 (Right)	ATC XPDR - 2 (R)	34
Airborne Vibration Monitor System Signal Conditioner	AVM SIG COND	77
Antiskid Control Unit	ANTISKID	32
Attendant Control Panel	ACP	23
Automatic Direction Finder Receiver - 1	ADF RECVR - 1	34
Automatic Direction Finder Receiver - 2	ADF RECVR - 2	34
Autothrottle Computer	A/T COMPUTER	22
Auxiliary Power Unit	APU	49
Auxiliary Power Unit Generator Control Unit	APU GCU	24
Bus Power Control Unit	BPCU	24
Cabin Pressure Controller	CAB PRESS CON	21
Cabin Temperature Controller	CAB TEMP CONT	21
Cargo Electronic Unit - Lower Aft	CEU - LWR AFT	26
Cargo Electronic Unit - Lower Forward	CEU - LWR FWD	26
Cargo Electronic Unit - Main Aft	CEU - MAIN AFT	26
Cargo Fire Control Panel	CFCP	26
Common Display System	CDS	31
Compartment Overheat Detection Control Module	WING/BODY OHT	26
Digital Flight Control System	DFCS	22
Distance Measurement Equipment Interrogator	DME INTRROGTR	34
Electrical Meters, Battery, and Galley Power Module	P5-13	24
Electronic Engine Controller - 1	ENGINE - 1	73
Electronic Engine Controller - 2	ENGINE - 2	73
Emergency Locator Transmitter	ELT	23
Engine Accessory Unit	EAU	78
Engine Accessory Unit/TR DEPLOY ENG 1	EAU/TR DPLOY-ENG 1	78
Engine Accessory Unit/TR DEPLOY ENG 2	EAU/TR DPLOY-ENG 2	78
Engine Accessory Unit/TR STOW ENG 1	EAU/TR STOW-ENG 1	78
Engine Accessory Unit/TR STOW ENG 2	EAU/TR STOW-ENG 2	78
Engine and Auxiliary Power Unit Fire Detection Control Module	ENG/APU FIRE	26
Enhanced Digital Flight Control Computer-A	EDFCC-A	22
Enhanced Digital Flight Control System	EDFCS	22
Flap/Slat Electronics Unit	FSEU	27

LRU/SYSTEM	SHORT NAME	CHAPTER
Flight Data Acquisition Unit	FDAU	31
Flight Management Computer System	FMCS	34
Fuel Quantity Indicating System	FQIS	28
Generator Control Unit - 1	GCU - 1	24
Generator Control Unit - 2	GCU - 2	24
Ground Proximity Computer	GROUND PROX	34
High Frequency Transceiver	HF XCVR	23
Low Limit (35 Degree F) Controller - Left	35 DEG CONT L	21
Low Limit (35 Degree F) Controller - Right	35 DEG CONT R	21
Multi-Mode Receiver	MMR	34
Nitrogen Generation System BITE Display Unit	NGS	47
Pack Flow Temperature Controller	PFTC	21
Pack/Zone Temperature Controller - Left	PACK/ZN CON - L	21
Pack/Zone Temperature Controller - Right	PACK/ZN CON - R	21
Proximity Switch Electronics Unit	PSEU	32
Radio Altimeter Receiver/Transmitter	RADIO ALTIMTR	34
Stall Management Yaw Damper Computer - 1	SMYD - 1	27
Stall Management Yaw Damper Computer - 2	SMYD - 2	27
Traffic Alert and Collision Avoidance System Computer	TCAS COMPUTER	34
VHF Omnidirectional Ranging Marker Beacon Receiver	VOR/MKR RCVR	34
Very High Frequency Transceiver	VHF XCVR	23
Waste Tank Logic Control Module	WASTE TANK	38
Weather Radar Receiver/Transmitter	WEATHER RADAR	34
Window Heat Control Unit - Left Forward	WHCU - L FWD	30
Window Heat Control Unit - Left Side	WHCU - L SIDE	30
Window Heat Control Unit - Right Forward	WHCU - R FWD	30
Window Heat Control Unit - Right Side	WHCU - R SIDE	30
Window Heat Control Unit 1 - Left Forward and Right Side	WHCU1 - L FWD/R SIDE	30
Window Heat Control Unit 2 - Right Forward and Left Side	WHCU2 - R FWD/L SIDE	30

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ENGINE - 1	79-11091 THE ENGINE OIL PRESSURE SIGNAL (PEO) IS OUT OF RANGE	79-21 TASK 801
ENGINE - 1	79-11101 THE ENGINE OIL TEMPERATURE SIGNAL (TEO) IS OUT OF RANGE	79-21 TASK 802
ENGINE - 1	79-11121 THE OIL FILTER SIGNALS DISAGREE	79-05 TASK 817
ENGINE - 1	79-11141 DMS REQUIRES INSPECTION	79-21 TASK 808
ENGINE - 1	79-11151 INTERNAL EEC FAULT. DMS INSTALLED SIGNALS DISAGREE	73-21 TASK 801
ENGINE - 1	79-11341 THE ENGINE OIL PRESSURE SIGNALS (PEO) DISAGREE	79-21 TASK 809
ENGINE - 1	79-21091 THE ENGINE OIL PRESSURE SIGNAL (PEO) IS OUT OF RANGE	79-21 TASK 801
ENGINE - 1	79-21101 THE ENGINE OIL TEMPERATURE SIGNAL (TEO) IS OUT OF RANGE	79-21 TASK 802
ENGINE - 1	79-21121 THE OIL FILTER SIGNALS DISAGREE	79-05 TASK 817
ENGINE - 1	79-21141 DMS REQUIRES INSPECTION	79-21 TASK 808
ENGINE - 1	79-21151 INTERNAL EEC FAULT. DMS INSTALLED SIGNALS DISAGREE	73-21 TASK 801
ENGINE - 1	79-21341 THE ENGINE OIL PRESSURE SIGNALS (PEO) DISAGREE	79-21 TASK 809
ENGINE - 1	79-31091 THE ENGINE OIL PRESSURE SIGNAL (PEO) IS OUT OF RANGE	79-21 TASK 801
ENGINE - 1	79-31101 THE ENGINE OIL TEMPERATURE SIGNAL (TEO) IS OUT OF RANGE	79-21 TASK 802
ENGINE - 1	79-31121 THE OIL FILTER SIGNALS DISAGREE	79-05 TASK 817
ENGINE - 1	79-31141 DMS REQUIRES INSPECTION	79-21 TASK 808
ENGINE - 1	79-31151 INTERNAL EEC FAULT. DMS INSTALLED SIGNALS DISAGREE	73-21 TASK 801
ENGINE - 1	79-31341 THE ENGINE OIL PRESSURE SIGNALS (PEO) DISAGREE	79-21 TASK 809
ENGINE - 2	79-11092 THE ENGINE OIL PRESSURE SIGNAL (PEO) IS OUT OF RANGE	79-21 TASK 801
ENGINE - 2	79-11102 THE ENGINE OIL TEMPERATURE SIGNAL (TEO) IS OUT OF RANGE	79-21 TASK 802
ENGINE - 2	79-11122 THE OIL FILTER SIGNALS DISAGREE	79-05 TASK 817
ENGINE - 2	79-11142 DMS REQUIRES INSPECTION	79-21 TASK 808
ENGINE - 2	79-11152 INTERNAL EEC FAULT. DMS INSTALLED SIGNALS DISAGREE	73-21 TASK 801
ENGINE - 2	79-11342 THE ENGINE OIL PRESSURE SIGNALS (PEO) DISAGREE	79-21 TASK 809

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ENGINE - 2	79-21092 THE ENGINE OIL PRESSURE SIGNAL (PEO) IS OUT OF RANGE	79-21 TASK 801
ENGINE - 2	79-21102 THE ENGINE OIL TEMPERATURE SIGNAL (TEO) IS OUT OF RANGE	79-21 TASK 802
ENGINE - 2	79-21122 THE OIL FILTER SIGNALS DISAGREE	79-05 TASK 817
ENGINE - 2	79-21142 DMS REQUIRES INSPECTION	79-21 TASK 808
ENGINE - 2	79-21152 INTERNAL EEC FAULT. DMS INSTALLED SIGNALS DISAGREE	73-21 TASK 801
ENGINE - 2	79-21342 THE ENGINE OIL PRESSURE SIGNALS (PEO) DISAGREE	79-21 TASK 809
ENGINE - 2	79-31092 THE ENGINE OIL PRESSURE SIGNAL (PEO) IS OUT OF RANGE	79-21 TASK 801
ENGINE - 2	79-31102 THE ENGINE OIL TEMPERATURE SIGNAL (TEO) IS OUT OF RANGE	79-21 TASK 802
ENGINE - 2	79-31122 THE OIL FILTER SIGNALS DISAGREE	79-05 TASK 817
ENGINE - 2	79-31142 DMS REQUIRES INSPECTION	79-21 TASK 808
ENGINE - 2	79-31152 INTERNAL EEC FAULT. DMS INSTALLED SIGNALS DISAGREE	73-21 TASK 801
ENGINE - 2	79-31342 THE ENGINE OIL PRESSURE SIGNALS (PEO) DISAGREE	79-21 TASK 809

801. Engine Oil Consumption is High (Oil Quantity Decreases at a Quick Rate) - Fault Isolation

A. Description

(1) The oil quantity display in the flight compartment shows a large decrease of engine oil quantity at a fast rate.

(2) At engine start with the engine speed stable, the oil level usually decreases about 0.5 gal (1.9 l). At take-off power on the ground with the aircraft level, the total decrease in oil level is about 1.3 gal (4.9 l). At take-off power, the total decrease in oil level is about 3.2 gal (12.1 l).

NOTE: When the engine oil temperature is low, an oil level decrease of 0.5 gal (1.9 l) is normal until the oil temperature is stable.

(a) This is called the gulping effect.

(b) This volume of oil is not available and is not part of the oil tank quantity.

(c) This volume is partially recovered during engine deceleration and completely recovered (minus oil consumption) at engine shutdown.

(3) If the oil volume is not recovered at engine shutdown, there is high oil consumption or oil retention in the oil circuit or both.

(4) If the oil level decreases while the engine is not in operation (e.g.: after an aircraft parking period), there is oil retention in the oil circuit.

B. Possible Causes

(1) External, aft sump or internal oil leak

(2) Oil system overservicing due to oil retention

(3) Gulping effect (not a failure)

(4) Leakage from Anti-Leak Valve

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	10	C01361	DISPLAY DEU 1 HOLDUP

(2) For Engine 2:

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

D. Related Data

(1) SSM 79-31-11

(2) WDM 79-31-11

E. Initial Evaluation

(1) Replenish the oil tank and make a note of how much oil was added (AMM TASK 12-13-11-600-801).

(a) If the amount of oil that was added is typical for that flight sector, then continue in-service engine operation.

(b) If the amount of oil that was added is much for that flight sector, then do the Fault Isolation Procedure below.

NOTE: Oil consumption can gradually increase over the life of the engine in service as a normal effect of engine aging and seal clearances opening. Discretion should be applied prior to troubleshooting an oil consumption gradual increase, taking into consideration the engine historical oil consumption trends, the rate of the oil consumption increase, engine age and hardware configuration, as well as the magnitude of the measured consumption. If fault isolation to determine the cause of a gradual increase in oil consumption does not identify a source of oil loss that can be repaired on wing, additional application of this FIM task may not be warranted if oil consumption remains stable.

NOTE: Oil consumption calculations may be influenced by the number of flight hours oil consumption is calculated over. Consumption measurements calculated over shorter flight intervals are subject to higher variation. Monitoring engine oil consumption using a rolling average will result in more repeatable measurements than consumption calculations from an individual uplift.

F. Fault Isolation Procedure

(1) Do this task: External Oil System Inspection, AMM TASK 79-00-00-200-802-F00.

(a) If a source of external oil leakage is found, do this task: Engine Vents and Drains Inspection, AMM TASK 71-71-00-200-801-F00.

(b) If you do not find an external oil leak, then continue.

(2) Examine the Aft Sump Oil System for leakage (AMM TASK 79-00-00-200-806-F01).

(a) If a source of leakage is found, correct it and do the Repair Confirmation at the end of this task.

(b) If you do not find a problem, then continue.

(3) Do these steps to find if there is oil retention:

(a) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(b) For the Accessory Gear Box (AGB), do this task: Drain the Engine Oil, AMM TASK 12-13-11-600-803.

(c) If more than 2 qt (2 l), approximately, are drained from the AGB, then do the scavenge screens inspection and look for blockage (AMM TASK 79-00-00-200-804-F00).

1) If you find blockage, then do the corrective action for the type of material that you find on the scavenge screens (AMM TASK 79-00-00-200-804-F00).

a) If the engine can be dispatched, then continue.

b) Clean the scavenge screens.

c) Start the engine and let it idle for a minimum of 5 minutes (AMM TASK 71-00-00-800-807-F00).

d) Do this task: Stop the Engine Procedure (Usual Engine Stop), AMM TASK 71-00-00-700-819-F00.

e) Do a visual check of the oil level through the sight gage on the oil tank.

f) If the oil level is back to normal, continue in-service engine operation and monitor the oil consumption (AMM TASK 71-00-00-800-806-F00).

g) If the oil level is still low, then continue.

2) If you did not find blockage in the scavenge screens, examine the oil scavenge lines for blockage.

a) If you find blockage in a scavenge line, remove the blockage from the scavenge line.

b) If you did not find blockage in the scavenge lines:

<1> If high oil consumption occurred while the engine is in operation, replace the Lubrication Unit. These are the tasks:

- Lubrication Unit Removal, AMM TASK 79-21-01-000-801-F00
- Lubrication Unit Installation, AMM TASK 79-21-01-400-801-F00

<2> If high oil consumption occurred while the engine is not in operation (e.g.: after aircraft parking), replace the Anti-Leak Valve. These are the tasks:

- Oil Anti-Leak Valve Removal, AMM TASK 79-21-09-000-801-F00
- Oil Anti-Leak Valve Installation, AMM TASK 79-21-09-400-801-F00

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

(d) If less than 2 qt (2 l), approximately, are drained from the AGB, then continue.

(4) To find if there is internal oil system leakage, do this task: Internal Oil System Inspection, AMM TASK 79-00-00-200-803-F00.

(a) If a source of internal oil leakage is found and the oil consumption rate is above the specified limit in the Engine Operation Limits (AMM TASK 71-00-00-800-806-F00), replace the Engine. These are the tasks:

- Power Plant - Removal, AMM TASK 71-00-02-000-801-F00
- Power Plant - Installation, AMM TASK 71-00-02-400-801-F00

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

G. Repair Confirmation

(1) Prepare for the Repair Confirmation:

(a) Do this task: Replenish the Engine Oil, AMM TASK 12-13-11-600-801.

(b) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

(2) Do this task: Start the Engine Procedure (Selection), AMM TASK 71-00-00-800-807-F00.

(a) Let the engine idle for a minimum of 15 minutes.

(3) Do this task: Stop the Engine Procedure (Usual Engine Stop), AMM TASK 71-00-00-700-819-F00.

(4) If oil leakage was the problem, make sure that there is no more leakage.

(5) With the engines stopped, make sure that the oil level through the sight gage on the oil tank is back to the full mark.

(6) Monitor the engine oil consumption during the subsequent flight.

END OF TASK

802. Engine Oil Pressure is High - Fault Isolation

A. Description

(1) The Oil Pressure Display on the center Display Unit (DU) shows that the oil pressure is high.

B. Possible Causes

(1) Oil Temperature

(2) Oil Supply Tube

(3) Oil Supply Nipple

(4) Transfer Gearbox (TGB)

(5) Engine

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A
B	4	C01003	ENGINE 1 THRUST REVERSER IND
B	5	C00276	ENGINE 1 THRUST REVERSER CONT
B	6	C01412	ENGINE 1 THRUST REVERSER INTLK
B	7	C01266	ENGINE 1 THRUST REVERSER SYNC LOCK
B	8	C01103	ENGINE 1 START VALVE
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES
C	4	C00154	ENGINE 2 START VALVE
C	5	C01267	ENGINE 2 THRUST REVERSER SYNC LOCK
C	6	C01413	ENGINE 2 THRUST REVERSER INTLK
C	7	C00277	ENGINE 2 THRUST REVERSER CONT
C	8	C01004	ENGINE 2 THRUST REVERSER IND
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1
E	3	C01321	ENGINE FUEL ENGINE 2 HPSOV CONT
E	5	C01320	ENGINE FUEL ENGINE 1 HPSOV CONT

D. Related Data

(1) 79-05 TASK SUPPORT Figure 303

E. Initial Evaluation

(1) Do a check of the Indicating System for Engine Oil Pressure (EEC BITE Procedure, 73-00 TASK 801).

(a) Look for oil pressure Maintenance Messages in the Fault History.

(b) If there are Maintenance Messages for oil pressure, do the applicable Fault Isolation Manual (FIM) task.

(c) If there are no Maintenance Messages for oil pressure, do the below Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) If the problem occurred during a Cold Weather Engine Start, do this task: Start the Engine Procedure (Selection), AMM TASK 71-00-00-800-807-F00.

(a) If the oil pressure decreases when the oil temperature increases, then put the Engine back in service.

NOTE: During cold weather operations, oil pressure peaks can occur because of high oil viscosity. Oil pressure should decrease as the oil temperature increases.

(b) If the oil pressure remains high after the oil temperature stabilized at normal level, then continue.

(c) Do this task: Stop the Engine Procedure (Usual Engine Stop), AMM TASK 71-00-00-700-819-F00.

(2) If the problem occurred after the Engine is warm or in-flight, do these steps:

(a) If the oil pressure is above 60 psid (413.7 kPa) during cruise phase but not more than 70 psid (482.6 kPa), clean or replace the Oil Supply Tube at the Turbine Frame. These are the tasks:

- Oil Supply Line Cleaning, AMM TASK 72-56-00-000-801-F00
- Oil Supply Tube Replacement, AMM TASK 72-56-00-300-801-F00.

NOTE: The number of cycles before the Oil Supply Tube cleaning or replacement varies with the oil pressure value during cruise phase. Refer to this task: Inspection After Engine Operations Above the Limits and High Engine Stress, AMM TASK 71-00-00-800-804-F00.

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

(b) If the oil pressure is above 70 psid (482.6 kPa) during cruise phase, do this task: Oil Supply Tube Replacement, AMM TASK 72-56-00-300-801-F00.

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

(c) When you have disconnected the Oil Supply Tube [2] according to preceding step (a) or step (b), do a visual inspection of the Oil Supply Nipple [3] on the Oil Inlet Cover [1] (79-05 TASK SUPPORT Figure 303).

1) If oil coke is found inside, do these steps to replace the Oil Supply Nipple [3]:

a) Remove and discard the Oil Supply Nipple [3] from the Oil Inlet Cover [1].

b) Remove and discard the O-ring [4].

c) Lubricate a new O-ring [4] with vaseline, D00672 [CP5070].

d) Install the new O-ring [4] on the Oil Supply Nipple [3].

e) Lubricate the threads of the Oil Supply Nipple [3] with oil, D00623 [CP5066].

f) Install the Oil Supply Nipple [3] on the Oil Inlet Cover [1]. Tighten the Oil Supply Nipple [3] manually to seat.

g) Torque the Oil Supply Nipple [3] between 176 in-lb (20 N·m) to 194 in-lb (22 N·m).

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

(d) Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00 and examine these tubes for obvious damage or blockage:

1) Oil Supply Tubes from the Lubrication Unit to the Oil Pressure Sensor, AGB, and the Rear Sump.

2) Oil Supply Tubes from the Oil Pressure Sensor to the Forward Sump and TGB.

3) Air Vent Tube from the TGB vent port to the Oil Pressure Sensor.

a) Also look for loose connections on this tube.

4) If you find a problem, then repair or replace the tube or hose.

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

5) If you do not find a problem, then continue.

(3) Do this task: Air Flow Test of the Engine Oil Circuit, AMM TASK 79-21-00-700-801-F00.

(a) If the Test Equipment for the Air Flow Test is not available, then continue with the Fault Isolation Procedure below.

(b) If the Air Flow Test for the TGB is not in the specified limits, replace the TGB. These are the tasks:

- Transfer Gearbox Assembly Removal, AMM TASK 72-62-00-000-801-F00
- Transfer Gearbox Assembly Installation, AMM TASK 72-62-00-400-801-F00.

(c) If the Air Flow Test for the AGB or the Forward Sump is not in the specified limits, replace the Engine. These are the tasks:

- Power Plant - Removal, AMM TASK 71-00-02-000-801-F00
- Power Plant - Installation, AMM TASK 71-00-02-400-801-F00.

(d) If the Air Flow Test for the Rear Sump is not in the specified limits, clean the Rear Sump Oil Supply Tube. Do this task: Oil Supply Line Cleaning, AMM TASK 72-56-00-000-801-F00.

1) Do the Air Flow Test of the Rear Sump again. Do this task: Air Flow Test of the Engine Oil Circuit, AMM TASK 79-21-00-700-801-F00.

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

(f) If the Air Flow Test is in the specified limits, then continue.

(4) Replace the Engine. These are the tasks:

- Power Plant - Removal, AMM TASK 71-00-02-000-801-F00
- Power Plant - Installation, AMM TASK 71-00-02-400-801-F00.

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

G. Repair Confirmation

(1) Do this task: Test 3A - Idle-Power Leak Check, AMM TASK 71-00-00-700-801-F00.

(a) If the problem still exists, continue the Fault Isolation Procedure at the subsequent step.

(2) Do this task: Replenish the Engine Oil, AMM TASK 12-13-11-600-801.

(3) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

(4) Do one of these two optional procedures:

(a) Look for high oil pressure on the Display while you do these steps:

1) Do this task: Start the Engine Procedure (Selection), AMM TASK 71-00-00-800-807-F00.

2) Let the Engine become stable at idle for a minimum of 5 minutes.

3) Do this task: Stop the Engine Procedure (Usual Engine Stop), AMM TASK 71-00-00-700-819-F00.

4) If the Oil Pressure Display does not read high, continue the Engine in service.

5) If the problem still exists, continue the Fault Isolation Procedure at the subsequent step.

6) Record the Corrective Actions that you did and monitor the oil pressure on subsequent flights.

(b) Record the steps that you did and the components that you repaired or replaced.

1) If the problem still exists, continue the Fault Isolation Procedure at the subsequent step.

2) Monitor the oil pressure on subsequent flights.

——— END OF TASK ———

803. Engine Oil Pressure is Low or Zero (Red) - Fault Isolation

A. Description

(1) The oil pressure display on the center Display Unit (DU) shows the REDLINE ALERT (below 13 psi).

B. Possible Causes

(1) High oil consumption

(2) Oil tank screen clogged

(3) Lubrication unit

(4) Oil nozzle failure.

C. Fault Isolation Procedure

(1) Do this task: Inspection After Engine Operations Above the Limits and High Engine Stress, AMM TASK 71-00-00-800-804-F00.

(a) If the engine is not in the specified limits, then replace the engine.

These are the tasks:

Power Plant - Removal, AMM TASK 71-00-02-000-801-F00,

Power Plant - Installation, AMM TASK 71-00-02-400-801-F00.

(b) If the engine is in the specified limits, then continue.

(2) Do this task: Replenish the Engine Oil, AMM TASK 12-13-11-600-801.

(a) Make a record of the quantity of oil that is put in the oil tank.

(3) If there was oil in the tank, examine the oil supply tubes and the tubes to the oil pressure sensor for obvious damage.

(a) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(b) If you find a problem, then repair or replace the tube or hose.

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

2) If the Repair Confirmation is not satisfactory, then continue.

(c) If you do not find a problem, then continue.

(4) Do these steps to examine the oil tank screen:

(a) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(b) Do this task: Drain the Engine Oil, AMM TASK 12-13-11-600-803.

(c) Examine the oil tank screen with a fiberscope through the drain port and look for blockage.

(d) If the oil tank screen is blocked, then replace the oil tank.

These are the tasks:

Oil Tank Removal, AMM TASK 79-11-01-000-801-F00,

Oil Tank Installation, AMM TASK 79-11-01-400-801-F00.

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

2) If the Repair Confirmation is not satisfactory, then continue.

(e) If the oil tank screen is not blocked, then continue.

(5) Replace the lubrication unit.

These are the tasks:

Lubrication Unit Removal, AMM TASK 79-21-01-000-801-F00,

Lubrication Unit Installation, AMM TASK 79-21-01-400-801-F00.

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

(b) If the Repair Confirmation is not satisfactory, then continue.

(6) Replace the engine.

These are the tasks:

Power Plant - Removal, AMM TASK 71-00-02-000-801-F00,

Power Plant - Installation, AMM TASK 71-00-02-400-801-F00.

D. Repair Confirmation

(1) Monitor the oil pressure on the display as you do these steps:

NOTE: If engine operation is necessary as a post-installation test after you repair or replace a component, you can do this step at the same time.

(a) Do this task: Start the Engine Procedure (Selection), AMM TASK 71-00-00-800-807-F00.

(b) Let the engine become stable at idle for a minimum of 5 minutes.

(c) Do this task: Stop the Engine Procedure (Usual Engine Stop), AMM TASK 71-00-00-700-819-F00.

(d) If the oil pressure display is satisfactory, then you corrected the fault.

(2) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

END OF TASK

807. Engine Oil Pressure is Intermittent or Blank - Fault Isolation

A. Description

(1) The oil pressure display on the center Display Unit (DU) is intermittent or blank.

B. Possible Causes

(1) Oil Pressure Sensor, T429

(2) EEC, M1818

(3) DEU, M1808 (DEU1) or M1809 (DEU2)

(4) J7 wire harness

(5) J8 wire harness

(6) Dual loss of EEC output buses.

(a) Oil temperature and EGT is blank.

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	10	C01361	DISPLAY DEU 1 HOLDUP

(2) For Engine 2:

(a) These are the circuit breakers:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

D. Related Data

(1) Refer to WDM 79-32-11.

E. Fault Isolation Procedure

(1) Do these steps to apply power to the EEC (to show INITIALIZING EEC X for Engine 1 or Engine 2):

(a) If you are not at one of the ENGINE 1 or ENGINE 2 BITE TEST displays, do these steps:

NOTE: The FMCS CDU does not support a type-ahead function. You must have the prompt on the FMCS CDU screen before you type in the response.

1) Push the INIT REF function key.

2) If the PERF INIT display shows, then push the line select key next to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

3) Push the line select key (LSK) next to the MAINT prompt.

(b) From the MAINT BITE INDEX, push the line select key (LSK) next to the ENGINE prompt.

NOTE: This LSK causes the ENGINE/EXCEED BITE INDEX screen to show.

(c) Push the LSK next to the Applicable ENGINE X, (X = 1 or 2) prompt.

NOTE: This LSK causes the ENGINE X BITE TEST MAIN MENU to show. Also, the ENGINE X LSK automatically applies power to the EEC and causes the EEC to initialize. The FMCS CDU will show INITIALIZING EEC X and EEC sorting Fault History Data, for a short time, just before the ENGINE X BITE TEST MAIN MENU shows.

(d) Look for a loss of the oil temperature and EGT displays on the center Display Unit (DU).

(2) If you can not see the oil temperature and EGT displays, then there is a dual data bus failure:

(a) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(b) Do the corrective action for related EEC data and DEU data maintenance messages that you find first.

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

2) If you do not find the maintenance messages or the problem continues, then continue.

(3) If you can see the oil temperature and EGT displays, then continue.

(4) Do this task: EEC BITE Procedure, 73-00 TASK 801.

(a) Look for maintenance message numbers 79-31091 (Ch A and Ch B, Eng 1) and 79-31092 (Ch A and Ch B, Eng 2).

1) If the maintenance message shows for the applicable engine, do the fault isolation procedure for the message first and then continue this procedure.

2) If the maintenance message does not show, then continue.

(5) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(a) Do the corrective action for related EEC data and DEU data maintenance messages that you find first.

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

(b) If you do not find the maintenance messages or the problem continues, then continue.

F. Repair Confirmation

(1) Do these steps:

(a) Put the applicable ENGINE START switch on the overhead panel, P5 to CONT.

NOTE: This step causes the EEC to power-up.

(b) If the oil pressure indication is shown on the display unit, you corrected the fault.

(c) Put the ENGINE START switch to OFF.

(2) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

——— END OF TASK ———

808. Engine Oil Quantity is High - Fault Isolation

A. Description

(1) The oil quantity display on the center Display Unit (DU) shows the oil quantity to be high.

B. Possible Causes

(1) Oil indication failure

(2) Oil Quantity Transmitter, M213

(3) Fuel in the oil due to:

(a) Main Oil/Fuel Heat Exchanger inter-circuit leakage

(b) Servo-Fuel Heater inter-circuit leakage.

(4) Oil system overservicing due to oil retention.

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	10	C01361	DISPLAY DEU 1 HOLDUP

(2) For Engine 2:

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

D. Related Data

(1) Refer to WDM 79-31-11.

E. Fault Isolation Procedure

(1) Open the applicable access doors on the right fan cowl panel.

Number	Name/Location
414AR	Oil Tank Access Door, Engine 1
424AR	Oil Tank Access Door, Engine 2

(2) Compare the oil level at the oil tank sight gage with the oil quantity display on the center DU.

(a) If the oil level in the sight gage agrees with the oil quantity display on the center DU, do the steps below for the oil level through the sight gage is high.

(b) If you can not see the oil level in the sight gage, add engine oil to the oil tank (AMM TASK 12-13-11-600-801).

(c) If the oil level in the sight gage does not agree with the oil quantity indication, then continue.

(3) Do these steps to examine the electrical power at the Oil Quantity Transmitter, M213:

(a) For the applicable engine, open these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

(b) Disconnect the electrical connector, DP1301, from the oil quantity transmitter.

(c) For the applicable engine, close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

(d) Look for 8 ±2 VDC between pins 1 (voltage) and 2 (ground).

1) If you find the voltage, replace the oil quantity transmitter (AMM TASK 79-31-01-000-801-F00 and AMM TASK 79-31-01-400-801-F00).

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

b) If the Repair Confirmation is not satisfactory, replace a subsequent LRU from the Possible Causes list.

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

(e) If you do not find the voltage, do these steps to examine the electrical power at the D30228 (Eng 1) or D30428 (Eng 2) strut receptacle:

1) For the applicable engine, open these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

2) Connect the electrical connector, DP1301, to the oil quantity transmitter.

3) Disconnect the electrical connector, DP1328, from the receptacle in the strut.

4) For the applicable engine, close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

5) Look for 8 ±2 VDC between pins 8 (voltage) and 20 (ground) of the applicable strut receptacle, D30228 (Eng 1) or D30428 (Eng 2).

a) If you find the voltage, replace the MW0313 wire harness (AMM TASK 71-51-03-000-801-F00 and AMM TASK 71-51-03-400-801-F00).

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

6) If you do not find the voltage, examine and repair the wires between the strut receptacle and the terminal block TB3102.

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

(4) If the oil level through the sight gage is high, do these steps:

(a) Open the filler cap to the oil tank.

(b) Do a smell check for fuel in the oil.

(c) If you confirm that the oil contains fuel, do these steps:

1) Replace the servo-fuel heater (AMM TASK 73-11-07-000-801-F00 and AMM TASK 73-11-07-400-801-F00).

2) Replace the main oil/fuel heat exchanger (AMM TASK 79-21-02-000-801-F00 and AMM TASK 79-21-02-400-801-F00).

3) Do this task: Drain the Engine Oil, AMM TASK 12-13-11-600-803.

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

(d) If you do not confirm that the oil contains fuel, do these steps:

1) Do this task: Drain the Engine Oil, AMM TASK 12-13-11-600-803.

2) To correct the oil retention problems, do this task: Engine Oil Consumption is High (Oil Quantity Decreases at a Quick Rate) - Fault Isolation, 79-05 TASK 801.

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

F. Repair Confirmation

(1) If the oil level is low, replenish the oil (AMM TASK 12-13-11-600-801).

(2) Close the applicable access doors on the right fan cowl panel.

Number	Name/Location
414AR	Oil Tank Access Door, Engine 1
424AR	Oil Tank Access Door, Engine 2

(3) Compare the oil level at the oil tank sight gage with the oil quantity display on the center DU.

(a) If the oil quantity indication shows and is accurate, then you corrected the fault.

1) Monitor the airplane on the subsequent flights.

——— END OF TASK ———

809. Engine Oil Quantity is Low - Fault Isolation

A. Description

(1) The oil quantity display on the center Display Unit (DU) shows low oil quantity.

B. Possible Causes

(1) High oil consumption

(2) Oil indication failure

(3) Oil system overservicing due to oil retention

(4) Oil quantity transmitter, M213.

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	10	C01361	DISPLAY DEU 1 HOLDUP

(2) For Engine 2:

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

D. Related Data

(1) Refer to WDM 79-31-11.

E. Fault Isolation Procedure

(1) Open the applicable access doors on the right fan cowl panel.

Number	Name/Location
414AR	Oil Tank Access Door, Engine 1
424AR	Oil Tank Access Door, Engine 2

(2) Compare the oil level at the oil tank sight gage with the oil quantity display on the center DU.

(a) If the oil level in the sight gage agrees with the oil quantity display on the center DU:

1) Do this task: Engine Oil Consumption is High (Oil Quantity Decreases at a Quick Rate) - Fault Isolation, 79-05 TASK 801.

(b) If you can not see the oil level in the sight gage, replenish the engine oil (AMM TASK 12-13-11-600-801).

(c) If the oil level in the sight gage does not agree with the oil quantity indication, then continue.

(3) Do one of these Fault Isolation Procedures:

(a) For Engine 1, do this task: Engine 1 Oil Quantity Invalid - Fault Isolation, 31-62 TASK 841.

(b) For Engine 2, do this task: Engine 2 Oil Quantity Invalid - Fault Isolation, 31-62 TASK 842.

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

F. Repair Confirmation

(1) Prepare for the Repair Confirmation:

(a) Do this task: Replenish the Engine Oil, AMM TASK 12-13-11-600-801.

1) Make sure that the oil tank sight gage and the oil quantity indication on the center DU show full and agree.

(2) Close the applicable access doors on the right fan cowl panel.

Number	Name/Location
414AR	Oil Tank Access Door, Engine 1
424AR	Oil Tank Access Door, Engine 2

(3) Monitor the oil consumption during the subsequent flight.

(a) If the problem continues:

1) Do this task: Engine Oil Consumption is High (Oil Quantity Decreases at a Quick Rate) - Fault Isolation, 79-05 TASK 801.

END OF TASK

810. Engine Oil Quantity is Inaccurate, Intermittent, Remains Constant or Blank - Fault Isolation

A. Description

(1) The oil quantity display is inaccurate, intermittent, constant or blank and this indication is known (or thought) to be wrong.

B. Possible Causes

(1) Oil Quantity Sensor, M213

(2) Wiring

(3) Display Electronic Unit (DEU) 1 (2), M1808 (M1809)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

D. Related Data

(1) WDM 79-31-11

E. Fault Isolation Procedure

(1) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(a) Do the corrective action for internal DEU problems or engine oil quantity maintenance messages that you find first.

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

(b) If you do not find the maintenance messages, then continue.

(2) Examine the electrical connector, DP1301, at the Oil Quantity Sensor, M213:

(a) For the applicable engine, open these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

(b) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(c) See if the electrical connector, DP1301, is correctly connected to the Oil Quantity Sensor, M213, and continue.

(d) Disconnect the electrical connector, DP1301, from the Oil Quantity Sensor, M213.

(e) Visually examine the Oil Quantity Sensor, M213 receptacle and wire harness connector (Standard Engine Wiring and Equipment Check, AMM TASK 70-70-01-200-801-F00).

1) If the Oil Quantity Sensor, M213 receptacle is damaged, replace the Oil Quantity Sensor, M213. These are the tasks:

- Oil Quantity Transmitter Removal, AMM TASK 79-31-01-000-801-F00
- Oil Quantity Transmitter Installation, AMM TASK 79-31-01-400-801-F00

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

b) If the Repair Confirmation is not satisfactory, open the circuit breakers above and continue.

2) If the harness connector is damaged, replace the Wire Harness, MW0313. These are the tasks:

- Nacelle Wiring Harnesses Removal, AMM TASK 71-51-03-000-801-F00
- Nacelle Wiring Harnesses Installation, AMM TASK 71-51-03-400-801-F00

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

b) If the Repair Confirmation is not satisfactory, open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, open the circuit breakers above and continue.

(f) If you did not find a problem, then continue.

(3) Do this check for 8 ±2 Volts Direct Current (VDC) at the Oil Quantity Sensor, M213:

(a) Disconnect the electrical connector, DP1301, from the Oil Quantity Sensor, M213.

(b) For the applicable engine, close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

(c) Do a check for 8 ±2 VDC between pin 1 and pin 2 (ground).

1) If there is 8 ±2 VDC at pin 1 of DP1301, do these steps:

a) Replace the Oil Quantity Sensor, M213. These are the tasks:

- Oil Quantity Transmitter Removal, AMM TASK 79-31-01-000-801-F00
- Oil Quantity Transmitter Installation, AMM TASK 79-31-01-400-801-F00

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

c) If the Repair Confirmation is not satisfactory, replace a subsequent Line Replaceable Unit (LRU) from the Possible Causes list.

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

(d) If there is not 8 ±2 VDC at pin 1 of DP1301, do this step and continue:

1) Re-connect the electrical connector, DP1301, to the Oil Quantity Sensor, M213.

(4) Examine the electrical connector, DP1328, from the strut receptacle:

(a) For the applicable engine, open these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

(b) See if the electrical connector, DP1328, is correctly connected to the strut receptacle, and continue.

(c) Disconnect the electrical connector, DP1328, from the strut receptacle.

(d) Visually examine the strut receptacle and wire harness connector (Standard Engine Wiring and Equipment Check, AMM TASK 70-70-01-200-801-F00).

1) If the strut receptacle is damaged, repair or replace the receptacle (SWPM Ch 20).

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

b) If the Repair Confirmation is not satisfactory, open the circuit breakers above and continue.

2) If the harness connector is damaged, replace the wire harness, MW0313. These are the tasks:

- Nacelle Wiring Harnesses Removal, AMM TASK 71-51-03-000-801-F00
- Nacelle Wiring Harnesses Installation, AMM TASK 71-51-03-400-801-F00

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

b) If the Repair Confirmation is not satisfactory, open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, open the circuit breakers above and continue.

(5) Do a check for 8 ±2 VDC at the strut receptacle:

(a) For the applicable engine, close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

(b) Do a check for 8 ±2 VDC between pin 8 and pin 20 (ground) of the applicable strut receptacle Eng 1 (Eng 2), D30228 (D30428).

1) If there is 8 ±2 VDC at pin 8, replace the MW0313 wire harness. These are the tasks:
   - Nacelle Wiring Harnesses Removal, AMM TASK 71-51-03-000-801-F00
   - Nacelle Wiring Harnesses Installation, AMM TASK 71-51-03-400-801-F00
   a) Do the Repair Confirmation at the end of this task.
2) If there is not 8 ±2 VDC at pin 8, do these steps:
   a) Examine and repair the wires between the strut receptacle and the terminal block, TB3102.
   b) Re-connect the electrical connector, DP1328 to the receptacle in the strut.
   c) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) If not already done, do these steps to prepare for the Repair Confirmation:

(a) For the applicable engine, open these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

(b) Connect the electrical connector, DP1328, to the applicable receptacle in the strut.

(c) For the applicable engine, close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

(2) Prepare for the Repair Confirmation:

(a) Do this task: Replenish the Engine Oil, AMM TASK 12-13-11-600-801.

1) Make sure that the oil tank sight gage and the oil quantity indication on the center DU show full and agree.

(3) Compare the oil level at the oil tank sight gage with the oil quantity display on the center DU.

(a) If the oil quantity indication shows and is accurate, then you corrected the problem.

1) Monitor the airplane on the subsequent flights.

(4) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

END OF TASK

811. Engine Oil Temperature is High (Amber) - Fault Isolation

A. Description

(1) The oil temperature display on the center Display Unit (DU) shows the AMBER Alert.

B. Possible Causes

(1) Engine bearing failure

(2) Oil system overservicing due to oil retention

(3) IDG overheat

(4) Lubrication unit

(5) Fuel in the oil due to:

(a) Main oil/fuel heat exchanger inter-circuit leakage.

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(2) For Engine 2:

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

D. Related Data

(1) Refer to WDM 79-34-11.

E. Fault Isolation Procedure

(1) Do this task: Chip Detectors and Scavenge Screens - Inspection, AMM TASK 79-00-00-200-804-F00.

(a) If there is unusual contamination, do the corrective action for the unusual contamination.

(b) If there is no unusual contamination, do the Repair Confirmation at the end of this task.

(2) Do a check of the pilots' log for IDG overheat fault.

(a) If you find that an IDG overheat fault occurred, do the applicable fault isolation procedure for that fault.

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

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If you do not find that an IDG overheat fault occurred, then continue.

(3) Examine the oil level in the oil tank:

(a) Use the center DU in the flight compartment to examine the quantity of engine oil in the tank.

(b) If the oil level is high in the tank, do this task: Engine Oil Quantity is High - Fault Isolation, 79-05 TASK 808.

(c) If the oil level is abnormally low, do this task: Engine Oil Consumption is High (Oil Quantity Decreases at a Quick Rate) - Fault Isolation, 79-05 TASK 801.

(d) If the oil quantity is satisfactory, then continue.

(4) Replace the lubrication unit (AMM TASK 79-21-01-000-801-F00 and AMM TASK 79-21-01-400-801-F00).

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

(b) If the Repair Confirmation is not satisfactory, then continue.

(5) Replace the main oil/fuel heat exchanger (AMM TASK 79-21-02-000-801-F00 and AMM TASK 79-21-02-400-801-F00).

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

F. Repair Confirmation

(1) Monitor the oil temperature on the display as you do these steps:

NOTE: If engine operation is necessary as a post-installation test after you repair or replace a component, you can do this step at the same time.

(a) Do this task: Start the Engine Procedure (Selection), AMM TASK 71-00-00-800-807-F00.

(b) Let the engine become stable at idle for a minimum of 5 minutes (AMM TASK 71-00-00-700-819-F00).

(c) If the oil temperature display is satisfactory, then you corrected the fault.

(2) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

——— END OF TASK ———

812. Engine Oil Temperature is High (Red) - Fault Isolation

A. Description

(1) The oil temperature display on the center Display Unit (DU) shows the RED Alert.

B. Possible Causes

(1) Engine bearing failure

(2) Oil system overservicing due to oil retention

(3) Lubrication unit

(4) Fuel in the oil due to:

(a) Main oil/fuel heat exchanger inter-circuit leakage.

C. Fault Isolation Procedure

(1) Do this task: Inspection After Engine Operations Above the Limits and High Engine Stress, AMM TASK 71-00-00-800-804-F00.

(a) If the engine is not in the specified limits, replace the engine (AMM TASK 71-00-02-000-801-F00 and AMM TASK 71-00-02-400-801-F00).

(b) If the engine is in the specified limits, then continue.

(2) Do this task: Chip Detectors and Scavenge Screens - Inspection, AMM TASK 79-00-00-200-804-F00.

(a) If there is unusual contamination, do the corrective action for the unusual contamination.

(b) If there is no unusual contamination, do the Repair Confirmation at the end of this task.

(3) Examine the oil level in the oil tank:

(a) Use the center DU in the flight compartment to examine the quantity of engine oil in the oil tank.

(b) If the oil level is high in the tank, do this task: Engine Oil Quantity is High - Fault Isolation, 79-05 TASK 808.

(c) If the oil level is abnormally low, do this task: Engine Oil Consumption is High (Oil Quantity Decreases at a Quick Rate) - Fault Isolation, 79-05 TASK 801.

(d) If the oil quantity is satisfactory, then continue.

(4) Replace the lubrication unit (AMM TASK 79-21-01-000-801-F00 and AMM TASK 79-21-01-400-801-F00).

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

(b) If the Repair Confirmation is not satisfactory, then continue.

(5) Replace the main oil/fuel heat exchanger (AMM TASK 79-21-02-000-801-F00 and AMM TASK 79-21-02-400-801-F00).

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

D. Repair Confirmation

(1) Monitor the oil temperature on the display as you do these steps:

NOTE: If engine operation is necessary as a post-installation test after you repair or replace a component, you can do this step at the same time.

(a) Do this task: Start the Engine Procedure (Selection), AMM TASK 71-00-00-800-807-F00.

(b) Let the engine become stable at idle for a minimum of 5 minutes (AMM TASK 71-00-00-700-819-F00).

(c) If the oil temperature display is satisfactory, then you corrected the fault.

(2) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

——— END OF TASK ———

815. Engine Oil Temperature is Intermittent or Blank - Fault Isolation

A. Description

(1) The oil temperature indicator on the center display unit (DU) is intermittent or blank.

B. Possible Causes

(1) Dual loss of EEC output buses

(a) Oil pressure and EGT is blank.

(2) Oil indication failure

(3) Oil temperature sensor, T432

(4) EEC, M1818

(5) DEU, M1808 (DEU1) or M1809 (DEU2)

(6) J6 wire harness.

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(2) For Engine 2:

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

D. Related Data

(1) Refer to WDM 79-34-11.

E. Fault Isolation Procedure

(1) Do these steps to apply power to the EEC (to show INITIALIZING EEC X for Engine 1 or Engine 2):

(a) If you are not at one of the ENGINE 1 or ENGINE 2 BITE TEST displays, then do these steps:

NOTE: The FMCS CDU does not support a type-ahead function. You must have the prompt on the FMCS CDU screen before you type in the response.

1) Push the INIT REF function key.

2) If the PERF INIT display shows, then push the line select key next to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

3) Push the line select key (LSK) next to the MAINT prompt.

(b) From the MAINT BITE INDEX, push the line select key (LSK) next to the ENGINE prompt.

NOTE: This LSK causes the ENGINE/EXCEED BITE INDEX screen to show.

(c) Push the LSK next to the Applicable ENGINE X, (X = 1 or 2) prompt.

NOTE: This LSK causes the ENGINE X BITE TEST MAIN MENU to show. Also, the ENGINE X LSK automatically applies power to the EEC and causes the EEC to initialize. The FMCS CDU will show INITIALIZING EEC X and EEC sorting Fault History Data, for a short time, just before the ENGINE X BITE TEST MAIN MENU shows.

(d) Look for a loss of the oil pressure and EGT indicators on the center Display Unit (DU).

(2) If you can not see the oil pressure and EGT indicators, then there is a dual data bus failure:

(a) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(b) Do the corrective action for related EEC data and DEU data maintenance messages that you find first.

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

2) If you do not find the maintenance messages or the problem continues, then continue.

(3) If you can see the oil pressure and EGT indicators, then continue.

(4) Do this task: EEC BITE Procedure, 73-00 TASK 801.

(a) Look for maintenance message numbers 79-31101 (Ch A and Ch B, Eng 1) and 79-31102 (Ch A and Ch B, Eng 2).

1) If the maintenance message shows for the applicable engine, do the fault isolation procedure for the message first and then continue this procedure.

2) If the maintenance message does not show, then continue.

(5) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(a) Do the corrective action for related EEC data and oil temperature sensor maintenance messages that you find first.

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

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If you do not find the maintenance messages, then continue.

F. Repair Confirmation

(1) Do these steps:

(a) Put the applicable ENGINE START switch on the overhead panel, P5 to CONT.

NOTE: This step causes the EEC to power-up.

(b) If the oil pressure indication is shown on the display unit, you corrected the fault.

(c) Put the ENGINE START switch to OFF.

(2) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

——— END OF TASK ———

817. OIL FILTER BYPASS Message Shows on the Engine Display - Fault Isolation

A. Description

(1) The OIL FILTER BYPASS Message shows when one or more of these conditions occurs:

(a) The Oil Filter is in Impeding Bypass.

(b) The Electronic Engine Control (EEC), M1818, senses that the Oil Filter signals disagree.

(c) The Scavenge Oil Filter Clogging Transmitter, S125, fails.

(d) There is a problem in the wiring and connectors between the Scavenge Oil Filter Clogging Transmitter, S125, and the EEC, M1818.

(2) This task is also for these maintenance messages:

(a) 79-11121 THE OIL FILTER SIGNALS DISAGREE (CH A, ENG 1)

(b) 79-11122 THE OIL FILTER SIGNALS DISAGREE (CH A, ENG 2)

(c) 79-21121 THE OIL FILTER SIGNALS DISAGREE (CH B, ENG 1)

(d) 79-21122 THE OIL FILTER SIGNALS DISAGREE (CH B, ENG 2)

(e) 79-31121 THE OIL FILTER SIGNALS DISAGREE (CH A and CH B, ENG 1)

(f) 79-31122 THE OIL FILTER SIGNALS DISAGREE (CH A and CH B, ENG 2)

B. Possible Causes

(1) Scavenge Oil Filter Element

(2) Scavenge Oil Filter Clogging Transmitter, S125

(3) J7 Wire Harness

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1
E	3	C01321	ENGINE FUEL ENGINE 2 HPSOV CONT
E	5	C01320	ENGINE FUEL ENGINE 1 HPSOV CONT

D. Related Data

(1) Component Location (79-05 TASK SUPPORT Figure 301)

(2) WDM 79-33-11

E. Fault Isolation Procedure

(1) Do the EEC BITE Procedure, 73-00 TASK 801.

(2) Look for these CDU maintenance messages:

- 79-11121 THE OIL FILTER SIGNALS DISAGREE (CH A, ENG 1)
- 79-11122 THE OIL FILTER SIGNALS DISAGREE (CH A, ENG 2)
- 79-21121 THE OIL FILTER SIGNALS DISAGREE (CH B, ENG 1)
- 79-21122 THE OIL FILTER SIGNALS DISAGREE (CH B, ENG 2)
- 79-31121 THE OIL FILTER SIGNALS DISAGREE (CH A and CH B, ENG 1)
- 79-31122 THE OIL FILTER SIGNALS DISAGREE (CH A and CH B, ENG 2)

(a) If one or more of THE OIL FILTER SIGNALS DISAGREE maintenance messages shows, do these steps:

1) Do a visual inspection of the electrical connectors and receptacles of the Scavenge Oil Filter Clogging Transmitter, S125, EEC, M1818, and J7 Wire Harness.
   a) Make sure that the Electrical Connectors of J7 Wire Harness are correctly connected to the Scavenge Oil Filter Clogging Transmitter, S125, and EEC Receptacles.
      <1> If a connector is not correctly connected and you find no other problems, clean and connect the connector again.
      <2> Do the Repair Confirmation at the end of this task.
2) Do this task: Chip Detectors and Scavenge Screens - Inspection, AMM TASK 79-00-00-200-804-F00.
   a) If you find contamination, do the applicable corrective action(s) and continue.
3) Replace the applicable Scavenge Oil Filter Clogging Transmitter, S125. These are the tasks:
   - Scavenge Oil Filter Clogging Transmitter Removal, AMM TASK 79-21-07-000-801-F00
   - Scavenge Oil Filter Clogging Transmitter Installation, AMM TASK 79-21-07-400-801-F00

   a) Do the Repair Confirmation at the end of this task.
4) Replace the applicable J7 Wire Harness. These are the tasks:
   - Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00
   - Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00

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

(b) If none of THE OIL FILTER SIGNALS DISAGREE maintenance messages shows, continue.

(3) On the Flight Management Computer System (FMCS) Control Display Unit (CDU), access to the CDU INPUT MONITORING/OIL FILTER Screen.

(a) Record the FILTER BYPASS status.

NOTE: These are the usual states, but there could be other states.

FILTER INPUTS	OIL FILTER BYPASS STATE "NOT CLOGGED"	OIL FILTER BYPASS STATE "CLOGGED"
SW 1 CH A SW 1 CH B	CLOSED	OPEN
SW 2 CH A SW 2 CH B	OPEN	CLOSED

(b) If the test shows that the FILTER BYPASS status is "CLOGGED", do these steps:

1) Do this task: Chip Detectors and Scavenge Screens - Inspection, AMM TASK 79-00-00-200-804-F00.
   a) If you find contamination, do the applicable corrective action(s) and continue.
2) Replace the applicable Scavenge Oil Filter Clogging Transmitter, S125. These are the tasks:
   - Scavenge Oil Filter Clogging Transmitter Removal, AMM TASK 79-21-07-000-801-F00
   - Scavenge Oil Filter Clogging Transmitter Installation, AMM TASK 79-21-07-400-801-F00

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

(c) If the test shows that the FILTER BYPASS status is “NOT CLOGGED”, do these steps:

1) Do this task: Chip Detectors and Scavenge Screens - Inspection, AMM TASK 79-00-00-200-804-F00.

a) If you find contamination, do the applicable corrective action(s) and continue.

2) Remove and examine the applicable Scavenge Oil Filter Element. This is the task: Scavenge Oil Filter Element Removal, AMM TASK 79-21-06-000-801-F00.

NOTE: Fine dust particles can collect on the inner layers of the filter. It is recommended to send the Oil Scavenge Filter in laboratory to proceed with specific analysis procedure in order to determine the volume of non-magnetic particles.

a) If you find contamination, do the applicable corrective action(s) and continue.

b) If you find contamination on the Scavenge Oil Filter Element, remove and examine the applicable Oil Supply Filter Element. This is the task: Oil Supply Filter Removal, AMM TASK 79-21-03-000-802-F00.

NOTE: The Oil Supply Filter inspection is a way to know if the Scavenge Oil Filter was bypassed and the Oil Exchangers were contaminated with bypassed debris.

NOTE: Fine dust particles can collect on the inner layers of the filter. It is recommended to send the Oil Supply Filter in laboratory to proceed with the specific analysis procedure.

c) If the Supply and Scavenge Filters have the same type of contamination and the Oil Supply Filter has a lower quantity of contamination, do these steps:

<1> Replace the Main Oil/Fuel Heat Exchanger. These are the tasks:

- Main Oil/Fuel Heat Exchanger Removal, AMM TASK 79-21-02-000-801-F00
- Main Oil/Fuel Heat Exchanger Installation, AMM TASK 79-21-02-400-801-F00

<2> Replace the Servo Fuel Heater. These are the tasks:

- Servo Fuel Heater Removal, AMM TASK 73-11-07-000-801-F00
- Servo Fuel Heater Installation, AMM TASK 73-11-07-400-801-F00

<3> Install a new Oil Supply Filter. This is the task: Oil Supply Filter Installation, AMM TASK 79-21-03-400-801-F00.

<4> Install a new Scavenge Oil Filter Element. This is the task: Scavenge Oil Filter Element Installation, AMM TASK 79-21-06-400-801-F00.

d) If you find non-magnetic particles during laboratory analysis, send the result to CFM.

<1> Continue operation and perform a new scavenge filter analysis in laboratory after 100FH.

<2> If you find a quantity higher than 0.02mg/FH since new filter installation (2.0mg after 100FH), continue operation with a 100 FH scavenge filter replacement interval until filter is found with less than 0.02mg/FH of non-magnetic particles for three consecutive inspections.

<3> If you find a quantity lower than 0.02mg/FH since new filter installation (2.0mg after 100FH), then continue.

e) Install a new Scavenge Oil Filter Element. This is the task: Scavenge Oil Filter Element Installation, AMM TASK 79-21-06-400-801-F00.

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

4) Replace the applicable Scavenge Oil Filter Clogging Transmitter, S125. These are the tasks:

- Scavenge Oil Filter Clogging Transmitter Removal, AMM TASK 79-21-07-000-801-F00
- Scavenge Oil Filter Clogging Transmitter Installation, AMM TASK 79-21-07-400-801-F00

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

F. Repair Confirmation

(1) Do this task: Test 3A - Idle-Power Leak Check, AMM TASK 71-00-00-700-801-F00.

(a) If the OIL FILTER BYPASS Message shows again during the test, continue the Fault Isolation Procedure at the subsequent step.

(b) If the OIL FILTER BYPASS Message does not show again on the Engine Display during the test, then you corrected the problem.

1) Record the steps that you did to find and repair this problem.

(2) Monitor the airplane on the subsequent flights.

(a) If the OIL FILTER BYPASS Message does not show again on subsequent flights, then you corrected the problem.

(b) If the OIL FILTER BYPASS Message shows again, continue the Fault Isolation as necessary.

——— END OF TASK ———

818. OIL FILTER BYP message does not show during the EEC Test - Fault Isolation

A. Description

(1) The OIL FILTER BYP message does not show during the EEC Test.

B. Possible Causes

(1) DEU, M1808 (DEU1) or M1809 (DEU2)

(2) EEC, M1818

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP

(Continued)

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

(2) For Engine 2:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

D. Related Data

(1) Refer to WDM 31-62-24 and WDM 79-33-11.

E. Fault Isolation Procedure

(1) Do this task: CDS BITE Procedure, 31-62 TASK 801.

(a) If the CDS BITE test shows an internal DEU or EEC data fault, go to the fault isolation task for the applicable maintenance message to correct the fault.

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

2) If the Repair Confirmation is not satisfactory, then continue.

(b) If the CDS BITE test does not show an internal DEU fault or EEC data fault, then continue.

(2) Replace the DEU from the most likely possible causes list (AMM TASK 31-62-21-000-801 and AMM TASK 31-62-21-400-801).

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

(b) If the Repair Confirmation is not satisfactory, replace the subsequent LRU from the Possible Causes list.

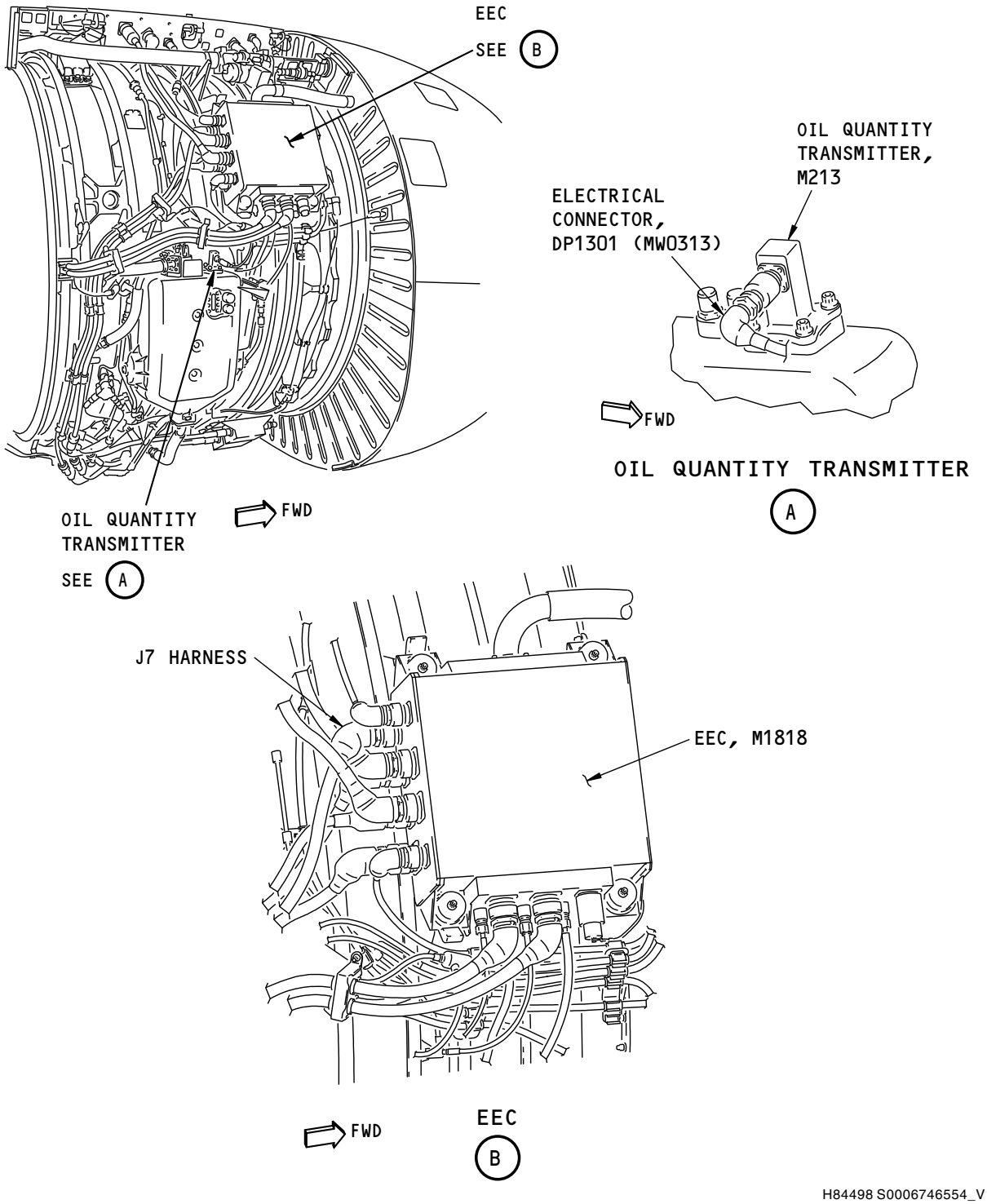
1) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do this task: EEC TEST, AMM TASK 73-21-00-700-804-F00.

(a) If the OIL FILTER BYP message shows and goes off correctly during the test, then you corrected the fault.

END OF TASK



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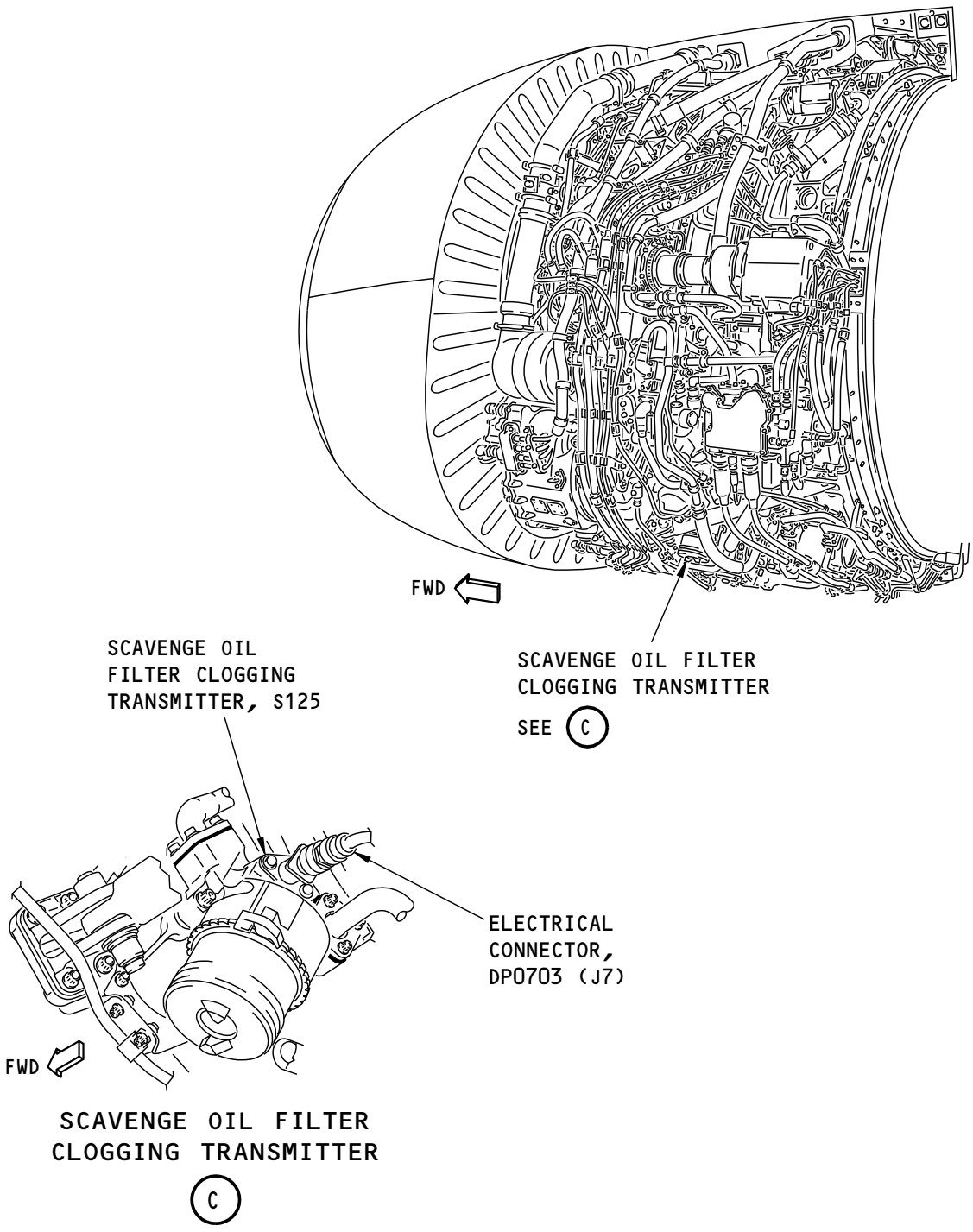
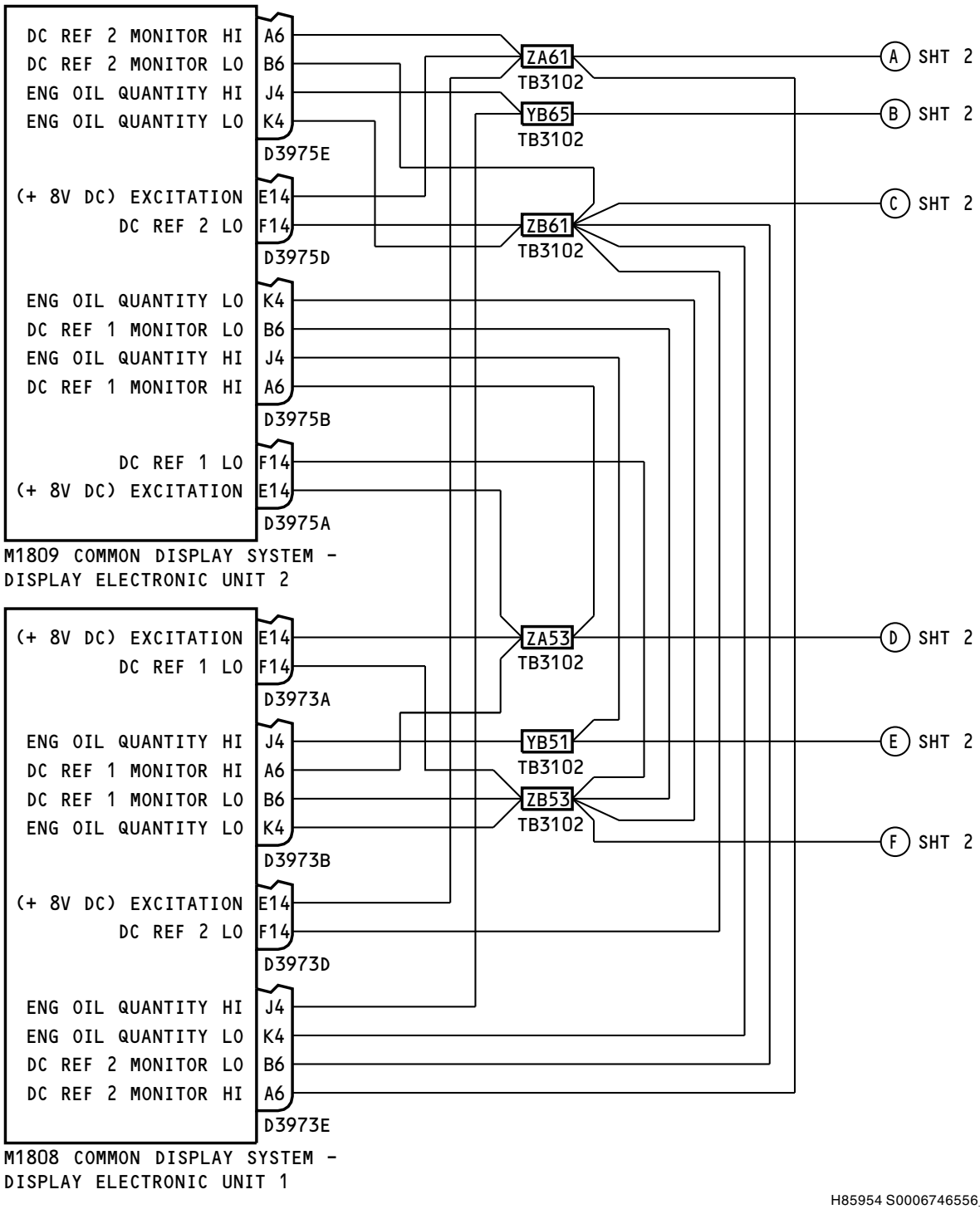
Engine Oil Indicating System - Component Location
Figure 301/79-05-00-990-801-F00 (Sheet 1 of 2)



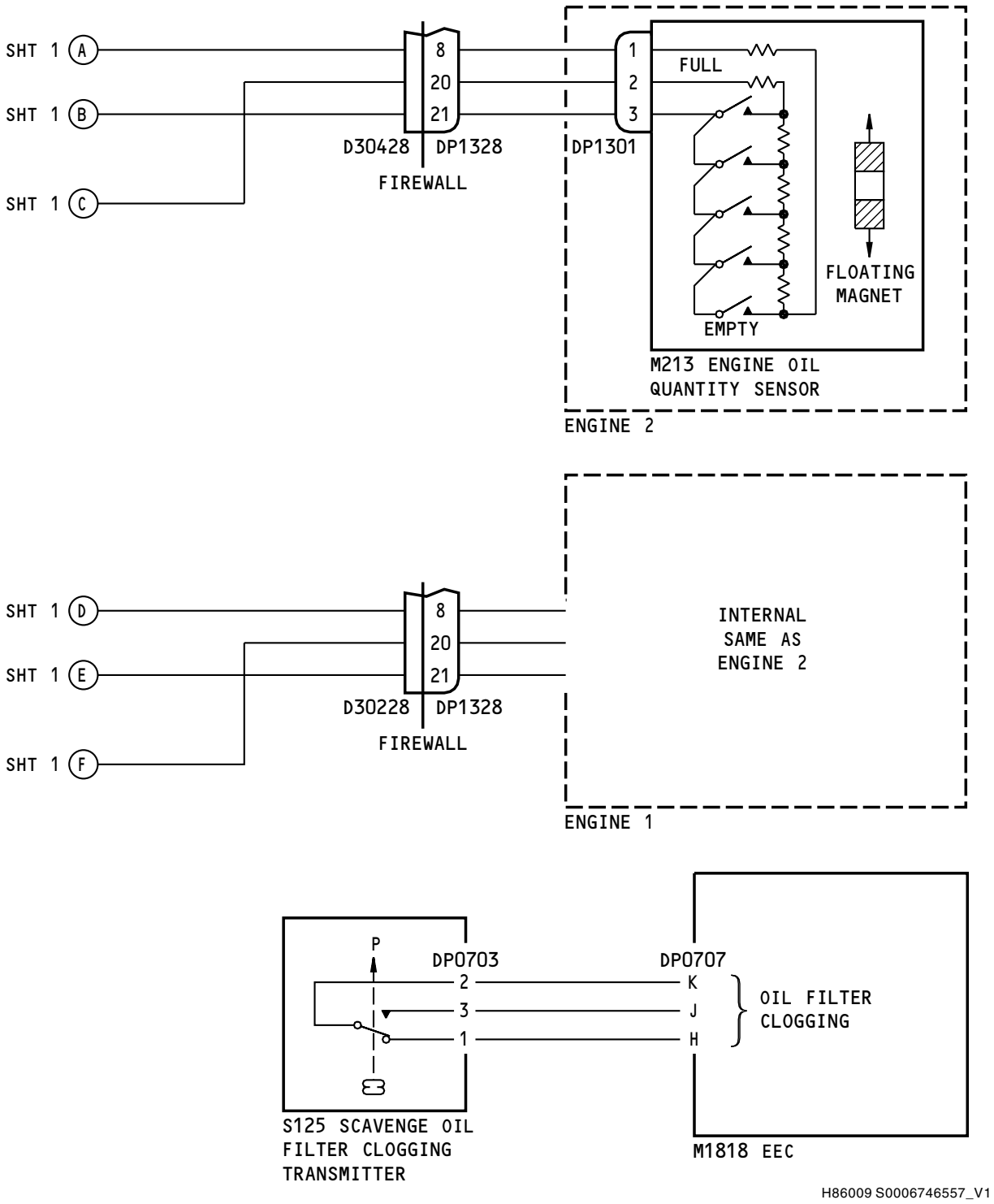
H84511 S0006746555_V1

Engine Oil Indicating System - Component Location
Figure 301/79-05-00-990-801-F00 (Sheet 2 of 2)

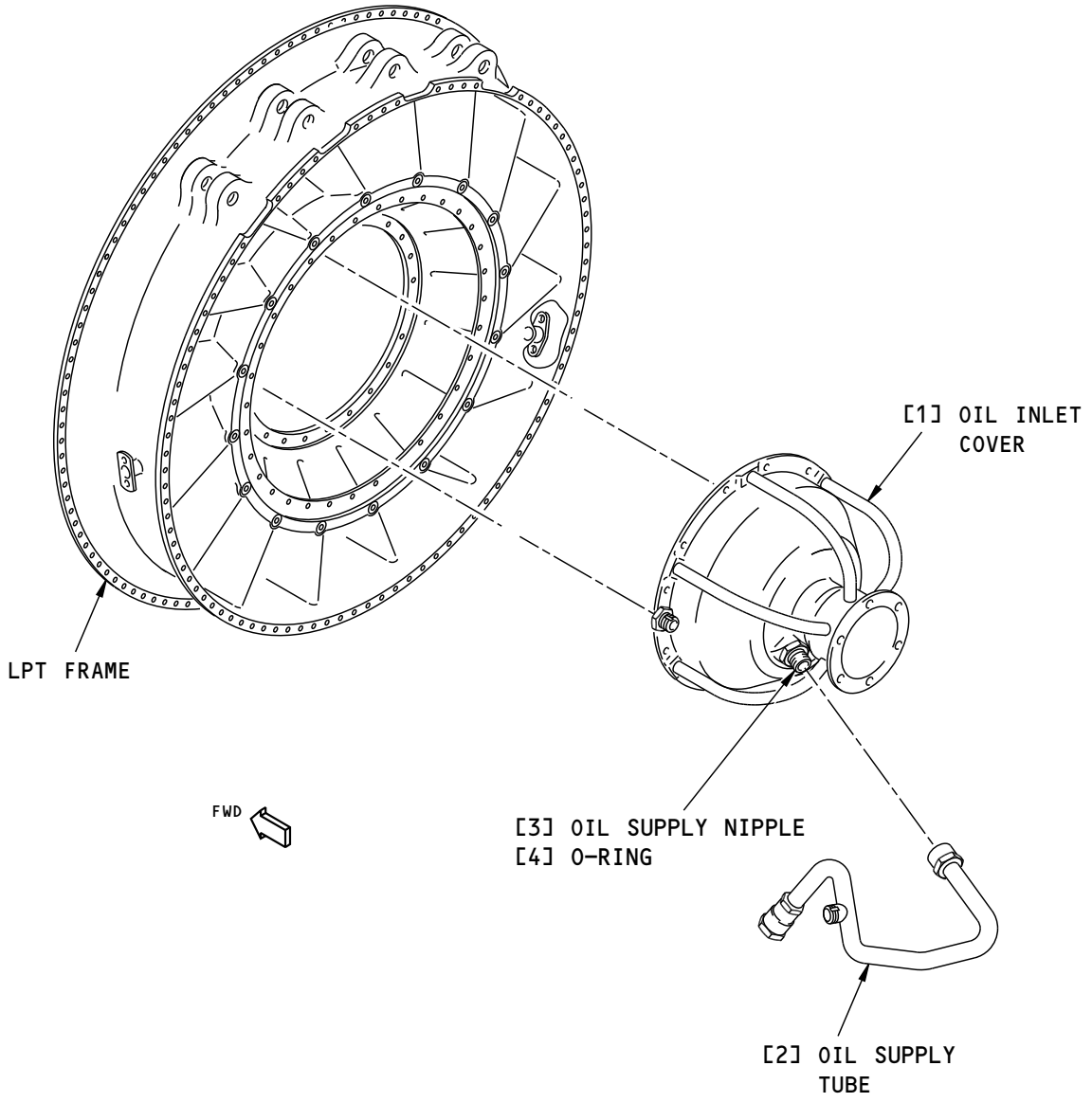


H85954 S0006746556_V1

Engine Oil Indicating System - Simplified Schematic
Figure 302/79-05-00-990-802-F00 (Sheet 1 of 2)



Engine Oil Indicating System - Simplified Schematic
Figure 302/79-05-00-990-802-F00 (Sheet 2 of 2)



2505600 S0000588846_V1

Oil Supply Nipple
Figure 303/79-05-00-990-803-F00

801. The Engine Oil Pressure Signal (PEO) Is Out of Range - Fault Isolation

A. Description

(1) This task is for these maintenance message numbers:

(a) 79-11091, 79-11092, 79-21091, 79-21092, 79-31091 and 79-31092.

(2) For the maintenance message 79-X109Y; where X = EEC Channel (1=Channel A, 2=Channel B, 3=Dual Channel), and Y = Engine Position (1=Eng 1, 2=Eng 2), do the applicable Fault Isolation:

(a) If X=1, do the Fault Isolation Procedure - Single Channel Fault for channel A.

(b) If X=2, do the Fault Isolation Procedure - Single Channel Fault for channel B.

(c) If X=1 and 2 (two messages), or X=3, do the Fault Isolation Procedure - Dual Channel Fault.

(3) The EEC detects that the Pressure Engine Oil (PEO) signal is out of the valid range.

(a) This fault is reported on the active channel of the EEC when the engine is in operation.

(4) Also, because the Channel A excitation circuit for the engine oil pressure (PEO) position LVDT and the thrust lever angle (TLA) resolver are from a common source in the EEC, a short in one of the two excitation circuits can set Channel A fault messages for the two systems.

(5) Also, because the Channel B excitation circuit for the engine oil pressure (PEO) position LVDT and the thrust lever angle (TLA) resolver are from a common source in the EEC, a short in one of the two excitation circuits can set Channel B fault messages for the two systems.

B. Possible Causes

(1) Oil pressure sensor, T429

(2) EEC, M1818

(3) J7 (Ch A) or J8 (Ch B) wire harness.

NOTE: For more information, see the Description section.

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(2) For Engine 2:

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

D. Related Data

(1) Component Location (79-21 TASK SUPPORT Figure 301)

(2) Simplified Schematic (79-21 TASK SUPPORT Figure 302)

(3) (SSM 79-32-11)

(4) (WDM 79-32-11)

E. Initial Evaluation

(1) Do this task: EEC BITE Procedure, 73-00 TASK 801.

(a) If one of these groups of maintenance messages show, then do the applicable Fault Isolation Procedure:

NOTE: These messages can be caused by a short in the excitation circuit for the thrust lever angle (TLA) resolver or the LVDT for the engine oil pressure (PEO). For more information, see the Description section.

1) 79-11091 and 73-11451 (Engine 1, Ch A)

a) Do this task: FADEC2/FADEC3 (Ch A) Excitation Group 1: Thrust Lever Angle Resolver and PEO (CH A) LVDT Excitation Circuit Fault - Fault Isolation, 75-34 TASK 813.

2) 79-11092 and 73-11452 (Engine 2, Ch A)

a) Do this task: FADEC2/FADEC3 (Ch A) Excitation Group 1: Thrust Lever Angle Resolver and PEO (CH A) LVDT Excitation Circuit Fault - Fault Isolation, 75-34 TASK 813.

3) 79-21091 and 73-21451 (Engine 1, Ch B)

a) Do this task: FADEC2/FADEC3 (Ch B) Excitation Group 1: Thrust Lever Angle Resolver and PEO (CH B) LVDT Excitation Circuit Fault - Fault Isolation, 75-34 TASK 814.

4) 79-21092 and 73-21452 (Engine 2, Ch B).

a) Do this task: FADEC2/FADEC3 (Ch B) Excitation Group 1: Thrust Lever Angle Resolver and PEO (CH B) LVDT Excitation Circuit Fault - Fault Isolation, 75-34 TASK 814.

(2) Do these steps to find out if the fault is still active:

(a) Do this task: EEC TEST, AMM TASK 73-21-00-700-804-F00.

(b) If maintenance message 79-11091 (Ch A, Eng 1), 79-11092 (Ch A, Eng 2), 79-21091 (Ch B, Eng 1) or 79-21092 (Ch B, Eng 2) shows, then do the Fault Isolation Procedure - Single Channel Fault for the applicable channel.

(c) If maintenance message 79-31091 (Ch A and B, Eng 1) or 79-31092 (Ch A and B, Eng 2) shows, then do the Fault Isolation Procedure - Dual Channel Fault.

(d) If the maintenance message does not show on the FMCS CDU, then the Initial Evaluation has shown that the fault is not active at this time and you have an intermittent fault.

1) If you cannot find the fault at this time, then the Fault Isolation Procedure cannot isolate the fault.

2) For an intermittent fault you must use your judgment, your airline policies, and the Possible Causes list to make the decision if you will try to correct the fault.

3) If you will try to correct the fault, it is recommended that you do these steps:

a) Do the visual checks of the electrical connectors in the applicable fault isolation procedure below.

b) Use the WDM references to identify intermediate electrical connections in the wire harness and do a visual check.

c) If you find no problems, then replace components as listed in the Possible Causes list above.

4) Monitor the airplane on the subsequent flight.

F. Fault Isolation Procedure - Single Channel Fault

(1) Do the Initial Evaluation to see if there is an excitation circuit fault and if the fault is still active.

NOTE: A fault in the excitation circuit of other LRU's could cause this fault. For more information, see the Description section.

(2) Prepare for the procedure:

(a) For Engine 1:

1) 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
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(b) For Engine 2:

1) Open these circuit breakers and install safety tags:

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(c) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(3) Examine the electrical connector, DP0705 (Ch A) or DP0805 (Ch B), at the oil pressure sensor:

(a) See if the electrical connector, DP0705 (Ch A) or DP0805 (Ch B), is correctly connected to the oil pressure sensor, and continue.

(b) Disconnect the electrical connector, DP0705 (Ch A) or DP0805 (Ch B), from the oil pressure sensor.

(c) Visually examine the oil pressure sensor receptacle and wire harness connector (AMM TASK 70-70-01-200-801-F00).

1) If the oil pressure sensor receptacle is damaged, then replace the oil pressure sensor, T429.

These are the tasks:

Oil Pressure Sensor Removal, AMM TASK 79-32-01-000-801-F00,

Oil Pressure Sensor Installation, AMM TASK 79-32-01-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If the harness connector is damaged, then replace the wire harness, J7 (Ch A) or J8 (Ch B).

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(4) Do these steps to isolate the oil pressure sensor as the cause of the fault:

(a) Connect the electrical connector, DP0705 OIL PRESS-A (Ch A), on the oil pressure sensor receptacle, CH B.

(b) Connect the electrical connector, DP0805 OIL PRESS-B (Ch B), on the oil pressure sensor receptacle, CH A.

(c) Do this task: EEC TEST, AMM TASK 73-21-00-700-804-F00.

(d) If the maintenance message does not show, then do these steps:

1) Re-connect the electrical connector, DP0705 OIL PRESS-A (Ch A), on the oil pressure sensor receptacle, CH A.

2) Re-connect the electrical connector, DP0805 OIL PRESS-B (Ch B), on the oil pressure sensor receptacle, CH B.

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

(e) If maintenance message shows on the other channel, then replace the oil pressure sensor, T429.

These are the tasks:

Oil Pressure Sensor Removal, AMM TASK 79-32-01-000-801-F00,

Oil Pressure Sensor Installation, AMM TASK 79-32-01-400-801-F00.

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

(f) If maintenance message shows on the same channel, then do these steps and continue:

1) Re-connect the electrical connector, DP0705 OIL PRESS-A (Ch A), on the oil pressure sensor receptacle, CH A.

2) Re-connect the electrical connector, DP0805 OIL PRESS-B (Ch B), on the oil pressure sensor receptacle, CH B.

(5) Examine the electrical connector, DP0707 (Ch A) or DP0808 (Ch B), at the EEC:

NOTE: The electrical connector, DP0707 (Ch A), is on the J7 wire harness. The electrical connector, DP0808 (Ch B), is on the J8 wire harness.

(a) See if the electrical connector, DP0707 (Ch A) or DP0808 (Ch B), is correctly connected to the EEC, and continue.

(b) Disconnect the electrical connector, DP0707 (Ch A) or DP0808 (Ch B), from the EEC.

(c) Visually examine the EEC receptacle and wire harness connector (AMM TASK 70-70-01-200-801-F00).

1) If the EEC receptacle is damaged, then replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If the harness connector is damaged, then replace the wire harness, J7 (Ch A) or J8 (Ch B).

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(6) Replace the wire harness, J7 (Ch A) or J8 (Ch B).

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

(b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(7) If the fault was found by the Initial Evaluation, then do one of these steps:

NOTE: Because an excitation circuit fault in a different system can set this fault, the replacement of the EEC will not necessarily correct this fault.

(a) Replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

2) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(b) Do the TLA Resolver and PEO LVDT Excitation Circuit Fault Isolation for the applicable channel:

1) For Channel A; do this task: FADEC2/FADEC3 (Ch A) Excitation Group 1: Thrust Lever Angle Resolver and PEO (CH A) LVDT Excitation Circuit Fault - Fault Isolation, 75-34 TASK 813

2) For Channel B; do this task: FADEC2/FADEC3 (Ch B) Excitation Group 1: Thrust Lever Angle Resolver and PEO (CH B) LVDT Excitation Circuit Fault - Fault Isolation, 75-34 TASK 814

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

G. Fault Isolation Procedure - Dual Channel Fault

(1) Do these steps to prepare for the procedure:

(a) For Engine 1:

1) 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
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(b) For Engine 2:

1) Open these circuit breakers and install safety tags:

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(c) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(2) Examine the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B), at the oil pressure sensor:

(a) See if the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B), are correctly connected to the oil pressure sensor and continue.

(b) Disconnect the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B), from the oil pressure sensor.

(c) Visually examine the oil pressure sensor receptacles and wire harness connectors (AMM TASK 70-70-01-200-801-F00).

1) If an oil pressure sensor receptacle is damaged, replace the oil pressure sensor, T429.

These are the tasks:

Oil Pressure Sensor Removal, AMM TASK 79-32-01-000-801-F00,

Oil Pressure Sensor Installation, AMM TASK 79-32-01-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If a harness connector is damaged, then replace the wire harness, J7 (Ch A) or J8 (Ch B).

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(3) Examine the electrical connectors, DP0707 (Ch A) and DP0808 (Ch B), at the EEC:

NOTE: The electrical connector, DP0707 (Ch A), is on the J7 wire harness. The electrical connector, DP0808 (Ch B), is on the J8 wire harness.

(a) See if the electrical connectors, DP0707 (Ch A) and DP0808 (Ch B), are correctly connected to the EEC, and continue.

(b) Disconnect the electrical connectors, DP0707 (Ch A) and DP0808 (Ch B), from the EEC.

(c) Visually examine the EEC receptacles and wire harness connectors (AMM TASK 70-70-01-200-801-F00).

1) If an EEC receptacle is damaged, then replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If a harness connector is damaged, then replace the wire harness, J7 (Ch A) or J8 (Ch B).

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(4) Connect the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B) on a new spare oil pressure sensor and do these steps:

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

(b) If the maintenance message does not show then open the circuit breakers above and replace the engine oil pressure sensor, T429 with a new spare sensor.

These are the tasks:

Oil Pressure Sensor Removal, AMM TASK 79-32-01-000-801-F00,

Oil Pressure Sensor Installation, AMM TASK 79-32-01-400-801-F00.

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

(c) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and do these steps:

1) Disconnect the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B) from the new spare oil pressure sensor.

2) Re-connect the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B) on the oil pressure sensor.

3) Replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

H. Repair Confirmation

(1) Prepare for the procedure:

(a) Make sure that the electrical connectors, DP0707 (Ch A) and DP0808 (Ch B), are connected at the EEC.

CAUTION

MAKE SURE THAT YOU CONNECT THE CHANNEL A ELECTRICAL CONNECTOR TO THE OIL PRESSURE SENSOR RECEPTACLE, CH A, AND THE CHANNEL B ELECTRICAL CONNECTOR TO THE OIL PRESSURE SENSOR RECEPTACLE, CH B. THE ELECTRICAL CONNECTORS ARE INTERCHANGEABLE. OIL PRESSURE SENSOR FAULTS AND OUTPUT DATA WILL SHOW ON THE WRONG CHANNELS.

(b) Make sure that the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B), are connected at the pressure sensor.

(c) For Engine 1:

1) 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
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(d) For Engine 2:

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

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(2) Do this task: EEC TEST, AMM TASK 73-21-00-700-804-F00.

(a) If the maintenance message does not show, then you corrected the fault.

(3) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

——— END OF TASK ———

802. The Engine Oil Temperature Signal (TEO) is Out of Range - Fault Isolation

A. Description

(1) This task is for these maintenance message numbers:

(a) 79-11101, 79-11102, 79-21101, 79-21102, 79-31101 and 79-31102.

(2) The maintenance messages 79-X110Y; where X = EEC Channel (1=Channel A, 2=Channel B, 3=Dual Channel), and Y = Engine Position (1=Eng 1, 2=Eng 2).

(a) If X=1, then do the Fault Isolation Procedure for Channel A.

(b) If X=2, then do the Fault Isolation Procedure for Channel B.

(c) If X=1 and 2 (two messages), or X=3, then do the Fault Isolation Procedure for Channel A and B.

(3) The temperature engine oil (TEO) signal is out of the valid range.

(a) This fault is reported on the active channel of the EEC when the engine is in operation.

B. Possible Causes

(1) Oil temperature sensor, T432

(2) EEC, M1818

(3) J6 wire harness.

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(2) For Engine 2:

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	7	C01391	ENGINE 2 ALTN PWR CHAN B

(Continued)

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

D. Related Data

(1) Component Location (79-21 TASK SUPPORT Figure 301)

(2) Simplified Schematic (79-21 TASK SUPPORT Figure 302)

(3) (SSM 79-34-11)

(4) (WDM 79-34-11)

E. Initial Evaluation

(1) Do these steps to find out if the fault is still active:

(a) Do this task: EEC TEST, AMM TASK 73-21-00-700-804-F00.

(b) If maintenance message 79-11101 (Ch A, Eng 1), 79-11102 (Ch A, Eng 2), 79-21101 (Ch B, Eng 1), 79-21102 (Ch B, Eng 2) 79-31101 (Ch A and B, Eng 1) or 79-31102 (Ch A and B, Eng 2) shows, then do the Fault Isolation Procedure for the applicable channel or channels.

(c) If the maintenance message does not show on the FMCS CDU, then the Initial Evaluation has shown that the fault is not active at this time and you have an intermittent fault.

1) If you cannot find the fault at this time, then the Fault Isolation Procedure cannot isolate the fault.

2) For an intermittent fault you must use your judgment, your airline policies, and the Possible Causes list to make the decision if you will try to correct the fault.

3) If you will try to correct the fault, it is recommended that you do these steps:

a) Do the visual checks of the electrical connectors in the applicable fault isolation procedure below.

b) Use the WDM references to identify intermediate electrical connections in the wire harness and do a visual check.

c) If you find no problems, then replace components as listed in the Possible Causes List above.

4) Monitor the airplane on the subsequent flight.

F. Fault Isolation Procedure

(1) Do these steps to prepare for the procedure:

(a) For Engine 1:

1) 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
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(b) For Engine 2:

1) Open these circuit breakers and install safety tags:

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(c) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(2) Examine the electrical connector, DP0602 (Ch A or Ch B), at the oil temperature sensor:

NOTE: Channel A and B of the oil temperature sensor are connected through one connector.

(a) See if the electrical connector, DP0602 (Ch A or Ch B), is correctly connected to the oil temperature sensor, and continue.

(b) Disconnect the electrical connector, DP0602 (Ch A or Ch B), from the oil temperature sensor.

(c) Visually examine the oil temperature sensor receptacle and wire harness connector (AMM TASK 70-70-01-200-801-F00).

1) If the oil temperature sensor receptacle is damaged, then replace the oil temperature sensor, T432.

These are the tasks:

Oil Temperature Sensor Removal, AMM TASK 79-34-02-000-801-F00,

Oil Temperature Sensor Installation, AMM TASK 79-34-02-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If the harness connector is damaged, then replace the J6 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(e) If you did not find a problem or the fault continues, then continue.

(3) Measure the resistance between these pins at the oil temperature sensor receptacle:

RECEPTACLE DP0602 CHANNEL A	PIN	STUD	RESISTANCE
	PIN 1	PIN 2	155 TO 322 OHMS
	PIN 1	CONNECTOR SHELL	GREATER THAN 20 MEGOHNS
	PIN 2	CONNECTOR SHELL	GREATER THAN 20 MEGOHNS

RECEPTACLE DP0602 CHANNEL B	PIN	STUD	RESISTANCE
	PIN 3	PIN 4	155 TO 322 OHMS
	PIN 3	CONNECTOR SHELL	GREATER THAN 20 MEGOHMS
	PIN 4	CONNECTOR SHELL	GREATER THAN 20 MEGOHMS

(a) If the resistance is not in the specified range, then replace the oil temperature sensor, T432.

These are the tasks:

Oil Temperature Sensor Removal, AMM TASK 79-34-02-000-801-F00,

Oil Temperature Sensor Installation, AMM TASK 79-34-02-400-801-F00.

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

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(b) If the resistance is in the specified range, then do this step and continue:

1) Connect the electrical connector, DP0602 (Ch A or Ch B), to the oil temperature sensor.

(4) Examine the electrical connector, DP0606 (Ch A or Ch B), at the EEC:

NOTE: The electrical connector, DP0606 (Ch A or Ch B), is on the J6 wire harness.

(a) See if the electrical connector, DP0606 (Ch A or Ch B), is correctly connected to the EEC, and continue.

(b) Disconnect the electrical connector, DP0606 (Ch A or Ch B), from the EEC.

(c) Visually examine the EEC receptacle and wire harness connector (AMM TASK 70-70-01-200-801-F00).

1) If the EEC receptacle is damaged, then replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If the harness connector is damaged, then replace the J6 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(5) Measure the resistance between these pins to examine the wires between the EEC connector on the wire harness and the oil temperature sensor:

NOTE: The electrical connector, DP0606 (Ch A or Ch B), is on the J6 wire harness.

CONNECTOR DP0606 CHANNEL A	PIN	STUD	RESISTANCE
	PIN S	PIN R	155 TO 322 OHMS
	PIN S	CONNECTOR SHELL	GREATER THAN 20 MEGOHNS
	PIN R	CONNECTOR SHELL	GREATER THAN 20 MEGOHNS

CONNECTOR DP0606 CHANNEL B	PIN	STUD	RESISTANCE
	PIN P	PIN N	155 TO 322 OHMS
	PIN P	CONNECTOR SHELL	GREATER THAN 20 MEGOHMS
	PIN N	CONNECTOR SHELL	GREATER THAN 20 MEGOHMS

(a) If the resistance is in the specified range and the fault was found during the Initial Evaluation, then replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

(b) If the resistance is not in the specified range, then replace the J6 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

G. Repair Confirmation

(1) Do these steps to prepare for the procedure:

(a) Make sure that the electrical connector, DP0602 (Ch A and Ch B), is correctly connected to the oil temperature sensor.

(b) Make sure that the electrical connector, DP0606 (Ch A and Ch B), is correctly connected to the EEC.

(c) For Engine 1:

1) 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
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(d) For Engine 2:

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

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(2) Do this task: EEC TEST, AMM TASK 73-21-00-700-804-F00.

(a) If the maintenance message does not show, then you corrected the fault.

(3) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

——— END OF TASK ———

806. The Oil Filter Signals Disagree - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 79-11121, 79-11122, 79-21121, 79-21122, 79-31121 and 79-31122.

(2) For the maintenance message 79-X112Y; where X = EEC Channel (1=Channel A, 2=Channel B, 3=Dual Channel), and Y = Engine Position (1=Eng 1, 2=Eng 2), do the applicable Fault Isolation:

(a) If X=1, then do the Fault Isolation Procedure - Single Channel Fault for channel A.

(b) If X=2, then do the Fault Isolation Procedure - Single Channel Fault for channel B.

(c) If X=1 and 2 (two messages), or X=3, then do the Fault Isolation Procedure - Dual Channel Fault.

(3) These maintenance messages are set during following conditions:

(a) The scavenge oil filter clogging transmitter signal from channel A disagrees with the signal from channel B.

SHZ ALL PRE SB 737-CFM56-7B-73-0219

(b) When the two switches (SW 1 and SW 2) are both set to open or closed position.

NOTE: The usual clogging transmitter position is: SW 1 closed and SW 2 open when the filter is not clogged or SW 1 open and SW 2 closed when the filter is clogged (engine in operation).

SHZ ALL POST SB 737-CFM56-7B-73-0219

(c) When the two switches (SW 1 and SW 2) are both set to closed position.

NOTE: The usual clogging transmitter position is: SW 1 closed and SW 2 open when the filter is not clogged or SW 1 open and SW 2 closed when the filter is clogged (engine in operation).

SHZ ALL

(d) This fault is reported when the Engine Electronic Controller (EEC) has electrical power.

(e) The fault will cause the OIL FILTER BYP light on the upper Display Unit (DU) to show on the ground.

B. Possible Causes

(1) For the Single Channel Maintenance Messages:

(a) EEC, M1818.

(2) For the Dual Channel Maintenance Messages:

(a) Scavenge oil filter clogging transmitter, S125

(b) EEC, M1818

(c) J7 Wire Harness.

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(2) For Engine 2:

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

D. Related Data

(1) Component Location (79-21 TASK SUPPORT Figure 301)

(2) Simplified Schematic (79-21 TASK SUPPORT Figure 302)

(3) (SSM 79-33-11)

(4) (WDM 79-33-11)

E. Initial Evaluation

(1) You must do the Initial Evaluation in the "OIL FILTER BYP Message Shows" fault isolation procedure to identify which task is necessary in this procedure (79-05 TASK 817).

NOTE: When this message is set, it will also cause the OIL FILTER BYP message to go on shortly after landing. Therefore, this message and the OIL FILTER BYP message must be considered as one problem. The initial evaluation in the OIL FILTER BYP message procedure will direct you to this procedure if it is necessary.

F. Fault Isolation Procedure - Single Channel Fault

(1) You must get the results of the Initial Evaluation in the "OIL FILTER BYP Message Shows" fault isolation procedure before you do the Fault Isolation Procedure (79-05 TASK 817).

NOTE: The results of that Initial Evaluation are necessary to identify which procedure you must use to correct the fault.

(2) If the fault was found during the Initial Evaluation, then replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

G. Fault Isolation Procedure - Dual Channel Fault Detected During Initial Evaluation

(1) You must get the results of the Initial Evaluation in the "OIL FILTER BYP Message Shows" fault isolation procedure before you do the Fault Isolation Procedure (79-05 TASK 817).

NOTE: The results of that Initial Evaluation are necessary to identify which procedure you must use to correct the fault.

(2) Do these steps to prepare for the procedure:

(a) For Engine 1:

1) 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
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(b) For Engine 2

1) Open these circuit breakers and install safety tags:

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(c) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(3) Examine the electrical connector, DP0703, at the scavenge oil filter clogging transmitter:

(a) See if the electrical connector, DP0703, is correctly connected to the scavenge oil filter clogging transmitter, and continue.

(b) Disconnect the electrical connector, DP0703, from the scavenge oil filter clogging transmitter.

(c) Visually examine the scavenge oil filter clogging transmitter receptacle and wire harness connector (AMM TASK 70-70-01-200-801-F00).

1) If the receptacle is found damaged, then replace the scavenge oil filter clogging transmitter, S125.

These are the tasks:

Scavenge Oil Filter Clogging Transmitter Removal, AMM TASK 79-21-07-000-801-F00,

Scavenge Oil Filter Clogging Transmitter Installation, AMM TASK 79-21-07-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If the harness connector is damaged, then replace the J7 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(4) Measure the resistance between these pins at the scavenge oil filter clogging transmitter receptacle, DP0703:

RECEPTACLE DP0703	PINS	
PIN 1	PIN 2	LESS THAN 5 OHMS
PIN 2	PIN 3	GREATER THAN 0.1 MEGOHMS
PIN 1	GROUND	GREATER THAN 20 MEGOHMS
PIN 2	GROUND	GREATER THATN 20 MEGOHMS
PIN 3	GROUND	GREATER THAN 20 MEGOHMS

(a) If the resistance is not in the specified range, then replace the scavenge oil filter clogging transmitter, S125.

These are the tasks:

Scavenge Oil Filter Clogging Transmitter Removal, AMM TASK 79-21-07-000-801-F00,

Scavenge Oil Filter Clogging Transmitter Installation, AMM TASK 79-21-07-400-801-F00.

1) If the OIL FILTER BYP Message does not come on during the leak test in the clogging transmitter installation test, then do the Repair Confirmation at the end of this task.

2) If the OIL FILTER BYP Message comes on during the leak test in the clogging transmitter installation test, then, do this task: EEC BITE Procedure, 73-00 TASK 801.

a) If the maintenance message does not show in flight leg 0, then Do the Fault Isolation Procedure - Impending Bypass in the "OIL FILTER BYP Message Shows" task (79-05 TASK 817).

b) If the maintenance message shows in Flight Leg 0, then continue.

(b) If the resistance is in the specified range, then do this step and continue:

1) Re-connect the electrical connector, DP0703, to the scavenge oil filter clogging transmitter receptacle.

(5) Examine the electrical connector, DP0707, at the EEC:

NOTE: The electrical connector, DP0707, is on the J7 wire harness.

(a) See if the electrical connector, DP0707, is correctly connected to the EEC, and continue.

(b) Disconnect the electrical connector, DP0707, from the EEC.

(c) Visually examine the EEC receptacle and wire harness connector (AMM TASK 70-70-01-200-801-F00).

1) If the EEC receptacle is damaged, then replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If the harness connector is damaged, then replace the J7 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(6) Measure the resistance between these pins to examine the wires between the EEC connector on the J7 wire harness through the scavenge oil filter clogging transmitter, S125:

CONNECTOR DP0707	PINS	
PIN H	PIN K	LESS THAN 5 OHMS
PIN J	PIN K	GREATER THAN 0.1 MEGOHMS
PIN J	CONNECTOR SHELL	GREATER THAN 20 MEGOHMS
PIN K	CONNECTOR SHELL	GREATER THAN 20 MEGOHMS
PIN H	CONNECTOR SHELL	GREATER THAN 20 MEGOHMS

(a) If the resistance is in the specified range and the fault was found during the Initial Evaluation, then replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

(b) If the resistance is not in the specified range, then replace the J7 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

H. Fault Isolation Procedure - Dual Channel Fault Not Detected During Initial Evaluation

(1) You must get the results of the Initial Evaluation in the "OIL FILTER BYP Message Shows" fault isolation procedure before you do the Fault Isolation Procedure (79-05 TASK 817).

NOTE: The results of that Initial Evaluation are necessary to identify which procedure you must use to correct the fault.

(2) Do these steps to prepare for the procedure:

(a) For Engine 1:

1) 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
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(b) For Engine 2:

1) Open these circuit breakers and install safety tags:

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(c) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(3) Examine the electrical connector, DP0703, at the scavenge oil filter clogging transmitter:

(a) See if the electrical connector, DP0703, is correctly connected to the scavenge oil filter clogging transmitter and continue.

(b) Disconnect the electrical connector, DP0703, from the scavenge oil filter clogging transmitter.

(c) Visually examine the scavenge oil filter clogging transmitter receptacle and wire harness connector (AMM TASK 70-70-01-200-801-F00).

1) If the receptacle is found damaged, then replace the scavenge oil filter clogging transmitter, S125.

These are the tasks:

Scavenge Oil Filter Clogging Transmitter Removal, AMM TASK 79-21-07-000-801-F00,

Scavenge Oil Filter Clogging Transmitter Installation, AMM TASK 79-21-07-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If the harness connector is damaged, then replace the J7 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(4) Install a jumper between pin 2 and pin 3 of the DP0703 electrical connector at the clogging transmitter.

(5) Examine the electrical connector, DP0707, at the EEC:

NOTE: The electrical connector, DP0707, is on the J7 wire harness.

(a) See if the electrical connector, DP0707, is correctly connected to the EEC, and continue.

(b) Disconnect the electrical connector, DP0707, from the EEC.

(c) Visually examine the EEC receptacle and wire harness connector (AMM TASK 70-70-01-200-801-F00).

1) If the EEC receptacle is damaged, then replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If the harness connector is damaged, then replace the J7 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(6) Look for continuity between pin K and pin J of the DP0707 electrical connector at the EEC.

(a) If you do not find continuity, then replace the J7 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

(b) If you find the continuity, then continue.

(7) Look for an open circuit between pin H and pin K of the DP0707 electrical connector at the EEC.

(a) If you do not find the open circuit, then replace the J7 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

(b) If you find the open circuit, then continue.

(8) Look for an open circuit between pin H and pin J of the DP0707 electrical connector at the EEC.

(a) If you do not find the open circuit, then replace the J7 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

(b) If you find the open circuit, then continue.

(9) Remove the jumper from the DP0703 electrical connector at the clogging transmitter.

(10) Look for an open circuit between pin K, pin H, and pin J of the DP0707 electrical connector and airplane ground.

(a) If you do not find the open circuit, then replace the J7 wire harness.

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

(b) If you find the open circuit, then continue.

(11) Replace the scavenge oil filter clogging transmitter, S125 (the most likely LRU from the Possible Causes list).

These are the tasks:

Scavenge Oil Filter Clogging Transmitter Removal, AMM TASK 79-21-07-000-801-F00,

Scavenge Oil Filter Clogging Transmitter Installation, AMM TASK 79-21-07-400-801-F00.

(a) Do this task: EEC BITE Procedure, 73-00 TASK 801.

NOTE: The engine is operated for the Idle Leak Test in the installation test of the clogging transmitter. Therefore, if the fault is still active, then the EEC Test should find it in Flight Leg 0.

1) If the message shows in Flight Leg 0, then replace the EEC (the subsequent LRU from the Possible Causes list).

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

2) If the message does not show in Flight Leg 0, then do the Repair Confirmation at the end of this task.

I. Repair Confirmation

(1) Prepare for the procedure:

(a) Make sure that the electrical connector, DP0703, is correctly connected to the scavenge oil filter clogging transmitter.

(b) Make sure that the electrical connector, DP0707, is correctly connected to the EEC.

(c) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

(d) For Engine 1:

1) 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

(Continued)

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	3	C00153	ENGINE 1 IGNITION LEFT
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(e) For Engine 2:

1) Open these circuit breakers and install safety tags:

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(2) Do these steps if you could find the problem with the Input Monitoring in the Initial Evaluation in the "OIL FILTER BYP Message Shows":

(a) Get access to the CDU INPUT MONITORING/OIL FILTER screen on the FMCS CDU.

(b) Record the FILTER BYPASS status.

NOTE: These are the usual states, but other states can be found.

FILTER INPUTS	OIL FILTER BYPASS STATE "NOT CLOGGED"	OIL FILTER BYPASS STATE "CLOGGED"
SW 1 CH A SW 1 CH B	CLOSED	OPEN
SW 2 CH A SW 2 CH B	OPEN	CLOSED

(c) If the FILTER BYPASS state indicates that the filter is "NOT CLOGGED", then you corrected the fault.

(3) Do these steps if you could not find the problem with the Input Monitoring in the Initial Evaluation in the "OIL FILTER BYP Message Shows":

(a) Record the steps that you completed to correct the fault.

(b) Monitor the airplane on the subsequent flight.

——— END OF TASK ———

808. DMS Requires Inspection - Fault Isolation

A. Description

(1) This task is for these Maintenance Message numbers:

(a) 79-11141, 79-11142, 79-21141, 79-21142, 79-31141 and 79-31142.

(b) For the Maintenance Message 79-X114Y; where X = Electronic Engine Control (EEC) Channel (1=Channel A, 2=Channel B, 3=Dual Channel), and Y=Engine Position (1=Eng1, 2=Eng2).

(2) This Maintenance Message shows when the Debris Monitoring System (DMS) input signal to the EEC, M1818, is less than 130 ohms. This can be caused by one of the conditions that follow:

(a) Debris is caught on a DMS Detector, S1116 (S1117, S1118) magnet.

NOTE: An Engine with less than 1100 flight hours since it was new can possibly release metallic dust into the Oil System. This fuzz is not significant but can cause detection by the DMS system.

(b) There is a short circuit in the DMS system.

B. Possible Causes

(1) Debris

(2) DMS Box, M2235

(3) DMS Detector, S1116 (S1117, S1118)

(4) EEC, M1818

(5) Wiring

C. Circuit Breakers

(1) These are the Circuit Breakers related to the fault:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

D. Related Data

(1) Component Location (79-21 TASK SUPPORT Figure 301)

(2) Simplified Schematic (79-21 TASK SUPPORT Figure 302)

(3) WDM 79-33-11

(4) SSM 79-33-11

E. Initial Evaluation

(1) To make sure during which Flight Leg, Debris Detection occurred, do this task: EEC BITE TEST - FAULT HISTORY, AMM TASK 73-21-00-740-801-F00.

(a) Get access to the Input Monitoring Screen on the Flight Management Computer System (FMCS) Control Display Unit (CDU):

1) Push the INIT REF key two times.

NOTE: This causes the PERF INIT INDEX to show.

2) Push the INDEX Line Select Key (LSK).

3) Push the MAINT LSK.

4) Push the ENGINE LSK.

5) Push the LSK for the applicable Engine.

NOTE: This causes the ENGINE X BITE TEST MAIN MENU to show.

6) Push the DMS STATUS LSK.

NOTE: This causes the ENGINE X BITE TEST DMS STATUS to show.

(b) If the Maintenance Message occurs on the FMCS CDU on Flight Leg 0 or 1 in Fault History, then do the steps that follow:

1) If DEBRIS DETECTED: YES shows, this indicates Debris Detection is ACTIVE. Do the Fault Isolation Procedure.

2) If DEBRIS DETECTED: NO shows, this indicates Debris Detection is not ACTIVE.

a) Interrogate the FMCS CDU in the subsequent 5 to 10 Flight Legs to find if the Maintenance Message shows again.

(c) If the Maintenance Message occurs on the FMCS CDU between Flight Legs 2 and 5, then do the steps that follow:

1) No immediate action is necessary.

2) If the Maintenance Message shows on two subsequent Flight Legs, interrogate the FMCS CDU in the subsequent 5 to 10 Flight Legs to see if the Maintenance Message shows again.

3) If the Maintenance Message does not show again, no action is necessary.

(d) If the Maintenance Message occurs on the FMCS CDU on Flight Leg 6 or above, no action is necessary.

1) For an intermittent fault, you must use your judgment, your Airline Policies, and the Possible Causes list to make the decision if you will try to correct the fault.

NOTE: If the Maintenance Message is not recorded at Flight Legs 0 or 1, or if DEBRIS DETECTED: NO shows on the INPUT MONITORING CDU, this indicates an intermittent detection.

NOTE: An intermittent detection can be caused if one of the conditions that follow exists: 1) An intermittent fault is in the DMS, or 2) Debris is no longer on the DMS detector.

NOTE: When the Initial Evaluation has shown that the fault is not active at this time, then the Fault Isolation Procedure cannot isolate the fault.

NOTE: An Engine with less than 1100 flight hours since it was new can possibly release metallic dust into the Oil System. This fuzz is not significant but can cause detection by the DMS.

2) If you will try to correct the fault, it is recommended that you do these steps:

a) Do the visual checks of the Electrical Connectors in the applicable Fault Isolation Procedure.

b) Use the Wiring Diagram Manual references to identify intermediate electrical connections in the Wire Harness and do a visual check.

c) If you find no problems, then replace components as listed in the Possible Causes list.

3) Monitor the Aircraft on the Subsequent Flight.

F. Fault Isolation Procedure

(1) To find if this fault is still active or if the fault was intermittent, you must do the Initial Evaluation before you continue.

(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

(Continued)

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	3	C00153	ENGINE 1 IGNITION LEFT
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(a) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(3) Do this task: Chip Detectors and Scavenge Screens - Inspection, AMM TASK 79-00-00-200-804-F00.

CAUTION

REMOVE THE SCREEN FROM THE CHIP DETECTOR TO EXAMINE THE CHIP DETECTOR MAGNET FOR THE PRESENCE OF PARTICLES. IF YOU DO NOT REMOVE THE SCREEN FROM THE CHIP DETECTOR, IT IS POSSIBLE THAT YOU WILL NOT BE ABLE TO SEE THE PARTICLES THAT ARE CAUGHT BY THE CHIP DETECTOR MAGNET.

(a) If there are particles on a DMS Detector, S1116 (S1117, S1118), then do the applicable corrective action.

NOTE: If all of the particles are not removed from the DMS Detector, S1116 (S1117, S1118) and screen, the DMS REQUIRES INSPECTION, the Maintenance Message can show again after the Subsequent Flight.

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

(4) At the DMS Box, M2235, examine the Electrical Connector, DP0806:

(a) See if the Electrical Connector, DP0806, is correctly connected to the DMS Box, M2235, and continue.

(b) Disconnect the Electrical Connector, DP0806, from the DMS Box, M2235.

(c) At the DMS Box, M2235, examine the receptacle and Harness Connector (AMM TASK 70-70-01-200-801-F00).

1) If the receptacle is damaged, then replace the DMS Box, M2235. These are the tasks:

- Debris Monitoring System (DMS) Box Removal, AMM TASK 79-21-08-000-801-F00
- Debris Monitoring System (DMS) Box Installation, AMM TASK 79-21-08-400-801-F00

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

2) If the Harness Connector is damaged, then replace the Wire Harness, J8. These are the tasks:

- Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00

- Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00

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

3) If the connector was not correctly connected and no other problem was found, then re-connect the connector.

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

(5) Do this wiring check (WDM 79-33-11):

(6) At the applicable DMS Box, M2235, receptacle, DJB801, measure the resistance between these pins:

(a) Move the Wire Harness from side to side at the DMS Detectors as you do the check of the resistance.

Chip Detector DJB801		Chip Detector DJB801	
pin 1	. . . . .	pin 2	> 130 Ω
pin 1	. . . . .	pin 3	> 20 MΩ
pin 2	. . . . .	pin 3	> 20 MΩ

(7) If it is not already done, connect the Electrical Connector, DP0806, to the DMS Box, M2235.

(8) Do this wiring check (WDM 79-33-11):

(a) See if the Electrical Connector, DJB802 (DJB803, DJB804) are correctly connected to the DMS Box, M2235, and continue.

(b) Disconnect the Electrical Connector, DJB802 (DJB803, DJB804) from the DMS Box, M2235.

NOTE: The removal of the DMS Detectors from the lubrication unit is not necessary to examine the Electrical Connectors.

(c) Examine the DMS Detector, S1116 (S1117, S1118), Electrical Connectors (AMM TASK 70-70-01-200-801-F00).

(d) If a Electrical Connector is damaged, then replace the applicable DMS Detector, S1116 (S1117, S1118). This is the task:

- Magnetic Chip Detector (MCD) Removal, AMM TASK 79-21-05-000-806-F00 or Debris Monitoring System (DMS) Detector Removal, AMM TASK 79-21-05-000-807-F00
- Magnetic Chip Detector (MCD) Installation, AMM TASK 79-21-05-400-804-F00 or Debris Monitoring System (DMS) Detector Installation, AMM TASK 79-21-05-400-805-F00

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

(e) If the receptacle is damaged, then replace the DMS Box, M2235. These are the tasks:

- Debris Monitoring System (DMS) Box Removal, AMM TASK 79-21-08-000-801-F00
- Debris Monitoring System (DMS) Box Installation, AMM TASK 79-21-08-400-801-F00

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

(f) If the connector was not correctly connected and no other problem was found, then re-connect the connector.

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

(g) At the DMS Detector, S1116 (S1117, S1118), Connector, DJB802 (DJB803, DJB804) measure the resistance between these pins:

1) Move the Wire Harness from side to side at the DMS Detectors as you do the check of the resistance.

Chip Detector		Chip Detector	
DJB802		**DJB802**	
pin 1	. . . . .	pin 2	> 130 Ω
pin 1	. . . . .	pin 3	> 20 MΩ
pin 2	. . . . .	pin 3	> 20 MΩ
DJB803		**DJB803**	
pin 1	. . . . .	pin 2	> 130 Ω
pin 1	. . . . .	pin 3	> 20 MΩ
pin 2	. . . . .	pin 3	> 20 MΩ
DJB804		**DJB804**	
pin 1	. . . . .	pin 2	> 130 Ω
pin 1	. . . . .	pin 3	> 20 MΩ
pin 2	. . . . .	pin 3	> 20 MΩ

2) If the resistance is not in the specified limits, then replace the applicable DMS Detector, S1116 (S1117, S1118). These are the tasks:

- Magnetic Chip Detector (MCD) Removal, AMM TASK 79-21-05-000-806-F00 or Debris Monitoring System (DMS) Detector Removal, AMM TASK 79-21-05-000-807-F00
- Magnetic Chip Detector (MCD) Installation, AMM TASK 79-21-05-400-804-F00 or Debris Monitoring System (DMS) Detector Installation, AMM TASK 79-21-05-400-805-F00

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

3) If the resistance is in the specified limits, then replace the DMS Box, M2235. These are the tasks:

- Debris Monitoring System (DMS) Box Removal, AMM TASK 79-21-08-000-801-F00
- Debris Monitoring System (DMS) Box Installation, AMM TASK 79-21-08-400-801-F00

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

(h) Connect the DMS Detector, S1116 (S1117, S1118), Connector, DJB802 (DJB803, DJB804) on the applicable DMS Box, M2235, receptacles.

(9) Do this wiring check (WDM 79-33-11):

(a) See if the Electrical Connector, DP0808, is correctly connected to the EEC, M1818, and continue.

NOTE: The Electrical Connector, DP0808, is on the J8 Wire Harness.

(b) Disconnect the Electrical Connector, DP0808, from the EEC, M1818.

(c) At the EEC, M1818, examine the receptacle and Harness Connector (AMM TASK 70-70-01-200-801-F00).

1) If the receptacle is damaged, then replace the EEC, M1818. These are the tasks:

- EEC Removal, AMM TASK 73-21-60-000-801-F00

- EEC Installation, AMM TASK 73-21-60-400-801-F00

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

2) If the Harness Connector is damaged, then replace the J8 Wire Harness. These are the tasks:

- Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00
- Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00

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

3) If the connector was not correctly connected and no other problem was found, then connect the connector.

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

(d) At the EEC, M1818, connector, DP0808, measure the resistance at these pins:

EEC DP0808		EEC DP0808	
pin F	. . . . .	pin G	> 130 Ω
pin F	. . . . .	connector shell	> 20 MΩ
pin G	. . . . .	connector shell	> 20 MΩ

1) If the resistance is in the specified limits and the problem was found during the Initial Evaluation, then replace the EEC, M1818. These are the tasks:

- EEC Removal, AMM TASK 73-21-60-000-801-F00
- EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

2) If the resistance is not in the specified limits, then replace the J8 Wire Harness. These are the tasks:

- Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00
- Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00

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

G. Repair Confirmation

(1) Do these steps:

(a) Make sure that the Electrical Connector, DJB802 (DJB803, DJB804) are correctly connected to the DMS Box, M2235.

(b) Make sure that the Electrical Connector, DP0806, is correctly connected to the DMS Box, M2235.

(c) Make sure that the Electrical Connector, DP0808, is correctly connected to the EEC, M1818.

(d) 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
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(2) Do these steps to see if there is a debris detection:

(a) Get access to the input monitoring screen on the FMCS CDU:

1) Push the INIT REF key two times.

NOTE: This causes the PERF INIT INDEX to show.

2) Push the INDEX LSK).

3) Push the MAINT LSK.

4) Push the ENGINE LSK.

5) Push the LSK for the applicable Engine.

NOTE: This causes the ENGINE X BITE TEST MAIN MENU to show.

6) Push the DMS STATUS LSK.

NOTE: This causes the ENGINE X BITE TEST DMS STATUS to show.

(b) If DEBRIS DETECTED: NO shows, then you corrected the problem.

(c) If DEBRIS DETECTED: YES shows, then continue the Fault isolation procedure at the subsequent step.

(3) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

——— END OF TASK ———

809. The Engine Oil Pressure Signals (PEO) Disagree - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 79-11341, 79-11342, 79-21341, 79-21342, 79-31341 and 79-31342.

(2) For the maintenance message 79-X134Y; where X = EEC Channel (1=Channel A, 2=Channel B, 3=Dual Channel), and Y = Engine Position (1=Eng 1, 2=Eng 2), do the applicable Fault Isolation:

(a) If X=1, then do the Fault Isolation Procedure - Single Channel Fault for channel A.

(b) If X=2, then do the Fault Isolation Procedure - Single Channel Fault for channel B.

(c) If X=1 and 2 (two messages), or X=3, then do the Fault Isolation Procedure - Dual Channel Fault.

(3) The absolute value of the difference between the oil pressure sensed by channel A and channel B is out of valid range.

(a) This fault is reported on the active channel of the EEC when the engine is in operation.

B. Possible Causes

(1) Oil pressure sensor, T429

(2) EEC, M1818

(3) J7 (Ch A) or J8 (Ch B) wire harness.

C. Circuit Breakers

(1) For Engine 1:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(2) For Engine 2:

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

D. Related Data

(1) Component Location (79-21 TASK SUPPORT Figure 301)

(2) Simplified Schematic (79-21 TASK SUPPORT Figure 302)

(3) (SSM 79-32-11)

(4) (WDM 79-32-11)

E. Initial Evaluation

(1) Do these steps to find out if the fault is still active, and if another related maintenance message was set:

NOTE: This fault is normally reported by channel A and channel B. If the fault is reported by only a single channel, then an additional fault in the EEC is present.

(a) For RECENT FAULTS, do this task: EEC BITE Procedure, 73-00 TASK 801.

(b) If maintenance message number 79-11091, 79-11092, 79-21091, 79-21092, 79-31091 or 79-31092 shows, then, do this task: The Engine Oil Pressure Signal (PEO) Is Out of Range - Fault Isolation, 79-21 TASK 801.

(c) Do this task: EEC TEST, AMM TASK 73-21-00-700-804-F00.

(d) If maintenance message 79-11341 (Ch A, Eng 1), 79-11342 (Ch A, Eng 2), 79-21341 (Ch B, Eng 1) or 79-21342 (Ch B, Eng 2) shows, then do the Fault Isolation Procedure - Single Channel Fault for the applicable channel.

(e) If maintenance message 79-31341 (Ch A and B, Eng 1) or 79-31342 (Ch A and B, Eng 2) shows, then do the Fault Isolation Procedure - Dual Channel Fault.

(f) If the maintenance message does not show on the FMCS CDU, then the Initial Evaluation has shown that the fault is not active at this time and you have an intermittent fault.

1) If you cannot find the fault at this time, then the Fault Isolation Procedure cannot isolate the fault.

2) For an intermittent fault you must use your judgment, your airline policies, and the Possible Causes list to make the decision if you will try to correct the fault.

3) If you will try to correct the fault, it is recommended that you do these steps:

a) Do the visual checks of the electrical connectors in the applicable fault isolation procedure below.

b) Use the WDM references to identify intermediate electrical connections in the wire harness and do a visual check.

c) If you find no problems, then replace components as listed in the Possible Causes list above.

4) Monitor the airplane on the subsequent flight.

F. Fault Isolation Procedure - Single Channel Fault

(1) Do this task: EEC TEST, AMM TASK 73-21-00-700-804-F00.

(a) Look for INTERNAL EEC FAULTs on the CDU.

(b) Do the Fault Isolation Procedure for the INTERNAL EEC FAULT that you found first.

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

2) If the dual channel fault shows or the problem continues, then do the Fault Isolation Procedure - Dual Channel Fault.

(c) If an INTERNAL EEC FAULT did not show during the EEC test, then do the Fault Isolation Procedure - Dual Channel Fault.

G. Fault Isolation Procedure - Dual Channel Fault

(1) To identify if the "Engine oil pressure signal is out of range" fault is set, do the Initial Evaluation above.

(2) Do these steps to prepare for the procedure:

(a) For Engine 1:

1) 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
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(b) For Engine 2:

1) Open these circuit breakers and install safety tags:

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
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(c) Do this task: Open the Fan Cowl Panels, AMM TASK 71-11-02-010-801-F00.

(3) Examine the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B), at the oil pressure sensor:

(a) See if the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B), are correctly connected to the oil pressure sensor, and then continue.

(b) Disconnect the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B), from the oil pressure sensor.

(c) Visually examine the oil pressure sensor receptacles and wire harness connectors (AMM TASK 70-70-01-200-801-F00).

1) If a oil pressure sensor receptacle is damaged, then replace the oil pressure sensor, T429.

These are the tasks:

Oil Pressure Sensor Removal, AMM TASK 79-32-01-000-801-F00,

Oil Pressure Sensor Installation, AMM TASK 79-32-01-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If a harness connector is damaged, then replace the wire harness, J7 (Ch A) or J8 (Ch B).

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If a connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(4) Examine the electrical connectors, DP0707 (Ch A) and DP0808 (Ch B), at the EEC:

NOTE: The electrical connector, DP0707 (Ch A), is on the J7 wire harness. The electrical connector, DP0808 (Ch B), is on the J8 wire harness.

(a) See if the electrical connectors, DP0707 (Ch A) and DP0808 (Ch B), are correctly connected to the EEC, and then continue.

(b) Disconnect the electrical connectors, DP0707 (Ch A) and DP0808 (Ch B), from the EEC.

(c) Visually examine the EEC receptacles and wire harness connectors (AMM TASK 70-70-01-200-801-F00).

1) If an EEC receptacle is damaged, then replace the EEC, M1818.

These are the tasks:

EEC Removal, AMM TASK 73-21-60-000-801-F00,

EEC Installation, AMM TASK 73-21-60-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

2) If a harness connector is damaged, then replace the wire harness, J7 (Ch A) or J8 (Ch B).

These are the tasks:

Fan Wiring Harness Removal, AMM TASK 73-21-06-000-801-F00,

Fan Wiring Harness Installation, AMM TASK 73-21-06-400-801-F00.

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

b) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

3) If a connector was not correctly connected and no other problem was found, then re-connect the connector and do the Repair Confirmation at the end of this task.

a) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and continue.

(d) If you did not find a problem, then continue.

(5) Connect the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B) on a new spare oil pressure sensor and do these steps:

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

(b) If the maintenance message does not show then open the circuit breakers above and replace the engine oil pressure sensor, T429 with a new spare sensor.

These are the tasks:

Oil Pressure Sensor Removal, AMM TASK 79-32-01-000-801-F00,

Oil Pressure Sensor Installation, AMM TASK 79-32-01-400-801-F00.

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

(c) If the Repair Confirmation is not satisfactory, then open the circuit breakers above and do these steps:

1) Disconnect the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B) from the new spare oil pressure sensor.

2) Re-connect the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B) on the oil pressure sensor.

3) Replace the most likely LRU from the Possible Causes list.

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

b) If the Repair Confirmation is not satisfactory, then replace the subsequent most likely LRU from the Possible Causes list.

H. Repair Confirmation

(1) Prepare for the procedure:

(a) Make sure that the electrical connectors, DP0707 (Ch A) and DP0808 (Ch B), are connected at the EEC.

CAUTION

MAKE SURE THAT YOU CONNECT THE CHANNEL A ELECTRICAL CONNECTOR TO THE OIL PRESSURE SENSOR RECEPTACLE, CH A, AND THE CHANNEL B ELECTRICAL CONNECTOR TO THE OIL PRESSURE SENSOR RECEPTACLE, CH B. THE ELECTRICAL CONNECTORS ARE INTERCHANGEABLE. OIL PRESSURE SENSOR FAULTS AND OUTPUT DATA WILL SHOW ON THE WRONG CHANNELS.

(b) Make sure that the electrical connectors, DP0705 (Ch A) and DP0805 (Ch B), are connected at the oil pressure sensor.

(c) For Engine 1:

1) 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
A	4	C01390	ENGINE 1 ALTN PWR CHAN B
A	5	C01314	ENGINE 1 ALTN PWR CHAN A

(d) For Engine 2

1) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

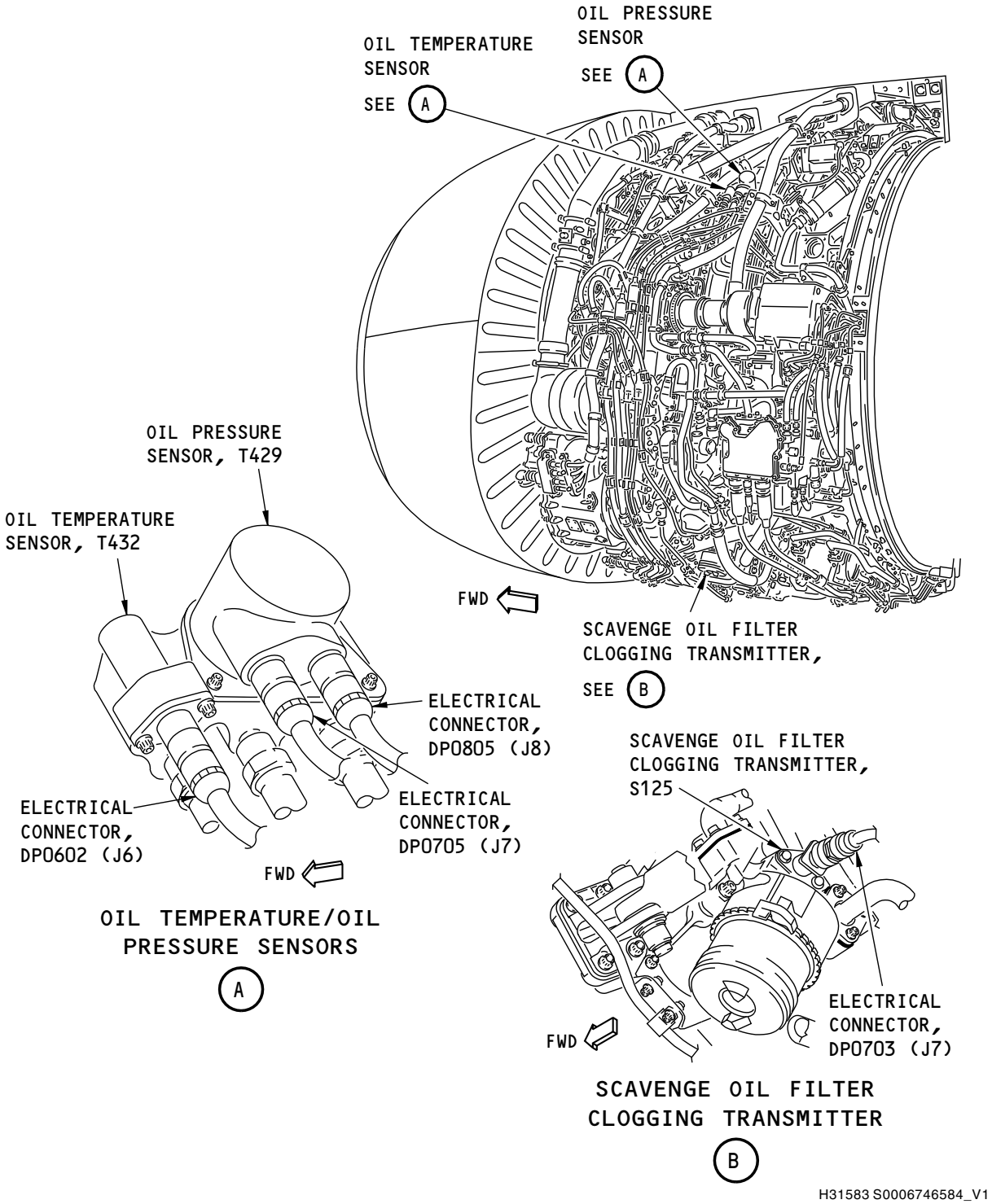
Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT
D	7	C01391	ENGINE 2 ALTN PWR CHAN B
D	8	C01315	ENGINE 2 ALTN PWR CHAN A

(2) Do this task: EEC TEST, AMM TASK 73-21-00-700-804-F00.

(a) If the maintenance message does not show, then you corrected the fault.

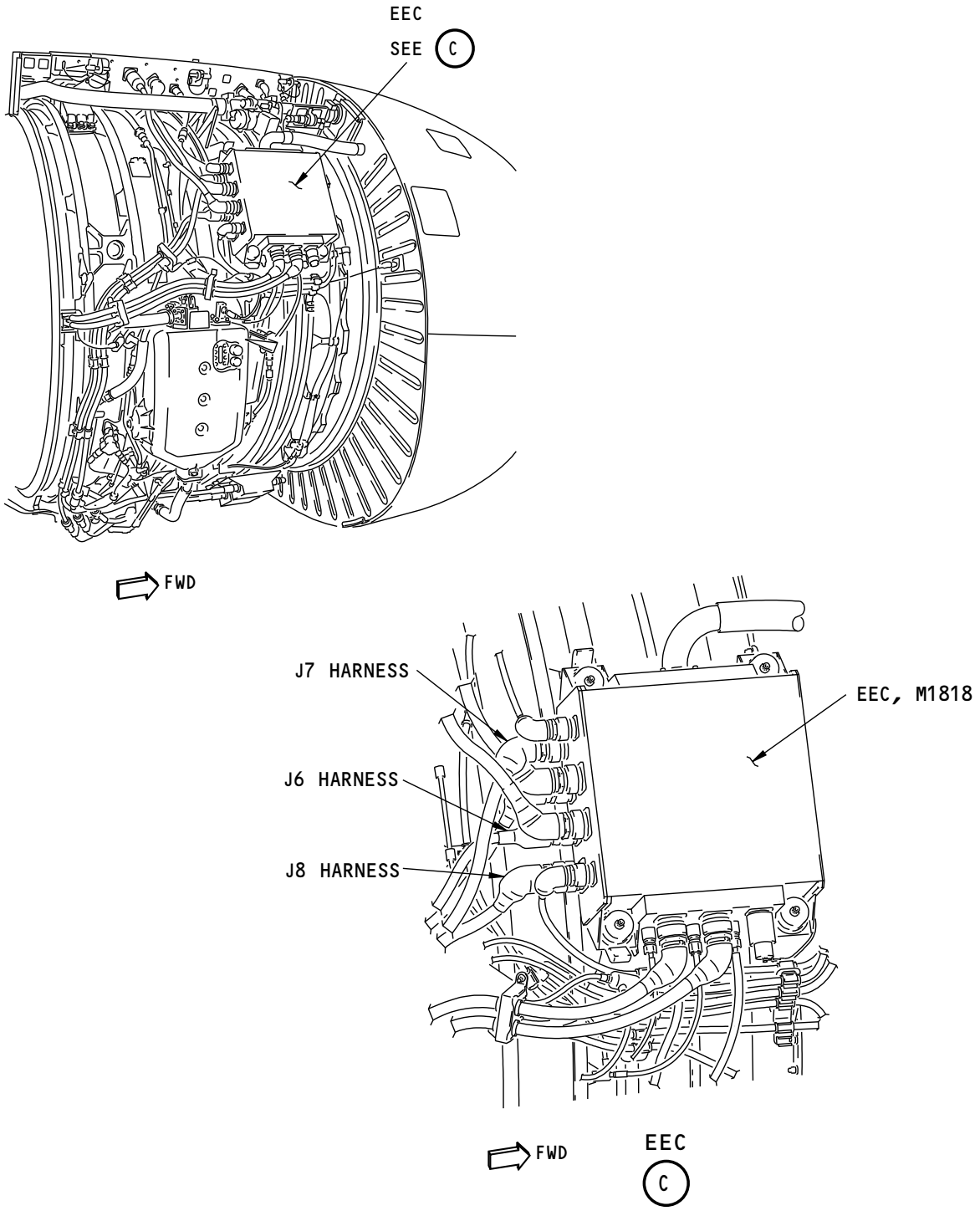
(3) Do this task: Close the Fan Cowl Panels, AMM TASK 71-11-02-410-801-F00.

END OF TASK

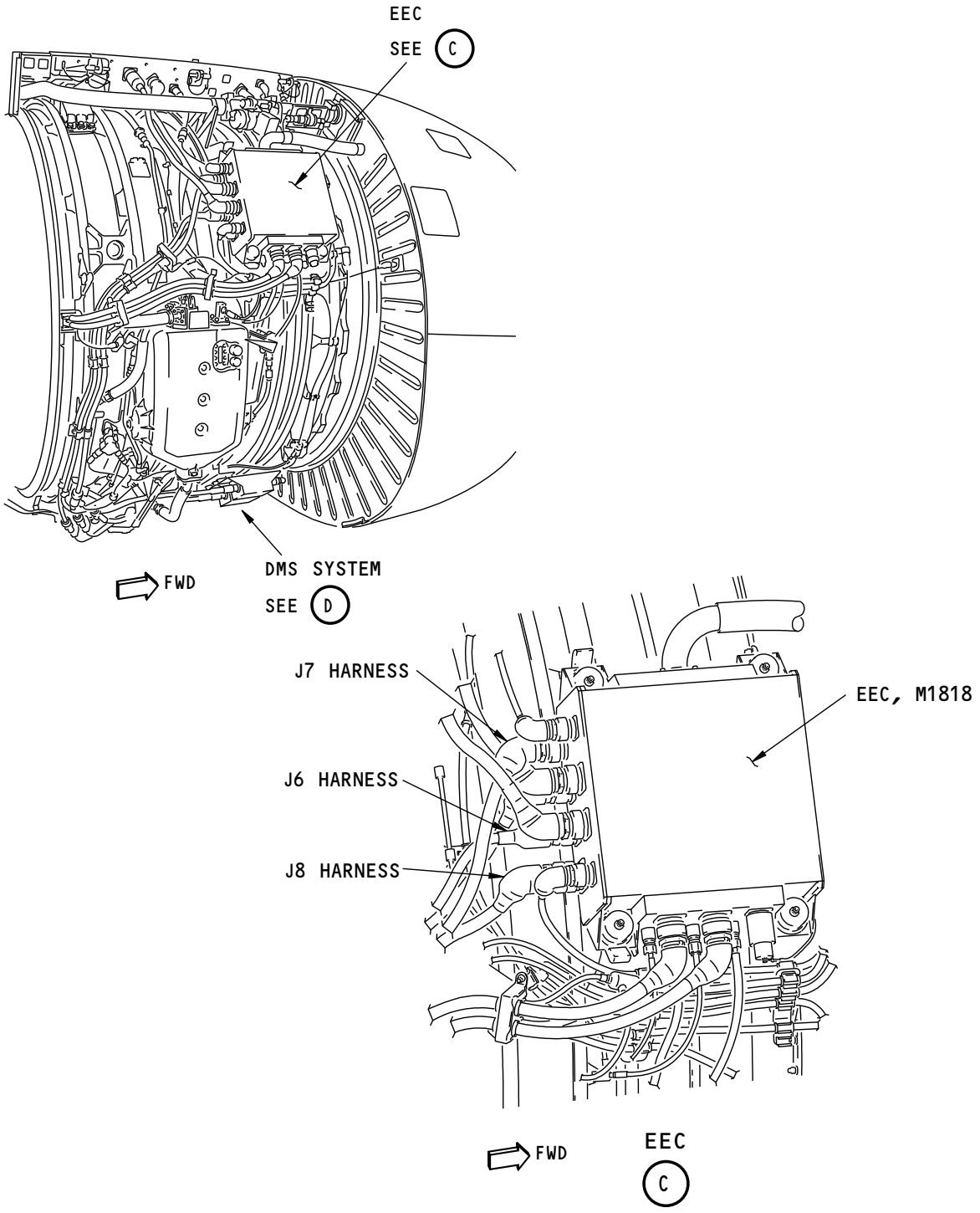


H31583 S0006746584_V1

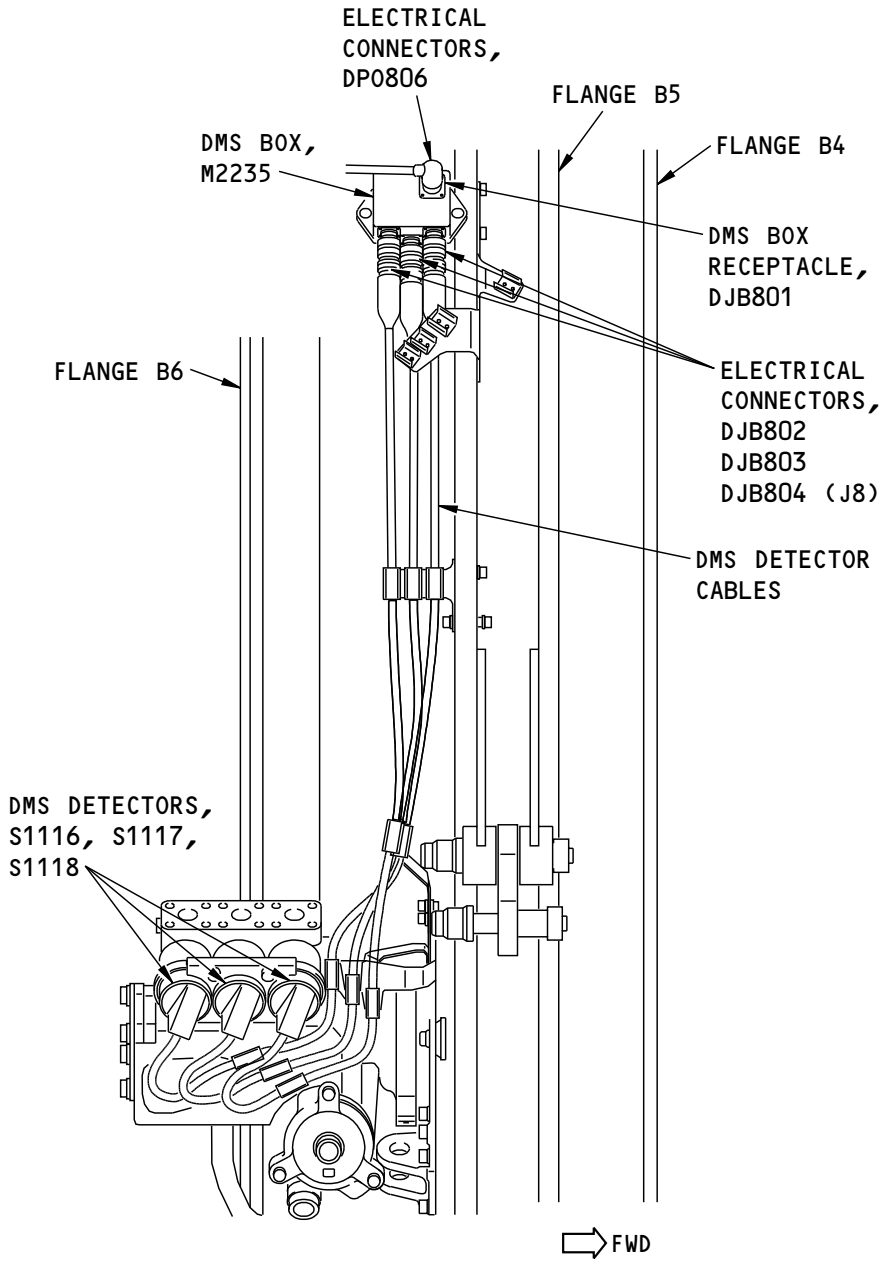
Oil Indicating System Component Location
Figure 301/79-21-00-990-801-F00 (Sheet 1 of 4)



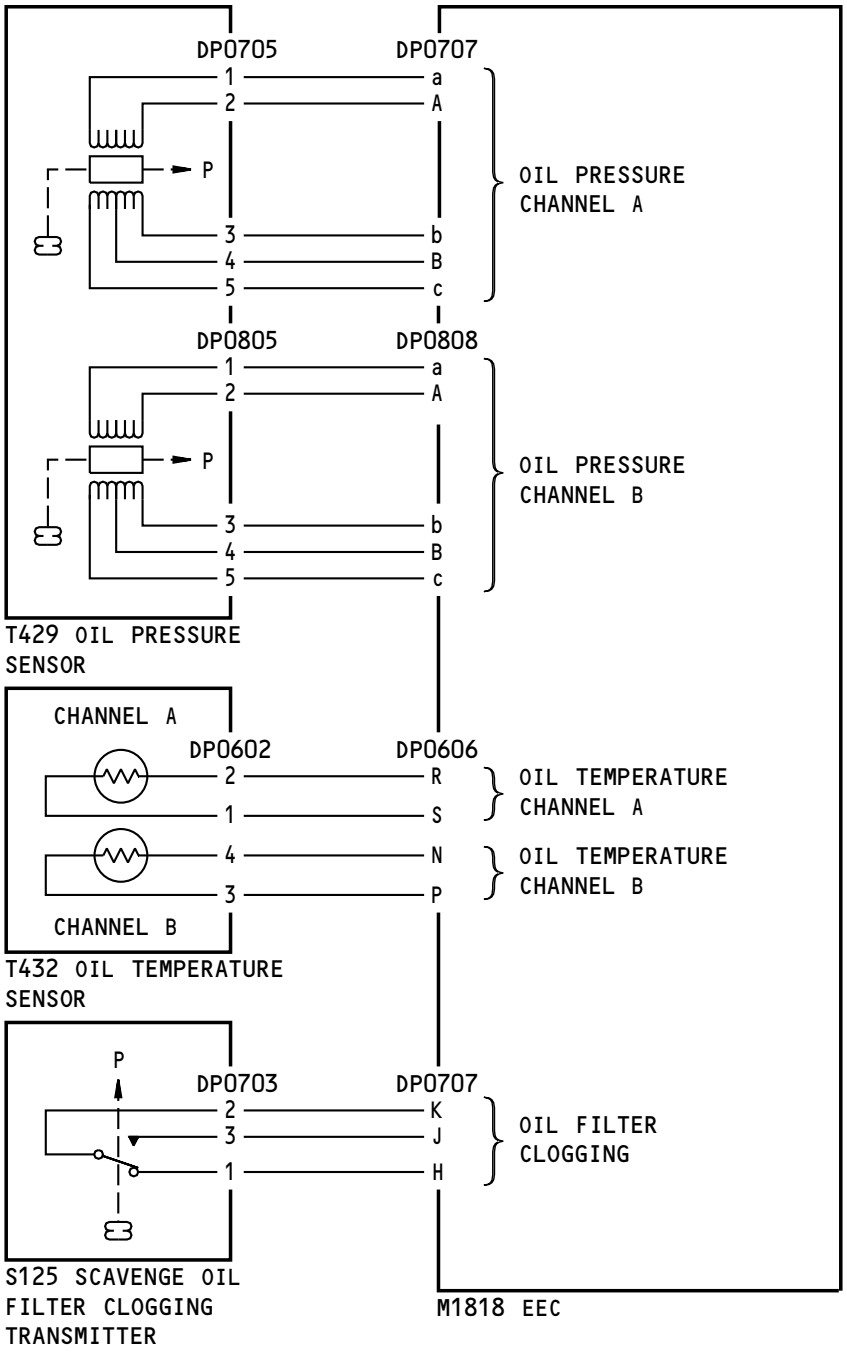
Oil Indicating System Component Location
Figure 301/79-21-00-990-801-F00 (Sheet 2 of 4)



Oil Indicating System Component Location
Figure 301/79-21-00-990-801-F00 (Sheet 3 of 4)



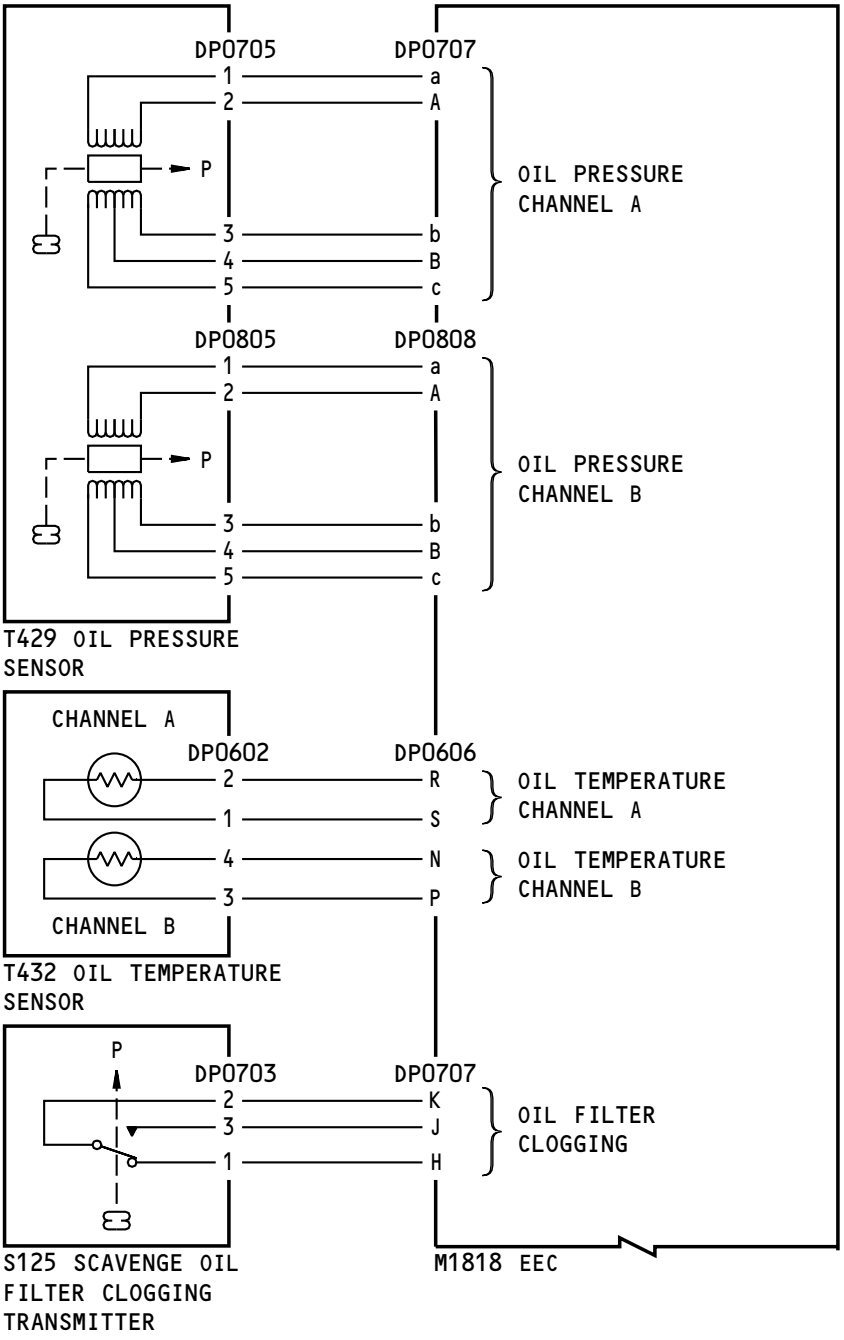
Oil Indicating System Component Location
Figure 301/79-21-00-990-801-F00 (Sheet 4 of 4)



1 THE WDM/SSM ADD A DASH TO THE PIN LETTER TO DENOTE A LOWER CASE PIN, SUCH AS A- = a.

H31727 S0006746588_V1

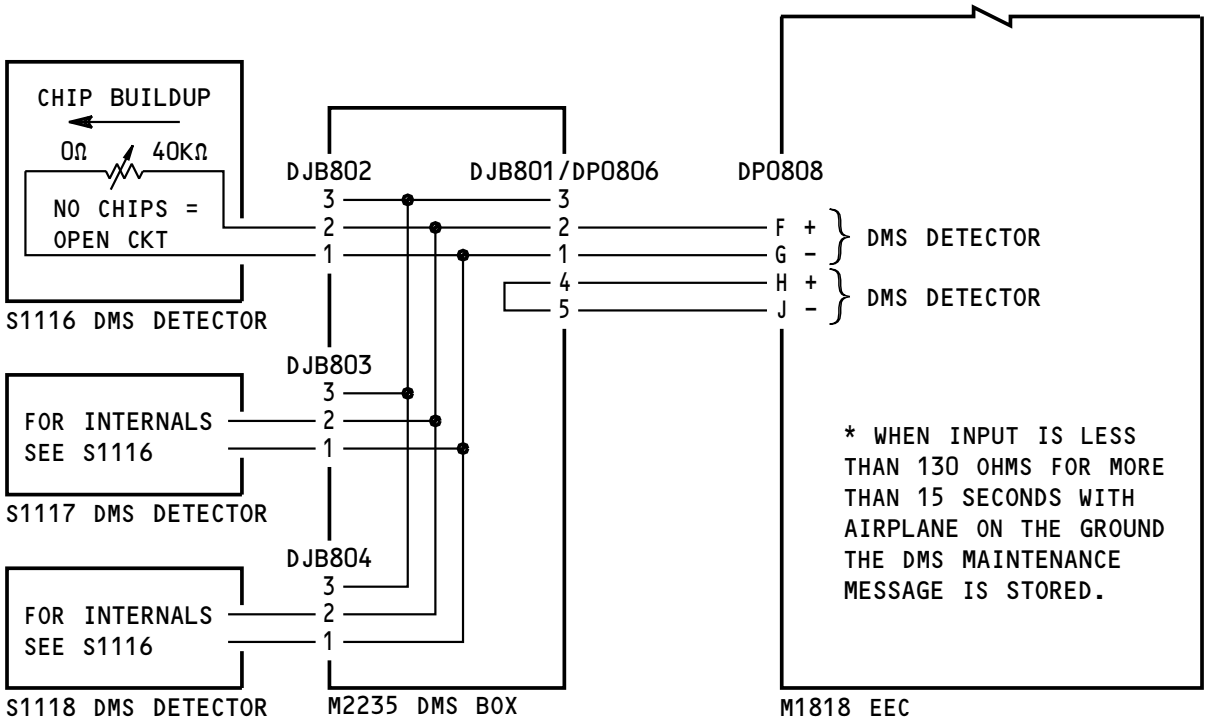
Oil Indicating System Simplified Schematic
Figure 302/79-21-00-990-802-F00 (Sheet 1 of 3)



1 THE WDM/SSM ADD A DASH TO THE PIN LETTER TO DENOTE A LOWER CASE PIN, SUCH AS A- = a.

H31735 S0006746589_V1

Oil Indicating System Simplified Schematic
Figure 302/79-21-00-990-802-F00 (Sheet 2 of 3)



H31736 S0006746590_V1

Oil Indicating System Simplified Schematic
Figure 302/79-21-00-990-802-F00 (Sheet 3 of 3)