

CHAPTER

71

POWER PLANT

(GE90-100 SERIES ENGINES)

777-200/300 FAULT ISOLATION MANUAL

CHAPTER 71 POWER PLANT

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

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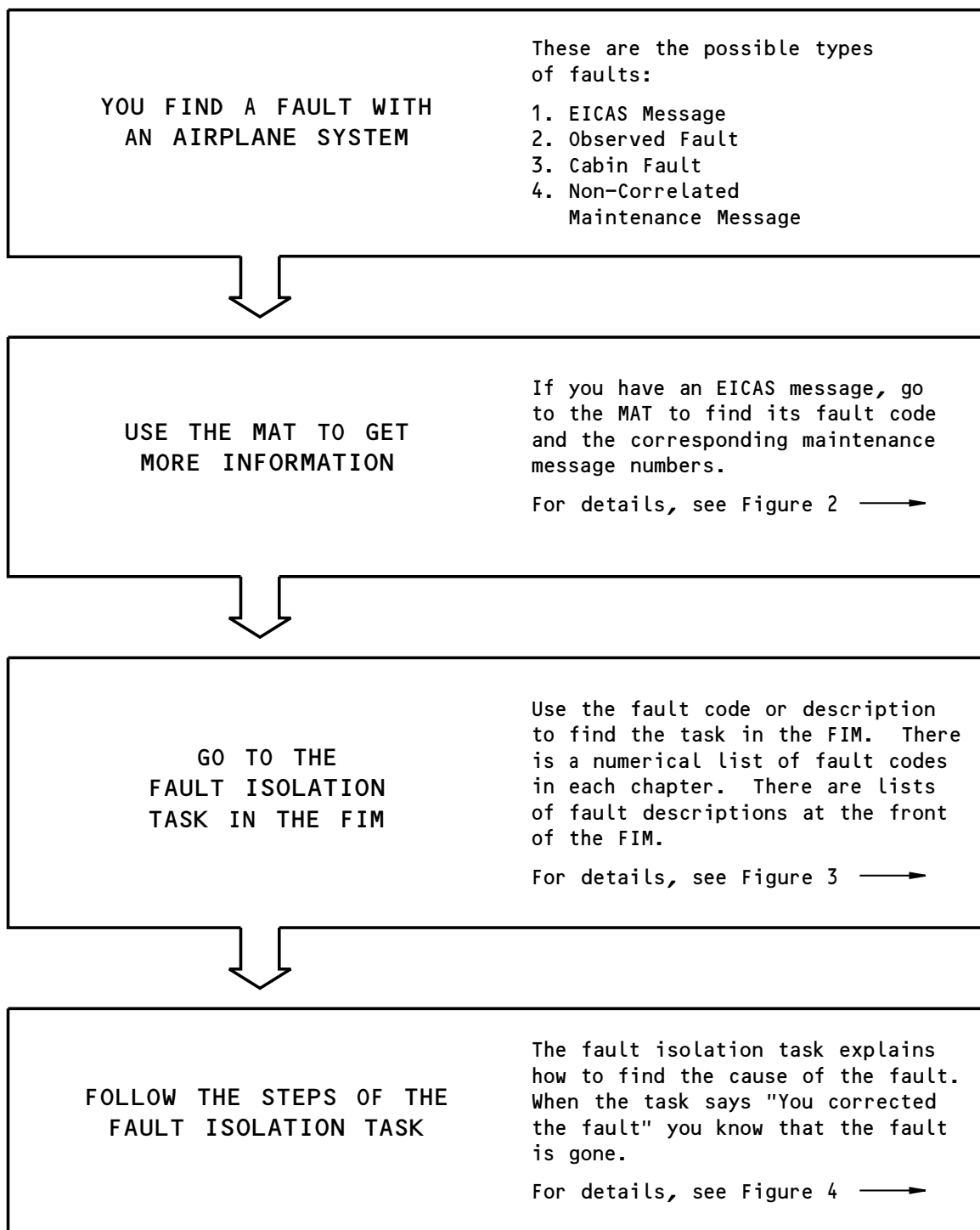
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**777-200/300
FAULT ISOLATION MANUAL**

E84424 S0000132469_V1

**Basic Fault Isolation Process
Figure 1**

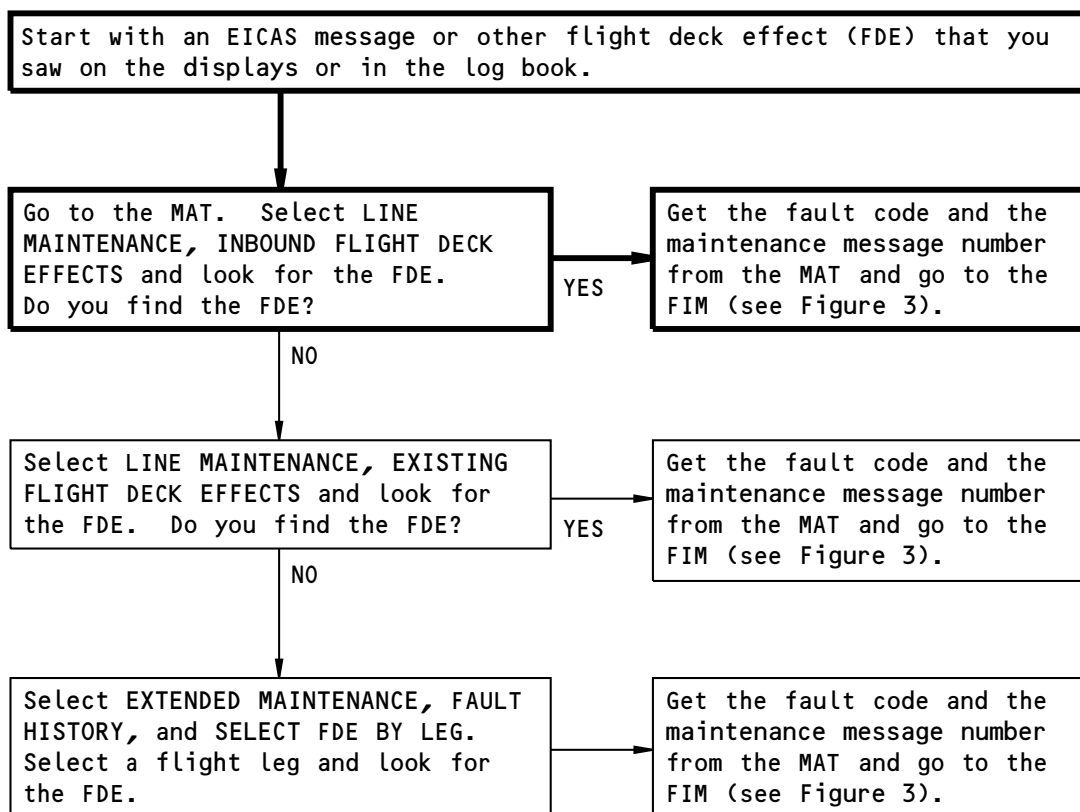
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NOTE: The bold lines show the most common path.

E84425 S0000132475_V1

Getting Fault Information from the MAT
Figure 2

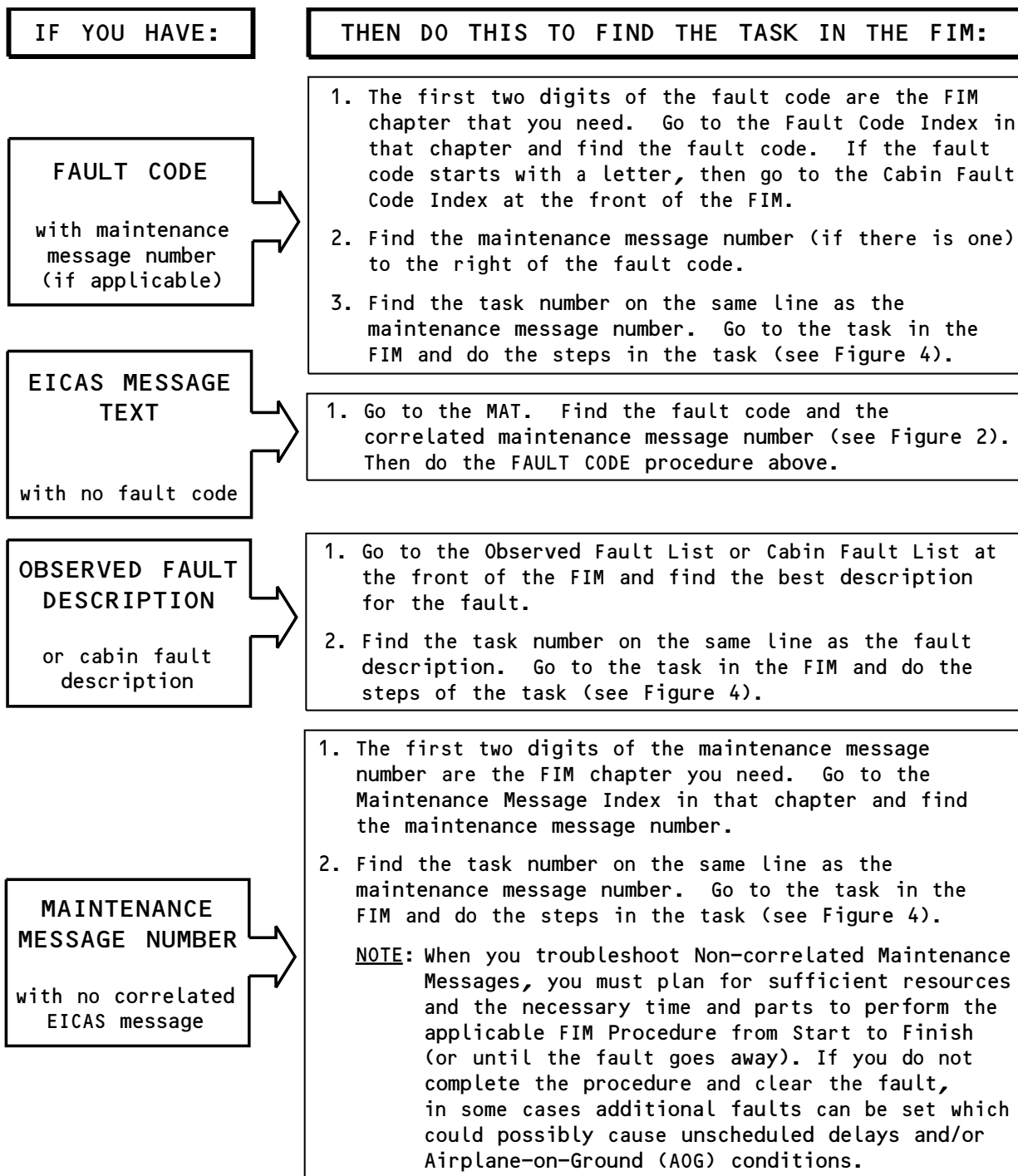
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E84427 S0000132476_V2

Finding the Fault Isolation Task in the FIM
Figure 3

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**777-200/300
FAULT ISOLATION MANUAL****ASSUMED CONDITIONS AT START OF TASK**

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

INITIAL EVALUATION PARAGRAPH

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

FAULT ISOLATION STEPS

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

WIRING CHECKS

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

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

E84428 S0000132477_V3

**Doing the Fault Isolation Task
Figure 4**

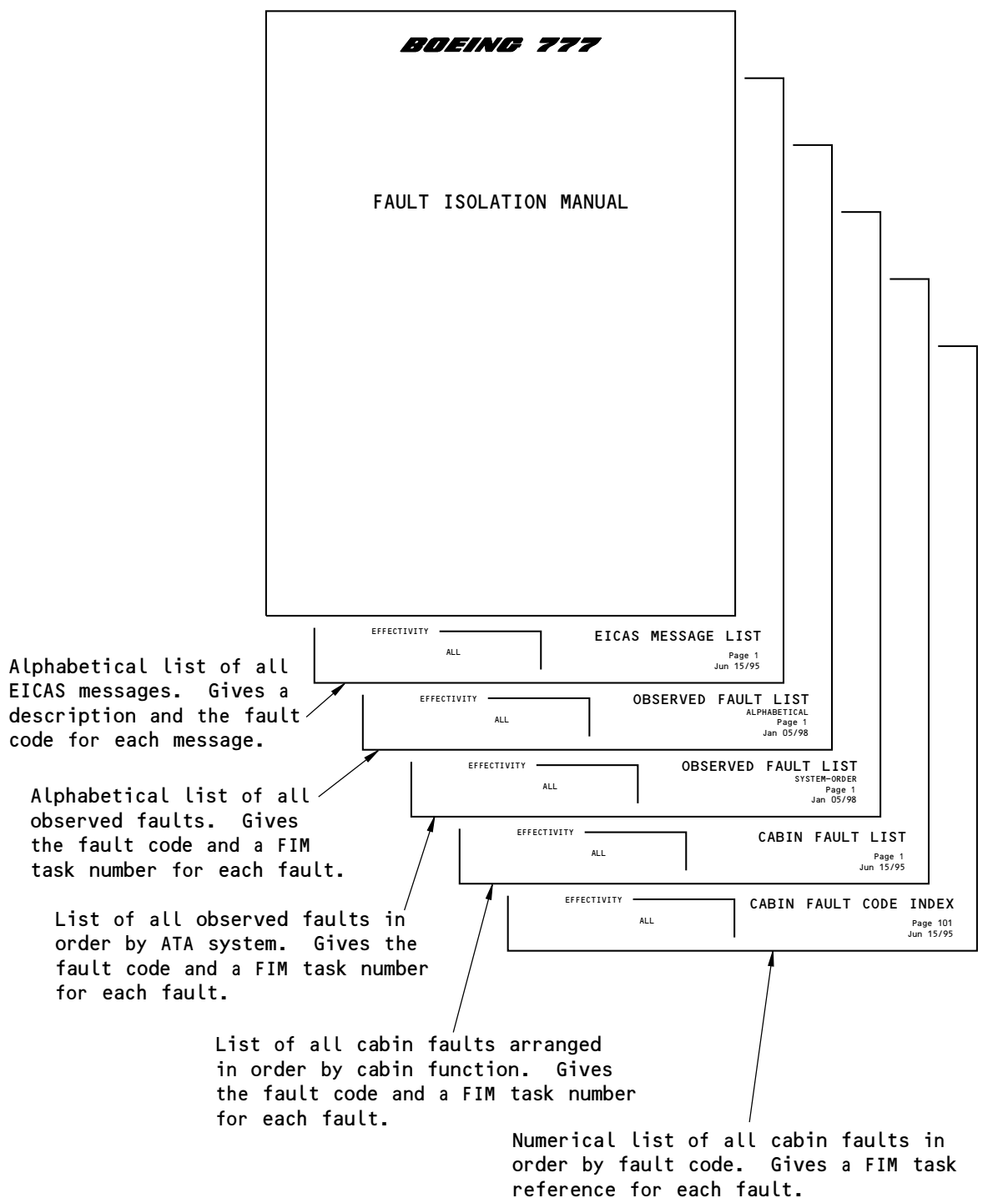
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F39750 S0000132478_V1

Subjects at Front of FIM
Figure 5

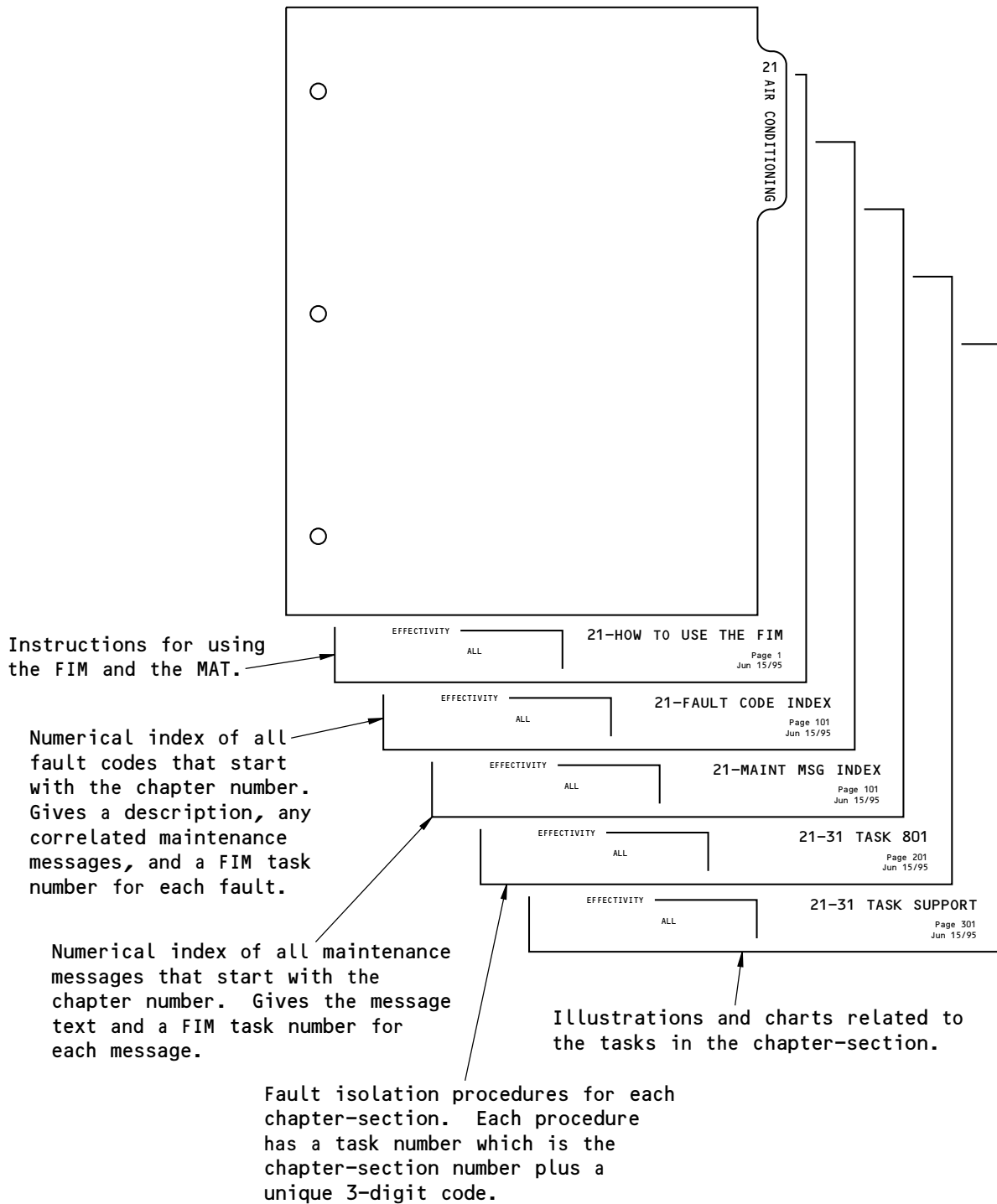
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F39837 S0000132479_V1

Subjects in Each FIM Chapter
Figure 6

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
710 301 51	EGT indication (engine): red - left engine.	73-34871	73-22 TASK 853
710 301 52	EGT indication (engine): red - right engine.	73-34872	73-22 TASK 853
710 302 51	EGT indication (engine): amber - left engine.		71-05 TASK 813
710 302 52	EGT indication (engine): amber - right engine.		71-05 TASK 813
710 303 51	EGT indication (engine): shows a hot start - left engine.	73-34881	73-22 TASK 854
710 303 52	EGT indication (engine): shows a hot start - right engine.	73-34882	73-22 TASK 854
710 311 51	N1 indication (engine): red - left engine.	73-34852	73-22 TASK 851
710 311 52	N1 indication (engine): red - right engine.	73-34851	73-22 TASK 851
710 321 51	N2 indication (engine): red - left engine.	73-34861	73-22 TASK 852
710 321 52	N2 indication (engine): red - right engine.	73-34862	73-22 TASK 852
710 333 51	Vibration indication (engine): white - left engine.		77-05 TASK 804
710 333 52	Vibration indication (engine): white - right engine.		77-05 TASK 804
710 611 51	Birdstrike at engine inlet - left engine.		71-05 TASK 801
710 611 52	Birdstrike at engine inlet - right engine.		71-05 TASK 801
710 612 51	Surge or stall of engine during forward thrust - left engine.		71-05 TASK 807
710 612 52	Surge or stall of engine during forward thrust - right engine.		71-05 TASK 807
710 613 51	Surge or stall of engine during reverse thrust - left engine.		71-05 TASK 807
710 613 52	Surge or stall of engine during reverse thrust - right engine.		71-05 TASK 807
710 614 51	Power fluctuations of engine - left engine.		71-05 TASK 806
710 614 52	Power fluctuations of engine - right engine.		71-05 TASK 806
710 616 51	Auto accel of engine - left engine.		71-05 TASK 802
710 616 52	Auto accel of engine - right engine.		71-05 TASK 802
710 617 51	Auto decel or thrust loss of engine - left engine.		71-05 TASK 803
710 617 52	Auto decel or thrust loss of engine - right engine.		71-05 TASK 803
710 631 51	Engine: slow response to thrust lever movement - left engine.		71-05 TASK 804
710 631 52	Engine: slow response to thrust lever movement - right engine.		71-05 TASK 804
710 641 51	Oil consumption of engine is high - left engine.		71-05 TASK 805

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FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
710 641 52	Oil consumption of engine is high - right engine.		71-05 TASK 805
710 642 51	Oil leakage or fuel leakage from drain at engine - left engine.		71-05 TASK 810
710 642 52	Oil leakage or fuel leakage from drain at engine - right engine.		71-05 TASK 810
710 645 51	Smoke or fumes in cabin: pneumatic power supplied by engine - left engine.		71-05 TASK 811
710 645 52	Smoke or fumes in cabin: pneumatic power supplied by engine - right engine.		71-05 TASK 811
710 821 51	Rumble from engine during ground operation - left engine.		71-05 TASK 812
710 821 52	Rumble from engine during ground operation - right engine.		71-05 TASK 812
710 831 51	Fan cowl: does not close when DOWN actuation and control switch pushed - left engine.		71-10 TASK 806
710 831 52	Fan cowl: does not close when DOWN actuation and control switch pushed - right engine.		71-10 TASK 808
710 832 51	Fan cowl: does not open when UP actuation and control switch pushed - left engine.		71-10 TASK 805
710 832 52	Fan cowl: does not open when UP actuation and control switch pushed - right engine.		71-10 TASK 807
710 833 51	Thrust reverser: does not close when DOWN actuation and control switch pushed - left engine.		71-10 TASK 803
710 833 52	Thrust reverser: does not close when DOWN actuation and control switch pushed - right engine.		71-10 TASK 804
710 834 51	Thrust reverser: does not open when UP actuation and control switch pushed - left engine.		71-10 TASK 802
710 834 52	Thrust reverser: does not open when UP actuation and control switch pushed - right engine.		71-10 TASK 801

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FAULT ISOLATION MANUAL****801. Bird Strike - Fault Isolation****A. Fault Isolation Procedure**

- (1) Do this task: Engine Birdstrike Inspection, AMM TASK 71-00-00-200-812-H01.

————— **END OF TASK** —————

802. Engine Auto Accel - Fault Isolation**A. Fault Isolation Procedure**

- (1) Get access to the Present Leg Faults menu on the MAT and look for one or more of these EICAS messages:
 - (a) ENG CONTROL L (R)
 - (b) ENG EEC C1 L (R)
- (2) If you see one or more of these EICAS messages, look for correlated maintenance messages and do the corrective action in the FIM for that message.
- (3) If you do NOT see one or more of these EICAS messages, get access to Existing Scheduled Maintenance Task screen on the MAT and look for the ENG EEC C2 L (R) message.
- (4) If you see this message, look for correlated maintenance messages and do the corrective action in the FIM for those messages.
- (5) If you do NOT see this message, replace the EEC (FADEC), M73003 and the HMU, M76001.
These are the tasks:
EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01
EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01
Hydromechanical Unit Removal, AMM TASK 73-21-14-000-801-H01
Hydromechanical Unit Installation, AMM TASK 73-21-14-400-801-H01.

————— **END OF TASK** —————

803. Engine Auto Decel or Thrust Loss - Fault Isolation**A. Fault Isolation Procedure**

- (1) Get access to the Present Leg Faults menu on the MAT and look for one or more of these EICAS messages:
 - (a) ENG CONTROL L (R)
 - (b) ENG EEC C1 L (R)
- (2) If you see one or more of these EICAS messages, look for correlated maintenance messages and do the corrective action in the FIM for that message.
- (3) If you do NOT see one or more of these EICAS messages, get access to Existing Scheduled Maintenance Task screen on the MAT and look for the ENG EEC C2 L (R) message.
- (4) If you see this message, look for correlated maintenance messages and do the corrective action in the FIM for those messages.
- (5) If you do NOT see this message, then continue.
- (6) Do a check of the PS3 and P3B air tubes for unwanted material (blockage), obvious signs of damage, and loose B-nuts.
 - (a) Clean, repair, or replace as necessary.
- (7) If you do NOT see this message, replace the EEC (FADEC), M73003 and the HMU, M76001.

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These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01

Hydromechanical Unit Removal, AMM TASK 73-21-14-000-801-H01

Hydromechanical Unit Installation, AMM TASK 73-21-14-400-801-H01.

— END OF TASK —

804. Engine Has Slow Response to Thrust Lever Movement - Fault Isolation

A. Fault Isolation Procedure

- (1) Get access to the Present Leg Faults menu on the MAT and look for one or more of these EICAS messages:
 - (a) ENG CONTROL L (R)
 - (b) ENG EEC C1 L (R)
- (2) If you see one or more of these EICAS messages, look for correlated maintenance messages and do the corrective action in the FIM for that message.
- (3) If you do NOT see one or more of these EICAS messages, get access to Existing Scheduled Maintenance Task screen on the MAT and look for the ENG EEC C2 L (R) message.
- (4) If you see this message, look for correlated maintenance messages and do the corrective action in the FIM for those messages.
- (5) If you do NOT see this message, then continue.
- (6) Do a check of the PS3 and P3B air tubes for unwanted material (blockage), obvious signs of damage, and loose B-nuts.
 - (a) Clean, repair, or replace as necessary.
- (7) If you do NOT find fault with the air tubes, replace the HMU, M76001.

These are the tasks:

Hydromechanical Unit Removal, AMM TASK 73-21-14-000-801-H01

Hydromechanical Unit Installation, AMM TASK 73-21-14-400-801-H01.

- (8) If the fault continues, replace the EEC (FADEC), M73003.

These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

— END OF TASK —

805. Engine Oil Consumption High or Low Oil Quantity - Fault Isolation

A. Fault Isolation Procedure

- (1) Do this task: Engine Oil System (External Surfaces (Walk Around)) Inspection, AMM TASK 79-00-00-200-801-H01.
- (2) Do this task: Engine Oil System (Fan Cowl Panels and Thrust Reversers Open) Inspection, AMM TASK 79-00-00-200-802-H01.
- (3) Do this task: Engine Vents and Drains Examination, AMM TASK 71-71-00-700-801-H01.
- (4) Do this task: Engine Oil System (Internal) Inspection, AMM TASK 79-00-00-200-803-H01.

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- (5) If there is a sudden increase in oil consumption more than 0.66 quart per hour (0.62 liter per hour) in one flight:
 - (a) Do a check for oil leakage from the transfer gearbox assembly (TGB) horizontal support housing (AMM TASK 72-60-00-200-801-H01).
- (6) Use the fluorescent penetrant inspection to do an inspection of the transfer gearbox assembly (TGB) horizontal support for cracks (AMM TASK 70-11-06-230-801-H01).
 - (a) Do a check for oil leakage from the Turbine Center Frame oil supply tube (AMM TASK 79-00-00-200-802-H01).
- (7) Look at the oil quantity display for the applicable engine on the EICAS Performance maintenance page.
- (8) Do a visual check of the engine oil quantity.
- (9) If the maintenance page value does not match the actual quantity, replace the oil quantity transmitter, M79001 (AMM TASK 79-31-01-000-801-H01 and AMM TASK 79-31-01-400-801-H01).
- (10) If the fault continues, replace the lube and scavenge pump (AMM TASK 79-21-03-000-801-H01 and AMM TASK 79-21-03-400-801-H01).
- (11) If the fault continues, replace the oil eductor valve (AMM TASK 79-21-17-000-801-H01 and AMM TASK 79-21-17-400-801-H01).
- (12) If the fault continues, replace the oil pressurizing valve (AMM TASK 79-21-18-000-801-H01 and AMM TASK 79-21-18-400-801-H01).

————— **END OF TASK** —————

806. Power Fluctuates - Fault Isolation

A. **Fault Isolation Procedure**

- (1) Get access to the Present Leg Faults menu on the MAT and look for one or more of these EICAS messages:
 - (a) ENG CONTROL L (R)
 - (b) ENG EEC C1 L (R)
- (2) If you see one or more of these EICAS messages, look for correlated maintenance messages and do the corrective action in the FIM for that message.
- (3) If you do NOT see one or more of these EICAS messages, get access to Existing Scheduled Maintenance Task screen on the MAT and look for the ENG EEC C2 L (R) message.
- (4) If you see this message, look for correlated maintenance messages and do the corrective action in the FIM for those messages.
- (5) If you do NOT see this message, then continue.
- (6) Do a check of the PS3 and P3B air tubes for unwanted material (blockage), obvious signs of damage, and loose B-nuts.
 - (a) Clean, repair, or replace as necessary.
- (7) If you do NOT find fault with the air tubes, replace the HMU, M76001.
These are the tasks:
Hydromechanical Unit Removal, AMM TASK 73-21-14-000-801-H01
Hydromechanical Unit Installation, AMM TASK 73-21-14-400-801-H01.
- (8) If the fault continues, replace the EEC (FADEC), M73003.

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These are the tasks:

EEC (FADEC) Removal, AMM TASK 73-21-15-000-801-H01

EEC (FADEC) Installation, AMM TASK 73-21-15-400-801-H01.

————— **END OF TASK** —————

807. Engine Stall - Fault Isolation

A. Initial Evaluation

- (1) Do this task: Engine Stall Inspection, AMM TASK 71-00-00-200-801-H01. As part of the engine stall inspection, do the inspection tasks that follow in 10 or less cycles.
- (2) Do an inspection of the Variable Stator Vane (VSV) system hardware as follows. Refer to (High Pressure Compressor Section (HPC) Inspection, AMM TASK 72-30-00-200-801-H01):
 - Inlet Guide Vane (IGV) & VSV actuation rings
 - VSV guide pads
 - Lever arms and bushings
 - Connector links
 - VSV actuation shaft.
- (a) If you find problems during the visual inspection, repair and/or replace components as it is necessary, and then do the repair confirmation at the end of this task.
- (3) Do an inspection of the fan hub frame IGV guide pads (High Pressure Compressor Section (HPC) Inspection, AMM TASK 72-30-00-200-801-H01) in 10 or less cycles.
 - (a) If you find problems during the visual inspection, repair and/or replace components as it is necessary, and then do the repair confirmation at the end of this task.
- (4) If the power plant is not in the limits, replace the power plant.

These are the tasks:

Power Plant Removal, AMM TASK 71-00-02-000-811-H00

Power Plant Installation, AMM TASK 71-00-02-400-811-H00.

- (5) If the power plant is in the limits, then continue.

B. Fault Isolation Procedure

- (1) Get access to the Present Leg Faults menu on the MAT and look for one or more of these EICAS messages:
 - (a) ENG CONTROL L (R)
 - (b) ENG EEC C1 L (R)
- (2) If you see one or more of these EICAS messages, look for correlated maintenance messages and do the corrective action in the FIM for that message.
- (3) If you do NOT see one or more of these EICAS messages, get access to Existing Scheduled Maintenance Task screen on the MAT and look for the ENG EEC C2 L (R) message.
- (4) If you see this message, look for correlated maintenance messages and do the corrective action in the FIM for those messages.
- (5) If you do NOT see this message, remove the IP check valve and make sure the valve operates freely and smoothly, and there are no obvious signs of damage.

This is the task:

IP Check Valve Removal, AMM TASK 36-11-06-000-807-004.

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- (a) If the valve is not serviceable, install a replacement IP check valve.
This is the task:
IP Check Valve Installation, AMM TASK 36-11-06-400-807-004.
- (6) If you do NOT find fault with the IP check valve, do the inspection of the VSV hardware (AMM TASK 75-30-00-210-801-H01).
- (7) If you do NOT find fault with the VSV hardware, do the inspection of the VBV actuation hardware (AMM TASK 75-30-00-210-801-H01).
- (8) Do a check of the PS3 and P3B air tubes for unwanted material (blockage), obvious signs of damage, and loose B-nuts.
(a) Clean, repair, or replace as necessary.
- (9) If you do NOT find fault with the air tubes, replace the HMU, M76001.
These are the tasks:
Hydromechanical Unit Removal, AMM TASK 73-21-14-000-801-H01
Hydromechanical Unit Installation, AMM TASK 73-21-14-400-801-H01.
- (10) Do the engine water wash after 10 flight cycles or less (AMM TASK 72-00-00-100-801-H01).
NOTE: For a better wash, you can use the hot water and detergent.

———— **END OF TASK** ————

808. N1 Redline Exceedance - Fault Isolation**A. Description**

- (1) The engine fan speed signal (N1) indicates that N1 is greater than 110.5 percent for 1 second.
This fault is reported whenever the EEC is powered.

B. Initial Evaluation

- (1) Do this task: Overspeed Inspection, AMM TASK 71-00-00-200-805-H01.
(a) If you find damage that is more than the limits, replace the engine.
These are the tasks:
Power Plant Removal, AMM TASK 71-00-02-000-811-H00
Power Plant Installation, AMM TASK 71-00-02-400-811-H00.
(b) If you do not find damage, then continue.

C. Fault Isolation Procedure

- (1) Get access to PRESENT LEG FAULTS and look for these EICAS messages and the correlated maintenance messages for the applicable engine:
(a) ENG CONTROL L (R)
(b) ENG EEC C1 L (R)
- (2) If you see one of these messages, do the fault isolation task for the correlated maintenance message.
- (3) If you do not see one of these messages, or if the fault symptoms continue, replace the HMU, M76001.

These are the tasks:

Hydromechanical Unit Removal, AMM TASK 73-21-14-000-801-H01

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Hydromechanical Unit Installation, AMM TASK 73-21-14-400-801-H01.

— END OF TASK —

809. N2 Redline Exceedance - Fault Isolation

A. Description

- (1) The engine core speed signal (N2) indicates that N2 is greater than 122 percent.

B. Initial Evaluation

- (1) Do this task: Overspeed Inspection, AMM TASK 71-00-00-200-805-H01.
 - (a) If you find damage that is more than the limits, replace the engine.
These are the tasks:
Power Plant Removal, AMM TASK 71-00-02-000-811-H00
Power Plant Installation, AMM TASK 71-00-02-400-811-H00.
 - (b) If you do not find damage, then continue.

C. Fault Isolation Procedure

- (1) Get access to PRESENT LEG FAULTS and look for these EICAS MESSAGES and the correlated maintenance messages for the applicable engine:
 - (a) ENG CONTROL L (R)
 - (b) ENG EEC C1 L (R)
- (2) If you see one of these messages, do the fault isolation task for the correlated maintenance message.
- (3) If you do not see one of these messages, or if the fault symptoms continue, replace the HMU, M76001.
These are the tasks:
Hydromechanical Unit Removal, AMM TASK 73-21-14-000-801-H01
Hydromechanical Unit Installation, AMM TASK 73-21-14-400-801-H01.

— END OF TASK —

810. Engine Drain Mast Fuel or Oil Leakage - Fault Isolation

A. Description

- (1) There is fuel or oil leakage from the engine drain mast.

B. Fault Isolation Procedure

- (1) Do this task: Engine Vents and Drains Examination, AMM TASK 71-71-00-700-801-H01.

— END OF TASK —

811. The Left (Right) Engine is the Cause of Oil/Fuel Fumes/Smoke in the Cabin - Fault Isolation

A. Initial Evaluation

- (1) You must do the procedure to isolate the source of the problem (APU or engine) before you do this fault isolation procedure.

B. Fault Isolation Procedure

- (1) Do these steps for oil fumes/smoke in the cabin:
 - (a) Look at your records to see if related observed faults or EICAS messages were reported.

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- 1) If related observed faults or EICAS messages were reported, then do the applicable fault isolation procedures for those faults.
- 2) If related observed faults or EICAS messages were not reported, then continue.
- (b) Do the inspection tasks that follow for signs of an internal engine failure:
 - 1) Do this task: Debris Monitoring System (DMS) (Scheduled Maintenance Task) Inspection, AMM TASK 79-00-00-700-801-H01.
 - 2) Do this task: Oil Filter Contamination (Scheduled Maintenance Requirement) Inspection, AMM TASK 79-21-00-700-801-H01.
 - 3) Do this task: Engine Oil System (Lube and Scavenge Pump Screens and Magnetic Plugs) Inspection, AMM TASK 79-00-00-200-805-H01.
- (c) If you do not find signs of an internal engine failure, then you must make a decision based on your experience, or your airline policy, if the engine is satisfactory to continue in monitored service.
- (d) If you find signs of an internal engine failure, or if the problem continues, replace the engine.
These are the tasks:
Power Plant Removal, AMM TASK 71-00-02-000-811-H00
Power Plant Installation, AMM TASK 71-00-02-400-811-H00.
- (2) Do these steps for fuel fumes/smoke in the cabin:
 - (a) Do an inspection of the fuel nozzles for carbon contamination (AMM TASK 72-00-00-290-804-H01).
 - 1) If you find carbon contamination, replace the applicable fuel nozzles.
These are the tasks:
Fuel Nozzle Removal, AMM TASK 73-11-05-000-801-H01
Fuel Nozzle Installation, AMM TASK 73-11-05-400-801-H01.
 - 2) If you do not find carbon contamination, continue the engine in service and monitor on the subsequent flight.
 - (b) If the problem continues, replace the engine.
These are the tasks:
Power Plant Removal, AMM TASK 71-00-02-000-811-H00
Power Plant Installation, AMM TASK 71-00-02-400-811-H00.

————— **END OF TASK** —————

812. Engine Has Audible Rumble During Ground Operation - Fault Isolation

A. Description

- (1) The engine has an audible rumble you can hear during ground operation. This engine rumble can be a normal property of the engine when the engine operates between 60% and 70% N1 and will occur most frequently when the aircraft is not facing into the wind during ground operations. Because of the audible inconvenience of the rumble, it is recommended to not permit the engine to operate at the speed that the rumble is present any longer than necessary.

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- (1) Do a visual check for both unwanted material and damage to these areas of the engine:
 - (a) Internal surfaces of the engine inlet
 - (b) Fan blades
 - (c) Inlet guide vanes
 - (d) Acoustic panels
 - (e) Primary nozzle
 - (f) Forward centerbodies
 - (g) Aft centerbodies
 - (h) Turbine rear frame vane trailing edges
 - (i) If no damage or unwanted material is found, then continue.
 - (j) If damage or unwanted material is found, repair or replace the engine.
- (2) Do this task: Engine Oil System (DMS) (Scheduled Maintenance Task) Inspection, AMM TASK 79-00-00-200-804-H01.
 - (a) If no fault is found, then return the engine to service.
 - (b) If a fault is found, repair or replace the engine.

These are the tasks:
Power Plant Removal, AMM TASK 71-00-02-000-811-H00
Power Plant Installation, AMM TASK 71-00-02-400-811-H00.
- (3) Do an inspection of the HPC Stage 1 blade (AMM TASK 72-00-00-290-803-H01).

————— **END OF TASK** —————

813. EGT Indication Red - No Correlated Maintenance Message**A. Description**

- (1) The EGT indication is red, and there is no correlated maintenance message.

NOTE: After the cause of the EGT exceedance has been identified and the applicable repairs are completed, you can clear the exceedance indication by erasing the maintenance page auto-snapshot generated by the EGT exceedance event. To erase the auto-snapshot, do one of these tasks: Erasing a Snapshot with the Erase Selection Menu, AMM TASK 31-61-00-800-810, and Erasing a Snapshot with the Page Menu, AMM TASK 31-61-00-800-806.

B. Fault Isolation Procedure

- (1) Do the task for maintenance message 73-34871(2).

————— **END OF TASK** —————

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805. Left Engine Fan Cowl Panel Does Not Open (Power Method)

A. Description

- (1) The left or right fan cowl panels on the left engine do not open with the power method.
 - (a) This procedure has these paragraphs:
 - 1) Initial evaluation
 - 2) A check of the oil quantity in the oil tank reservoir of the PDOS power pack.
 - 3) A visual check of the area around the PDOS installation, the tubes and flexhoses.
 - 4) A check for oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack.
 - 5) A check of the hydraulic cowl opening flexhoses for leakage.
 - 6) A check for oil leakage from the fan cowl panel opening actuator.
 - 7) A check of the electrical control system for the left side and right side fan cowl panel which has these steps:
 - a) A check of continuity through the fan cowl panel switch.
 - b) A check of the control circuit between the fan cowl panel switch and the COWL MTR relay
 - c) A check of the control circuit between the fan cowl panel switch and the solenoid valves in the power pack
 - d) A check for electrical power to the fan cowl panel switch from the circuit breaker.
 - e) A check of the electrical power to the motor in the power pack.
 - 8) Repair confirmation

B. Possible Causes

- (1) Oil leakage from the quick disconnects, hoses or tubes.
- (2) Oil leakage from the opening actuator rod end seals or inlet port.
- (3) Oil leakage from the PDOS power pack solenoid valves, ports or oil tank.
- (4) Missing electrical ground, broken wires or bent pins in the electrical connectors or broken insulation on the wire bundles or the control switches.
- (5) A circuit problem or a cowl door motor relay problem.
- (6) An internal mechanical or electrical problem in the PDOS power pack motor or solenoid valves.
- (7) No airplane electrical power to the PDOS power pack.
- (8) No control signal from the control switches to the solenoid valves in the PDOS power pack.
- (9) The oil tank on the PDOS power pack is not serviced.

C. Circuit Breakers

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

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	12	C78613	L ENG COWL DR MOT CTRL
F	6	C78301	L ENG COWL DR MOT

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- (1) When the left fan cowl open switch is selected the PDOS left enable solenoid valve and the motor are energized. The motor turns the pump driveshaft to operate the three pump piston assemblies. Low pressure fluid, from the reservoir, goes through the inlet and the outlet check valves of the pump piston assemblies. This supplies high pressure to the left fan cowl actuator connection. Pressure supply to the actuators is controlled by a system relief valve between the pump outlet and the reservoir.
- (2) When the right fan cowl open switch is selected the PDOS right enable solenoid valve and the motor are energized. The motor turns the pump driveshaft to operate the three pump piston assemblies. Low pressure fluid, from the reservoir, goes through the inlet and the outlet check valves of the pump piston assemblies. This supplies high pressure to the right fan cowl actuator connection. Pressure supply to the actuators is controlled by a system relief valve between the pump outlet and the reservoir.
- (3) The WDM gives the nomenclature for the left or right select solenoid valves as L or R T-R/FAN SV. The WDM nomenclature for the left or right enable solenoid valves as L or R ENBL SV. The WDM nomenclature for the retract solenoid is RETR SV.
- (4) The switch control unit has two switches and a printed circuit board with diodes. A problem with the diodes can cause incorrect operation of the PDOS unit. The switch control unit is interchangeable and can be used to open the fan cowl panel or the thrust reverser. Only some of the circuits through the switch control unit are used to operate the fan cowl panels.

E. Initial Evaluation

- (1) Use the control switch on the engine inlet to open the applicable fan cowl panel with the PDOS power pack.
 - (a) Do this task: Open the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-000-802-H01.
 - (b) If the fan cowl panel does not open with the control switch, continue with the procedure.

F. Fault Isolation Procedure

USE THE FALL ARREST LIFELINE PROCEDURE IF YOU DO NOT USE OTHER SAFETY EQUIPMENT. IF YOU USE THE SAFETY EQUIPMENT OR PROCEDURES INCORRECTLY, IT CAN CAUSE INJURY OR KILL YOU.

- (1) Use the engine strut shock absorbing lanyard personnel equipment, SPL-8818 when you work on or above the engine (AMM TASK 54-52-00-910-804-001).
- (2) Do this task: Forward Fairings Removal, AMM TASK 54-52-01-000-801-001.
- (3) Do a check of the oil quantity in the oil tank reservoir of the PDOS power pack.



DO NOT LET PDOS OIL LEAKAGE COLLECT. IF YOU DO NOT CLEAN THE AREA, DAMAGE CAN OCCUR FROM THE PDOS OIL.

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(CAUTION PRECEDES)



IF YOU MUST ADD PDOS OIL TO THE PDOS PUMP, MAKE SURE THE FAN COWL PANELS AND THRUST REVERSERS ARE COMPLETELY CLOSED OR AN OVERFILL CONDITION COULD OCCUR.

- (a) If it is necessary, do this task: Fill the PDOS Pump with Oil, AMM TASK 12-12-02-610-803-004.
- (b) Do the Repair Confirmation procedure at the end of this task.



DO NOT LET PDOS OIL LEAKAGE COLLECT. IF YOU DO NOT CLEAN THE AREA, DAMAGE CAN OCCUR FROM THE PDOS OIL.

- (4) Look for oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack.
 - (a) If there is oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack, replace the PDOS power pack.
 - 1) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - 2) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - (b) If there is oil leakage from the tubes, tighten the b-nuts on the tubes.
 - (c) Do the Repair Confirmation procedure at the end of this task.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (5) Examine the area under the engine, fan cowl panels and thrust reverser for oil leakage.
 - (a) Look for oil leakage that could have come from the hoses or tubes for the PDOS power pack to the opening actuator for the fan cowl panel or the thrust reverser.
 - (b) Look for oil leakage that could have come from the opening actuator rod end or inlet port.
- (6) Do this task: Open the Fan Cowl Panel (Sling Method), AMM TASK 71-11-04-000-804-H01.
 - (a) As you open the fan cowl panel, look for these conditions.
 - 1) Look for oil leakage from the hoses or tubes.
 - a) If there is oil leakage from the tubes, tighten the b-nuts on the tubes or hoses.
 - 2) Look for oil leakage from the opening actuator rod end or inlet port.
 - 3) Look for broken wires or insulation on the wire bundles and the control switches.
 - a) Repair all wire problems.
 - 4) Look for a problem with the actuator attachment fitting on the engine fan case.
 - a) Replace all broken fittings.
 - NOTE: Use the suppliers component repair procedures.
 - 5) Look for a problem with the actuator attachment fitting on the fan cowl panel.
 - a) Replace all broken fittings.
 - NOTE: Use the suppliers component repair procedures.

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DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (7) Examine the hydraulic cowl opening flexhoses for leakage.
- (a) Do this task: Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01.
 - (b) If the cowl opening flexhose is damaged, replace the flexhose.
 - 1) Do this task: Hydraulic Cowl Opening Flexhoses Removal, AMM TASK 71-12-03-000-801-H01.
 - 2) Do this task: Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01.
 - 3) If there is oil leakage from the hose, tighten the b-nuts on the hose.
 - (c) Do the Repair Confirmation procedure at the end of this task.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (8) If there is oil leakage from the fan cowl panel opening actuator rod end or inlet port or the actuator is damaged, replace the fan cowl panel opening actuator.
- (a) Do this task: Fan Cowl Opening Actuators Removal, AMM TASK 71-12-01-000-801-H01.
 - (b) Do this task: Fan Cowl Opening Actuators Installation, AMM TASK 71-12-01-400-801-H01.
 - (c) Use a cotton wiper, G00034 and remove all the oil leakage on the engine.
 - (d) Do the Repair Confirmation procedure at the end of this task.
- (9) If the left side fan cowl panel did not open, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the left fan cowl panel switch, S78003:
 - 1) Disconnect the connector DS78003 on the left fan cowl panel switch, S78003 (WDM 78-31-11).
 - 2) Push and hold the open button on the left fan cowl panel switch, S78003.
 - a) Do the check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 6 (WDM 78-31-11).

S78003		S78003
DS78003		DS78003
Pin 6		Pin 4
Pin 6		Pin 5
Pin 6		Pin 11
Pin 6		Pin 12
Pin 6		Pin 14
Pin 6		Pin 15

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- b) Do the check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 8 (WDM 78-31-11).

S78003	S78003
DS78003	DS78003
Pin 8	Pin 4
Pin 8	Pin 5
Pin 8	Pin 11
Pin 8	Pin 12
Pin 8	Pin 14
Pin 8	Pin 15

- c) Do the check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 7 and pin 9 (WDM 78-31-11).
- d) If there is no continuity through the switch, replace the left fan cowl panel switch, S78003.
- <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <3> Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the left fan cowl panel switch, S78003 and the L ENG COWL MTR relay, K78105.
- 1) Re-connect the connector DS78003 on the left fan cowl panel switch, S78003 (WDM 78-31-11).
 - 2) Remove the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - 3) Do a check for ground on connector DK78105 pin X2.
 - a) If you find a problem with the wiring, do these steps:

<1> Repair the wiring (WDM 78-31-11).

<2> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.

<3> Do the Repair Confirmation procedure at the end of this task.
 - 4) Push and hold the open button on the left fan cowl panel switch, S78003.
 - 5) Do a check for 28VDC on the L ENG COWL MTR relay, K78105 connector DK78105 pin X1.
 - 6) If 28VDC is not on connector DK78105 pin X1, do these steps:
 - a) Disconnect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - b) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

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S78006 DS78006 Pin 11 Pin 6	S78006 DS78006 Pin 14 Pin 8
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- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- <3> Do the Repair Confirmation procedure at the end of this task.
- c) Do a wiring check between the right T/R cowl switch, S78006 and the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.

S78006 DS78006 Pin 14	K78105 DK78105 Pin X1
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- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - <c> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- d) Do a check for continuity through the right fan cowl panel switch, S78005 between these pins for connector DS78005 (WDM 78-31-11).

S78005 DS78005 Pin 11 Pin 6	S78005 DS78005 Pin 14 Pin 8
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- <1> If there is no continuity through the switch, replace the right fan cowl panel switch, S78005.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- <3> Do the Repair Confirmation procedure at the end of this task.

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- e) Do a wiring check between the right T/R cowl switch, S78006 and the right fan cowl switch, S78005 (WDM 78-31-11).

S78006	S78005
DS78006	DS78005
Pin 11	Pin 14

<1> If you find a problem with the wiring, do these steps:

- <a> Repair the wiring (WDM 78-31-11).
- Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-11).
- <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
- <d> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- <e> Do the Repair Confirmation procedure at the end of this task.

- f) Do a wiring check between the left T/R cowl switch, S78004 and the right fan cowl switch, S78005 (WDM 78-31-11).

S78004	S78005
DS78004	DS78005
Pin 11	Pin 14

<1> If you find a problem with the wiring, do these steps:

- <a> Repair the wiring (WDM 78-31-11).
- Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).
- <c> Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-11).
- <d> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
- <e> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- <f> Do the Repair Confirmation procedure at the end of this task.

- g) Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-11).

S78004	S78004
DS78004	DS78004
Pin 11	Pin 14
Pin 6	Pin 8

<1> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.

- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

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- Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-11).
- <3> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
- <4> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- <5> Do the Repair Confirmation procedure at the end of this task.
- h) Do a wiring check between the left T/R cowl switch, S78004 and the left fan cowl switch, S78003 (WDM 78-31-11).

S78004 DS78004 Pin 11	S78003 DS78003 Pin 14
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- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).
 - <c> Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-11).
 - <d> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - <e> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
 - (c) Do a check of the control circuit between the left fan cowl panel switch, S78003 and the solenoid valves in the left engine, power pack, M78001 (WDM 78-31-11).
- NOTE:** These steps do a check of the circuit to the left enable solenoid.
- 1) Do a check for 28VDC on connector DM78001B pin 1 on the left engine, power pack, M78001.
 - a) Re-connect the connector DS78003 on the left fan cowl panel switch, S78003.
 - b) Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).
 - c) Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-11).
 - d) Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - e) Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - f) Disconnect the connector DM78001B on the left engine, power pack, M78001 (WDM 78-31-11).
 - g) Push and hold the open button on the left fan cowl panel switch, S78003.

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- h) If 28VDC is not on connector DM78001B pin 1, do a wiring check between these pins for connector DS78004 for the left T/R cowl switch, S78004 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

M78001	S78004
DM78001B	DS78004
Pin 1	Pin 15

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).
 - <c> Re-connect the connector DM78001B on the left engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.

- i) Do a check for continuity through the left T/R cowl panel switch, S78004 between these pins for connector DS78004 (WDM 78-31-11).

S78004	S78004
DS78004	DS78004
Pin 12	Pin 15

- <1> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect the connector DM78001B on the left engine, power pack, M78001.
- <3> Do the Repair Confirmation procedure at the end of this task.

- j) Do a wiring check between the left T/R cowl switch, S78004 and the left fan cowl switch, S78003 (WDM 78-31-11).

S78004	S78003
DS78004	DS78003
Pin 12	Pin 15

- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).
 - <c> Re-connect the connector DS78003 on the left fan cowl switch, S78005 (WDM 78-31-11).
 - <d> Do the Repair Confirmation procedure at the end of this task.

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- (d) Do a check for electrical power to the left fan cowl panel switch, S78003 from the circuit breaker (WDM 78-31-11).
- 1) Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).
 - 2) Disconnect the connector DS78003 on the left fan cowl panel switch, S78003 (WDM 78-31-11).
 - 3) Do a check for 28VDC on pin 6 of connector DS78003 for the left fan cowl panel switch, S78003 (Pin 13 ground) (WDM 78-31-11).
 - 4) If 28VDC is not on pin 6 of connector DS78003, do a check for electrical power from the circuit breaker.
 - a) Disconnect the connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect the connector D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - c) Do a check for 28VDC on pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320.
 - d) If 28VDC is not on pin 21 of connector D32017P, do a wiring check between pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78613 (WDM 78-31-11).

<1> If you find a problem with the wiring, do these steps:

 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is on pin 21 of connector D32017P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).

P320	S78006
D32017P	DS78006
Pin 21	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.

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- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

<1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.

<a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

 Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

<2> Re-connect the connector DS78003 on the left fan cowl switch, S78003.

<3> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.

<4> Do the Repair Confirmation procedure at the end of this task.

- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78006	S78005
DS78006	DS78005
Pin 8	Pin 6

<1> If you find a problem with the wiring, do these steps:

<a> Repair the wiring (WDM 78-31-11).

 Re-connect the connector DS78003 on the left fan cowl switch, S78003.

<c> Re-connect the connector DS78005 on the right fan cowl switch, S78005.

<d> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.

<e> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.

<f> Do the Repair Confirmation procedure at the end of this task.

- h) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-11).

S78005	S78005
DS78005	DS78005
Pin 6	Pin 8

<1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.

<a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

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- Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect the connector DS78003 on the left fan cowl switch, S78003.
- <3> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
- <4> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.
- <5> Do the Repair Confirmation procedure at the end of this task.
- i) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78004 DS78004 Pin 6	S78005 DS78005 Pin 8
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- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect the connector DS78004 on the left T/R cowl switch, S78004.
 - <d> Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - <e> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <f> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <g> Do the Repair Confirmation procedure at the end of this task.
- j) Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-11).

S78004 DS78004 Pin 6	S78004 DS78004 Pin 8
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- <1> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect the connector DS78003 on the left fan cowl switch, S78003.

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- <3> Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - <4> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <5> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <6> Do the Repair Confirmation procedure at the end of this task.
- k) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78003 for the left fan cowl switch, S78003 (WDM 78-31-11).

S78004	S78003
DS78004	DS78003
Pin 8	Pin 6

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect the connector DS78004 on the left T/R cowl switch, S78004.
 - <d> Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - <e> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <f> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <g> Do the Repair Confirmation procedure at the end of this task.
- (e) Do a check of the electrical power to the motor in the left engine, power pack, M78001 (WDM 78-31-11).
- 1) Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - 2) Re-connect the connector DS78004 on the left T/R cowl switch, S78004.
 - 3) Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - 4) Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - 5) Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.
 - 6) Disconnect the connector DM78001A on the left engine, power pack, M78001 (WDM 78-31-11).
 - 7) Push and hold the open button on the left fan cowl panel switch, S78003.
 - 8) Do a check for 115VAC on connector DM78001A pins 1, 2, and 3 (pin 4 gnd, pin 5 case gnd) on the power pack, M78001.
 - 9) If 115VAC is present, replace the left engine, power pack, M78001.
 - a) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - b) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.

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- c) Do the Repair Confirmation procedure at the end of this task.
- 10) If 115VAC is not present, do a check of the circuit between the left engine, power pack, M78001 and the L ENG COWL MTR relay, K78105.
- a) Remove the L ENG COWL MTR relay, K78105 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - b) Do a wiring check between the pins for connector DK78105 for the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 and the connector DM78001A on the left engine, power pack, M78001 (pin 4 ground) (WDM 78-31-11).

K78105	M78001
DK78105	DM78001A
Pin A1	Pin 1
Pin B1	Pin 2
Pin C1	Pin 3

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <c> Re-connect the connector DM78001A on the left engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- 11) Do a check of the electrical power circuit from the circuit breaker to the L ENG COWL MTR relay, K78105 (WDM 78-31-11).
- a) Re-connect the connector DM78001A on the left engine, power pack, M78001.
 - b) Do a check for 115VAC on connector DK78105 pins A2, B2 and C2 for the L ENG COWL MTR relay, K78105 (WDM 78-31-11).
 - c) If 115VAC is not on the pins for connector DK78105, do a wiring check between these pins of connector DK78105 for the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78301 (WDM 78-31-11):

K78105	C78301
DK78105	C78301
Pin A2	Pin A2
Pin B2	Pin B2
Pin C2	Pin C2

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <c> Do the Repair Confirmation procedure at the end of this task.
- <2> If you do not find a problem with the wiring, replace the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).

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<a> Do the Repair Confirmation procedure at the end of this task.

- (10) If the right side fan cowl panel did not open, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the right fan cowl panel switch, S78005:

- 1) Disconnect the connector DS78005 on the right fan cowl panel switch, S78005 (WDM 78-31-11).
- 2) Push and hold the open button on the right fan cowl panel switch, S78005.
 - a) Do the check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 6 (WDM 78-31-11).

S78005		S78005
DS78005		DS78005
Pin 6	.....	Pin 4
Pin 6	.....	Pin 5
Pin 6	.....	Pin 11
Pin 6	.....	Pin 12
Pin 6	.....	Pin 14
Pin 6	.....	Pin 15

- b) Do the check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 8 (WDM 78-31-11).

S78005		S78005
DS78005		DS78005
Pin 8	.....	Pin 4
Pin 8	.....	Pin 5
Pin 8	.....	Pin 11
Pin 8	.....	Pin 12
Pin 8	.....	Pin 14
Pin 8	.....	Pin 15

- c) Do the check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 7 and pin 9 (WDM 78-31-11).
- d) If there is no continuity through the switch, replace the right fan cowl panel switch, S78005.

<1> Do this task: Actuation and Control Switches Removal, AMM
TASK 71-12-06-000-801-H01.

<2> Do this task: Actuation and Control Switches Installation, AMM
TASK 71-12-06-400-801-H01.

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

- (b) Do a check of the control circuit between the right fan cowl panel switch, S78005 and the L ENG COWL MTR relay, K78105.

- 1) Re-connect the connector DS78005 on the right fan cowl panel switch, S78005 (WDM 78-31-11).
- 2) Remove the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.

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- 3) Do a check for ground on connector DK78105 pin X2.
 - a) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-11).
 - <2> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <3> Do the Repair Confirmation procedure at the end of this task.
- 4) Push and hold the open button on the right fan cowl panel switch, S78005.
- 5) Do a check for 28VDC on the L ENG COWL MTR relay, K78105 connector DK78105 pin X1.
- 6) If 28VDC is not on connector DK78105 pin X1, do these steps:
 - a) Disconnect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - b) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 11	Pin 14

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <a> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- <2> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- <3> Do the Repair Confirmation procedure at the end of this task.
- c) Do a wiring check between the right T/R cowl switch, S78006 and the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.

S78006	K78105
DS78006	DK78105
Pin 14	Pin X1

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - <c> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- d) Do a wiring check between the right T/R cowl switch, S78006 and the right fan cowl switch, S78005 (WDM 78-31-11).

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S78006 DS78006 Pin 11	S78005 DS78005 Pin 14
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- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-11).
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - <d> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check of the control circuit between the right fan cowl panel switch, S78005 and the solenoid valves in the left engine, power pack, M78001 (WDM 78-31-11).

NOTE: These steps do a check of the circuit to the right enable solenoid.

- 1) Do a check for 28VDC on connector DM78001B pin 1 on the left engine, power pack, M78001 (WDM 78-31-11).
 - a) Re-connect the connector DS78005 on the right fan cowl panel switch, S78005.
 - b) Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - c) Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - d) Disconnect the connector DM78001B on the left engine, power pack, M78001.
 - e) Push and hold the open button on the right fan cowl panel switch, S78005.
 - f) If 28VDC is not on connector DM78001B pin 3, do a wiring check between these pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

M78001 DM78001B Pin 3	S78006 DS78006 Pin 15
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- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <c> Re-connect the connector DM78001B on the left engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- g) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

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S78006 DS78006 Pin 12	S78006 DS78006 Pin 15
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- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect the connector DM78001B on the left engine, power pack, M78001.
- <3> Do the Repair Confirmation procedure at the end of this task.
- h) Do a wiring check between the right T/R cowl switch, S78006 and the right fan cowl switch, S78005 (WDM 78-31-11).

S78006 DS78006 Pin 12	S78005 DS78005 Pin 15
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- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-11).
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - <d> Re-connect the connector DM78001B on the left engine, power pack, M78001.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- (d) Do a check for electrical power to the right fan cowl panel switch, S78005 from the circuit breaker (WDM 78-31-11).
 - 1) Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - 2) Re-connect the connector DM78001B on the left engine, power pack, M78001.
 - 3) Disconnect the connector DS78005 on the right fan cowl panel switch, S78005 (WDM 78-31-11).
 - 4) Do a check for 28VDC on pin 6 of connector DS78005 for the right fan cowl panel switch, S78005 (Pin 13 ground) (WDM 78-31-11).
 - 5) If 28VDC is not on pin 6 of connector DS78005, do a check for electrical power from the circuit breaker (WDM 78-31-11).
 - a) Disconnect the connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect the connector D32017P on the Ground Service/Handling Power Panel, P320.
 - c) Do a check for 28VDC on pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320.

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- d) If 28VDC is not on pin 21 of connector D32017P, do a wiring check between pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78613 (WDM 78-31-11).
- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78005 on the right fan cowl panel switch, S78005.
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- e) If 28VDC is on pin 21 of connector D32017P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).

P320	S78006
D32017P	DS78006
Pin 21	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect the connector DS78005 on the right fan cowl switch, S78005.

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<3> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.

<4> Do the Repair Confirmation procedure at the end of this task.

- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78006 DS78006 Pin 8	S78005 DS78005 Pin 6
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<1> If you find a problem with the wiring, do these steps:

<a> Repair the wiring (WDM 78-31-11).

 Re-connect the connector DS78005 on the right fan cowl switch, S78005.

<c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.

<d> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.

<e> Do the Repair Confirmation procedure at the end of this task.

- h) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-11).

S78005 DS78005 Pin 6	S78005 DS78005 Pin 8
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<1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.

<a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

 Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

<2> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.

<3> Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.

<4> Do the Repair Confirmation procedure at the end of this task.

- (e) Do a check of the electrical power to the motor in the left engine, power pack, M78001 (WDM 78-31-11).

1) Re-connect the connector DS78005 on the right fan cowl panel switch, S78005.

2) Re-connect the connector DS78006 on the right T/R cowl switch, S78006.

3) Re-connect the connector D32017P on the Ground Service/Handling Power Panel, P320.

4) Disconnect the connector DM78001A on the left engine, power pack, M78001 (WDM 78-31-11).

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- 5) Push and hold the open button on the right fan cowl panel switch, S78005.
- 6) Do a check for 115VAC on connector DM78001A pins 1, 2, and 3 (pin 4 gnd, pin 5 case gnd) on the power pack, M78001.
- 7) If 115VAC is present, replace the left engine, power pack, M78001.
 - a) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - b) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - c) Do the Repair Confirmation procedure at the end of this task.
- 8) If 115VAC is not present, do a check of the circuit between the left engine, power pack, M78001 and the L ENG COWL MTR relay, K78105.
 - a) Remove the L ENG COWL MTR relay, K78105 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - b) Do a wiring check between the pins for connector DK78105 for the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 and the connector DM78001A on the left engine, power pack, M78001 (pin 4 ground) (WDM 78-31-11).

K78105	M78001
DK78105	DM78001A
Pin A1	Pin 1
Pin B1	Pin 2
Pin C1	Pin 3

<1> If you find a problem with the wiring, then do these steps:

- <a> Repair the wiring (WDM 78-31-11).
- Re-connect the connector DM78001A on the left engine, power pack, M78001.
- <c> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- <d> Do the Repair Confirmation procedure at the end of this task.

- 9) Do a check of the electrical power circuit from the circuit breaker to the L ENG COWL MTR relay, K78105 (WDM 78-31-11).
 - a) Re-connect the connector DM78001A on the left engine, power pack, M78001.
 - b) Remove the L ENG COWL MTR relay, K78105 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - c) Do a check for 115VAC on connector DK78105 pins A2, B2 and C2 for the L ENG COWL MTR relay, K78105 (WDM 78-31-11).
 - d) If 115VAC is not on the pins for connector DK78105, do a wiring check between these pins of connector DK78105 for the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78301 (WDM 78-31-11):

K78105	C78301
DK78205	C78301
Pin A2	Pin A2
Pin B2	Pin B2
Pin C2	Pin C2

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- <1> If you find a problem with the wiring, then do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <c> Do the Repair Confirmation procedure at the end of this task.
- <2> If you do not find a problem with the wiring, replace the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
- <a> Do the Repair Confirmation procedure at the end of this task.

G. Repair Confirmation

- (1) Remove the sling from the fan cowl panel.
 - (a) Refer to this task: Close the Fan Cowl Panel (Sling Method), AMM TASK 71-11-04-400-804-H01.
- (2) Do this task: Close the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-400-802-H01.
 - (a) Make sure the fan cowl panel closes smoothly.
- (3) Do this task: Open the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-000-802-H01.
 - (a) Make sure the fan cowl panel opens smoothly.
- (4) Do this task: Close the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-400-802-H01.
 - (a) Make sure the fan cowl panel closes smoothly.
- (5) Do this task: Forward Fairings Installation, AMM TASK 54-52-01-400-801-001.
- (6) Remove the engine strut shock absorbing lanyard personnel equipment, SPL-8818; do this task: Fall Arrest Lifeline Procedure, AMM TASK 54-52-00-910-804-001.

————— END OF TASK —————

806. Left Engine Fan Cowl Panel Does Not Close (Power Method)

A. Description

- (1) The left or right fan cowl panels on the left engine do not close with the power method.
 - (a) This procedure has these paragraphs:
 - 1) Initial evaluation.
 - 2) A visual check of the area around the PDOS installation, the tubes and flexhoses.
 - 3) Do a visual check on the PDOS hydraulic hose quick disconnect and make sure that the locking tang is fully engaged in the fitting groove (Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01, Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01).
 - 4) A check of the electrical control system for the left side and right side fan cowl panel which has these steps:
 - a) A check of continuity through the fan cowl panel switch.
 - b) A check of the control circuit between the fan cowl panel switch and the solenoid valves in the power pack.
 - c) A check for electrical power to the fan cowl panel switch from the circuit breaker.
 - 5) Repair confirmation.

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B. Possible Causes

- (1) Missing electrical ground, broken wires or bent pins in the electrical connectors or broken insulation on the wire bundles or the control switches.
- (2) An internal mechanical or electrical problem in the PDOS solenoid valves.
- (3) No airplane electrical power to the PDOS control switches.
- (4) No control signal from the control switches to the solenoid valves in the PDOS power pack.

C. Circuit Breakers

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

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	12	C78613	L ENG COWL DR MOT CTRL
F	6	C78301	L ENG COWL DR MOT

D. Related Data

- (1) When the left fan cowl close switch is selected the PDOS retract solenoid valve and the right enable solenoid valve are energized. The retract solenoid valve connects the left fan cowl actuator directly to the reservoir. The weight of the fan cowl causes the actuator to retract and the fan cowl to close. The rate at which the cowl retracts is controlled with the flow control valve in the actuator. The right fan cowl actuator does not retract because of the energized right enable solenoid valve.
- (2) When the right fan cowl close switch is selected the PDOS retract solenoid valve and the left enable solenoid valve are energized. The retract solenoid valve connects the right fan cowl actuator directly to the reservoir. The weight of the fan cowl causes the actuator to retract and the fan cowl to close. The rate at which the cowl retracts is controlled with the flow control valve in the actuator. The right fan cowl actuator does not retract because of the energized left enable solenoid valve.
- (3) The WDM gives the nomenclature for the left or right select solenoid valves as L or R T-R/FAN SV. The WDM nomenclature for the left or right enable solenoid valves as L or R ENBL SV. The WDM nomenclature for the retract solenoid is RETR SV.
- (4) The switch control unit has two switches and a printed circuit board with diodes. A problem with the diodes can cause incorrect operation of the PDOS unit. The switch control unit is interchangeable and can be used to open the fan cowl panel or the thrust reverser. Only some of the circuits through the switch control unit are used to operate the fan cowl panels.

E. Initial Evaluation

- (1) Use the control switch on the engine fan case to close the applicable fan cowl panel with the PDOS power pack.
 - (a) Do this task: Close the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-400-802-H01.
 - (b) If the fan cowl panel does not close with the control switch, continue with the procedure.

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F. Fault Isolation Procedure



USE THE FALL ARREST LIFELINE PROCEDURE IF YOU DO NOT USE OTHER SAFETY EQUIPMENT. IF YOU USE THE SAFETY EQUIPMENT OR PROCEDURES INCORRECTLY, IT CAN CAUSE INJURY OR KILL YOU.

- (1) Use the engine strut shock absorbing lanyard personnel equipment, SPL-8818 when you work on or above the engine (AMM TASK 54-52-00-910-804-001).
- (2) Do this task: Forward Fairings Removal, AMM TASK 54-52-01-000-801-001.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (3) Look at the PDOS power pack installation to the opening actuator for the fan cowl panel or the thrust reverser.
 - (a) If it is necessary, do a visual check on the PDOS hydraulic hose quick disconnect and make sure that the locking tang is fully engaged in the fitting groove (Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01, Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01).
 - 1) If the locking tang is not fully engaged in the fitting groove or becomes loose, re-connect the locking tang in the fitting groove.
 - (b) Look for broken wires or insulation on the wire bundles and the control switches on the engine inlet frame or electrical connectors that are disconnected.
 - 1) Repair all wire problems.
 - (c) Look for oil leakage that could have come from the hoses or tubes for the PDOS power pack to the opening actuator for the fan cowl panel or the thrust reverser.
 - 1) If there is oil leakage from the tubes, tighten the b-nuts on the tubes or hoses.
 - (d) Use a cotton wiper, G00034 and remove all the oil leakage on the engine.
- (4) If the left side fan cowl panel did not close, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the left fan cowl panel switch, S78003:
 - 1) Disconnect the connector DS78003 on the left fan cowl switch, S78003.
 - 2) Push and hold the open button on the left fan cowl panel switch, S78003.
 - a) Do a check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 6 (WDM 78-31-11).

S78003		S78003
DS78003		DS78003
Pin 6		Pin 1
Pin 6		Pin 2
Pin 6		Pin 3
Pin 6		Pin 4
Pin 6		Pin 10

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- b) Do a check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 8 (WDM 78-31-11).

S78003	S78003
DS78003	DS78003
Pin 8	Pin 1
Pin 8	Pin 2
Pin 8	Pin 3
Pin 8	Pin 4
Pin 8	Pin 10

- c) Do the check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 7 and pin 9 (WDM 78-31-11).
- d) If there is no continuity through the switch, replace the left fan cowl panel switch, S78003.
- <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- e) Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the left fan cowl panel switch, S78003 and the solenoid valves in the left engine, power pack, M78001 (WDM 78-31-11).

NOTE: These steps do a check of the circuit to the right enable solenoid and the retract solenoid.

- 1) Do a check for 28VDC on connector DM78001B pins 3 and 5 on the left engine, power pack, M78001.
- a) Re-connect connector DS78003 on the left fan cowl switch, S78003.
- b) Disconnect connector DM78001B on the left engine, power pack, M78001 (WDM 78-31-11).
- c) Push and hold the close button on the left fan cowl switch, S78003.
- d) If 28VDC is on connector DM78001B pin 3 and 5, replace the left engine, power pack, M78001.
- <1> Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
- <2> Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
- <3> Do the Repair Confirmation procedure at the end of this task.
- e) If 28VDC is not on connector DM78001B pin 3 and 5, do these steps:
- <1> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

M78001	S78006
DM78001B	DS78006
Pin 5	Pin 3
Pin 3	Pin 15

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- <a> If you find a problem with the wiring, then do these steps:
- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - III. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.

- <2> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 5	Pin 7

- <a> If you find a problem with the wiring, then do these steps:
- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - III. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.

- <3> Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 3	Pin 2
Pin 15	Pin 5
Pin 7	Pin 9

- <a> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

- Re-connect connector DM78001B on the left engine, power pack, M78001.

- <c> Do the Repair Confirmation procedure at the end of this task.

- <4> Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

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S78006 DS78006 Pin 2 Pin 3 Pin 9 Pin 7	S78005 DS78005 Pin 3 Pin 7
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- <a> If you find a problem with the wiring, do these steps:
- Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - Re-connect connector DM78001B on the left engine, power pack, M78001.
 - Do the Repair Confirmation procedure at the end of this task.

- <5> Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-11).

S78005 DS78005 Pin 3 Pin 2	S78005 DS78005 Pin 2
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- <a> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
- Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <c> Re-connect connector DM78001B on the left engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.

- <6> Do a wiring check between the pins of the connector DS78005 for the right fan cowl switch, S78005 and connector DS78004 for the left T/R cowl switch, S78004 (WDM 78-31-11).

S78005 DS78005 Pin 2 Pin 3	S78006 DS78006 Pin 3
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- <a> If you find a problem with the wiring, do these steps:
- Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78005 on the right fan cowl switch, S78005.

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- III. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - IV. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - V. Do the Repair Confirmation procedure at the end of this task.
- <7> Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-11).

S78004	S78004
DS78004	DS78004
Pin 3	Pin 2
Pin 1	Pin 10

- <a> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78005 on the right fan cowl switch, S78005.
- <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <d> Re-connect connector DM78001B on the left engine, power pack, M78001.
- <e> Do the Repair Confirmation procedure at the end of this task.
- <8> Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78003 for the left fan cowl switch, S78003 (WDM 78-31-11).

S78004	S78003
DS78004	DS78003
Pin 10	Pin 1
Pin 2	Pin 3

- <a> If you find a problem with the wiring, do these steps:
- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - III. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - IV. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - V. Re-connect connector DS78006 on the right T/R cowl switch, S78006.

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- VI. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - VII. Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check for electrical power to the left fan cowl panel switch, S78003 from the circuit breaker (WDM 78-31-11).
- 1) Disconnect connector DS78003 on the left fan cowl panel switch, S78003 (WDM 78-31-11).
 - 2) Do a check for 28VDC on pin 6 of connector DS78003 for the left fan cowl panel switch, S78003 (Pin 13 ground) (WDM 78-31-11).
 - 3) If 28VDC is not on pin 6 of connector DS78003, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect connector D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - c) Do a check for 28VDC on pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320.
 - d) If 28VDC is not on pin 21 of connector D32017P, do a wiring check between pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78613 (WDM 78-31-11).
 - <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is on pin 21 of connector D32017P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).

P320	S78006
D32017P	DS78006
Pin 21	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.

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- <d> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
- <e> Do the Repair Confirmation procedure at the end of this task.
- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect connector DS78003 on the left fan cowl switch, S78003.
- <3> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
- <4> Do the Repair Confirmation procedure at the end of this task.
- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78006	S78005
DS78006	DS78005
Pin 8	Pin 6

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <d> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <e> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
- h) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-11).

S78005	S78005
DS78005	DS78005
Pin 6	Pin 8

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- <1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - <3> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <4> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <5> Do the Repair Confirmation procedure at the end of this task.
- i) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78004	S78005
DS78004	DS78005
Pin 6	Pin 8

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <d> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <e> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <f> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <g> Do the Repair Confirmation procedure at the end of this task.
- j) Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-11).

S78004	S78004
DS78004	DS78004
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect connector DS78003 on the left fan cowl switch, S78003.

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- <3> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <4> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <5> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <6> Do the Repair Confirmation procedure at the end of this task.
- k) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78003 for the left fan cowl switch, S78003 (WDM 78-31-11).

S78004	S78003
DS78004	DS78003
Pin 8	Pin 6

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <d> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <e> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <f> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <g> Do the Repair Confirmation procedure at the end of this task.
- (5) If the right side fan cowl panel did not close, do a check of the electrical control system.
- NOTE:** The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.
- (a) Do a check of the right fan cowl panel switch, S78005:
- 1) Disconnect connector DS78005 on the right fan cowl switch, S78005.
 - 2) Push and hold the open button on the right fan cowl panel switch, S78005.
 - a) Do a check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 6 (WDM 78-31-11).

S78005	S78005
DS78005	DS78005
Pin 6	Pin 1
Pin 6	Pin 2
Pin 6	Pin 3
Pin 6	Pin 4
Pin 6	Pin 10

- b) Do a check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 8 (WDM 78-31-11).

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S78005	S78005
DS78005	DS78005
Pin 8	Pin 1
Pin 8	Pin 2
Pin 8	Pin 3
Pin 8	Pin 4
Pin 8	Pin 10

- c) Do the check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 7 and pin 9 (WDM 78-31-11).
- d) If there is no continuity through the switch, replace the right fan cowl panel switch, S78005.
 - <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- e) Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the right fan cowl panel switch, S78005 and the solenoid valves in the left engine, power pack, M78001 (WDM 78-31-11).

NOTE: These steps do a check of the circuits to the left enable solenoid and the retract solenoid.

- 1) Do a check for 28VDC on connector DM78001B pins 1 and 5 on the left engine, power pack, M78001.
 - a) Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - b) Disconnect connector DM78001B on the left engine, power pack, M78001 (WDM 78-31-11).
 - c) Push and hold the close button on the right fan cowl switch, S78005.
 - d) If 28VDC is on connector DM78001B pin 1 and 5, replace the left engine, power pack, M78001.

<1> Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.

<2> Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.

<3> Do the Repair Confirmation procedure at the end of this task.

- e) If 28VDC is not on connector DM78001B pin 5, do these steps:

NOTE: These steps do a check of the separate circuit to the retract solenoid.

- <1> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

M78001	S78006
DM78001B	DS78006
Pin 5	Pin 3

<a> If you find a problem with the wiring, then do these steps:

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- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - III. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.
- <2> Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 3	Pin 2

- <a> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DM78001B on the left engine, power pack, M78001.
- <c> Do the Repair Confirmation procedure at the end of this task.
- <3> Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78006	S78005
DS78006	DS78005
Pin 2	Pin 3

- <a> If you find a problem with the wiring, do these steps:
- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - III. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - IV. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - V. Do the Repair Confirmation procedure at the end of this task.
- f) If 28VDC is not on connector DM78001B pin 1, do these steps:
- NOTE: These steps do a check of the separate circuit to the left enable solenoid.

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- <1> Do a wiring check between the pins for connector DS78004 for the left T/R cowl switch, S78004 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

M78001	S78004
DM78001B	DS78004
Pin 1	Pin 15

- <a> If you find a problem with the wiring, then do these steps:
- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - III. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.

- <2> Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-11).

S78004	S78004
DS78004	DS78004
Pin 7	Pin 9
Pin 15	Pin 5

- <a> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

- Re-connect connector DM78001B on the left engine, power pack, M78001.

- <c> Do the Repair Confirmation procedure at the end of this task.

- <3> Do a wiring check between the pins for connector DS78004 for the left T/R cowl switch, S78004 (WDM 78-31-11).

S78004	S78004
DS78004	DS78004
Pin 5	Pin 7

- <a> If you find a problem with the wiring, then do these steps:
- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - III. Re-connect connector DM78001B on the left engine, power pack, M78001.

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IV. Do the Repair Confirmation procedure at the end of this task.

<4> Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78003 for the left fan cowl switch, S78003 (WDM 78-31-11).

S78004	S78003
DS78004	DS78003
Pin 9	Pin 7

<a> If you find a problem with the wiring, do these steps:

- I. Repair the wiring (WDM 78-31-11).
- II. Re-connect connector DS78003 on the left fan cowl switch, S78003.
- III. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- IV. Re-connect connector DM78001B on the left engine, power pack, M78001.
- V. Do the Repair Confirmation procedure at the end of this task.

<5> Do a check for continuity through the left fan cowl switch, S78003 between these pins for connector DS78003 (WDM 78-31-11).

S78003	S78003
DS78003	DS78003
Pin 7	Pin 9

<a> If there is no continuity through the switch, replace the left fan cowl switch, S78003.

- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

 Re-connect connector DS78004 on the left T/R cowl switch, S78004.

<c> Re-connect connector DM78001B on the left engine, power pack, M78001.

<d> Do the Repair Confirmation procedure at the end of this task.

<6> Do a wiring check between the pins of the connector DS78003 for the left fan cowl switch, S78003 and connector DS78006 for the right T/R cowl switch, S78006 (WDM 78-31-11).

S78003	S78006
DS78003	DS78006
Pin 9	Pin 1

<a> If you find a problem with the wiring, do these steps:

- I. Repair the wiring (WDM 78-31-11).

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- II. Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - III. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - IV. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - V. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - VI. Do the Repair Confirmation procedure at the end of this task.
- <7> Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006 DS78006 Pin 1 Pin 11	S78006 DS78006 Pin 11
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- <a> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78003 on the left fan cowl switch, S78003.
- <c> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <d> Re-connect connector DM78001B on the left engine, power pack, M78001.
- <e> Do the Repair Confirmation procedure at the end of this task.
- <8> Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78006 DS78006 Pin 11 Pin 1	S78005 DS78005 Pin 1
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- <a> If you find a problem with the wiring, do these steps:
- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - III. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - IV. Re-connect connector DS78005 on the right fan cowl switch, S78005.

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- V. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - VI. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - VII. Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check for electrical power to the right fan cowl panel switch, S78005 from the circuit breaker (WDM 78-31-11).
- 1) Disconnect connector DS78005 on the right fan cowl panel switch, S78005 (WDM 78-31-11).
 - 2) Do a check for 28VDC on pin 6 of connector DS78005 for the right fan cowl panel switch, S78005 (Pin 13 ground) (WDM 78-31-11).
 - 3) If 28VDC is not on pin 6 of connector DS78005, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect connector D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - c) Do a check for 28VDC on pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320.
 - d) If 28VDC is not on pin 21 of connector D32017P, do a wiring check between pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78613 (WDM 78-31-11).
- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78005 on the right T/R cowl switch, S78005.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- e) If 28VDC is on pin 21 of connector D32017P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).

P320	S78006
D32017P	DS78006
Pin 21	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78005 on the right T/R cowl switch, S78005.

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- <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect connector DS78005 on the right T/R cowl switch, S78005.
 - <3> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <4> Do the Repair Confirmation procedure at the end of this task.
- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78006	S78005
DS78006	DS78005
Pin 8	Pin 6

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.

G. Repair Confirmation

- (1) Do this task: Close the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-400-802-H01.
 - (a) Make sure the fan cowl panel closes smoothly.
- (2) Do this task: Open the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-000-802-H01.
 - (a) Make sure the fan cowl panel opens smoothly.
- (3) Do this task: Close the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-400-802-H01.

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- (a) Make sure the fan cowl panel closes smoothly.
- (4) Do this task: Forward Fairings Installation, AMM TASK 54-52-01-400-801-001.
- (5) Remove the engine strut shock absorbing lanyard personnel equipment, SPL-8818; do this task: Fall Arrest Lifeline Procedure, AMM TASK 54-52-00-910-804-001.

———— **END OF TASK** ————

807. Right Engine Fan Cowl Panel Does Not Open (Power Method)

A. Description

- (1) The left or right fan cowl panels on the right engine do not open with the power method.
 - (a) This procedure has these paragraphs:
 - 1) Initial evaluation
 - 2) A check of the oil quantity in the oil tank reservoir of the PDOS power pack.
 - 3) A visual check of the area around the PDOS installation, the tubes and flexhoses.
 - 4) A check for oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack.
 - 5) A check of the hydraulic cowl opening flexhoses for leakage.
 - 6) A check for oil leakage from the fan cowl panel opening actuator.
 - 7) A check of the electrical control system for the left side and right side fan cowl panel which has these steps:
 - a) A check of continuity through the fan cowl panel switch.
 - b) A check of the control circuit between the fan cowl panel switch and the COWL MTR relay
 - c) A check of the control circuit between the fan cowl panel switch and the solenoid valves in the power pack
 - d) A check for electrical power to the fan cowl panel switch from the circuit breaker.
 - e) A check of the electrical power to the motor in the power pack.
 - 8) Repair confirmation

B. Possible Causes

- (1) Oil leakage from the quick disconnects, hoses or tubes.
- (2) Oil leakage from the opening actuator rod end seals or inlet port.
- (3) Oil leakage from the PDOS power pack solenoid valves, ports or oil tank.
- (4) Missing electrical ground, broken wires or bent pins in the electrical connectors or broken insulation on the wire bundles or the control switches.
- (5) A circuit problem or a cowl door motor relay problem.
- (6) An internal mechanical or electrical problem in the PDOS power pack motor or solenoid valves.
- (7) No airplane electrical power to the PDOS power pack.
- (8) No control signal from the control switches to the solenoid valves in the PDOS power pack.
- (9) The oil tank on the PDOS power pack is not serviced.

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C. Circuit Breakers

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

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C78614	R ENG COWL DOOR MOTOR CONTROL
F	9	C78302	R ENG COWL DR MOT

D. Related Data

- (1) When the left fan cowl open switch is selected the PDOS left enable solenoid valve and the motor are energized. The motor turns the pump driveshaft to operate the three pump piston assemblies. Low pressure fluid, from the reservoir, goes through the inlet and the outlet check valves of the pump piston assemblies. This supplies high pressure to the left fan cowl actuator connection. Pressure supply to the actuators is controlled by a system relief valve between the pump outlet and the reservoir.
- (2) When the right fan cowl open switch is selected the PDOS right enable solenoid valve and the motor are energized. The motor turns the pump driveshaft to operate the three pump piston assemblies. Low pressure fluid, from the reservoir, goes through the inlet and the outlet check valves of the pump piston assemblies. This supplies high pressure to the right fan cowl actuator connection. Pressure supply to the actuators is controlled by a system relief valve between the pump outlet and the reservoir.
- (3) The WDM gives the nomenclature for the left or right select solenoid valves as L or R T-R/FAN SV. The WDM nomenclature for the left or right enable solenoid valves as L or R ENBL SV. The WDM nomenclature for the retract solenoid is RETR SV.
- (4) The switch control unit has two switches and a printed circuit board with diodes. A problem with the diodes can cause incorrect operation of the PDOS unit. The switch control unit is interchangeable and can be used to open the fan cowl panel or the thrust reverser. Only some of the circuits through the switch control unit are used to operate the fan cowl panels.

E. Initial Evaluation

- (1) Use the control switch on the engine inlet to open the applicable fan cowl panel with the PDOS power pack.
 - (a) Do this task: Open the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-000-802-H01.
 - (b) If the fan cowl panel does not open with the control switch, continue with the procedure.

F. Fault Isolation Procedure



USE THE FALL ARREST LIFELINE PROCEDURE IF YOU DO NOT USE OTHER SAFETY EQUIPMENT. IF YOU USE THE SAFETY EQUIPMENT OR PROCEDURES INCORRECTLY, IT CAN CAUSE INJURY OR KILL YOU.

- (1) Use the engine strut shock absorbing lanyard personnel equipment, SPL-8818 when you work on or above the engine (AMM TASK 54-52-00-910-804-001).
- (2) Do this task: Forward Fairings Removal, AMM TASK 54-52-01-000-801-001.
- (3) Do a check of the oil quantity in the oil tank reservoir of the PDOS power pack.

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DO NOT LET PDOS OIL LEAKAGE COLLECT. IF YOU DO NOT CLEAN THE AREA, DAMAGE CAN OCCUR FROM THE PDOS OIL.



IF YOU MUST ADD PDOS OIL TO THE PDOS PUMP, MAKE SURE THE FAN COWL PANELS AND THRUST REVERSERS ARE COMPLETELY CLOSED OR AN OVERFILL CONDITION COULD OCCUR.

- (a) If it is necessary, do this task: Fill the PDOS Pump with Oil, AMM TASK 12-12-02-610-803-004.
- (b) Do the Repair Confirmation procedure at the end of this task.



DO NOT LET PDOS OIL LEAKAGE COLLECT. IF YOU DO NOT CLEAN THE AREA, DAMAGE CAN OCCUR FROM THE PDOS OIL.

- (4) Look for oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack.
 - (a) If there is oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack, replace the PDOS power pack.
 - 1) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - 2) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - (b) If there is oil leakage from the tubes, tighten the b-nuts on the tubes.
 - (c) Do the Repair Confirmation procedure at the end of this task.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (5) Examine the area under the engine, fan cowl panels and thrust reverser for oil leakage.
 - (a) Look for oil leakage that could have come from the hoses or tubes for the PDOS power pack to the opening actuator for the fan cowl panel or the thrust reverser.
 - (b) Look for oil leakage that could have come from the opening actuator rod end or inlet port.
- (6) Do this task: Open the Fan Cowl Panel (Sling Method), AMM TASK 71-11-04-000-804-H01.
 - (a) As you open the fan cowl panel, look for these conditions.
 - 1) Look for oil leakage from the hoses or tubes.
 - a) If there is oil leakage from the tubes, tighten the b-nuts on the tubes or hoses.
 - 2) Look for oil leakage from the opening actuator rod end or inlet port.
 - 3) Look for broken wires or insulation on the wire bundles and the control switches.
 - a) Repair all wire problems.
 - 4) Look for a problem with the actuator attachment fitting on the engine fan case.
 - a) Replace all broken fittings.

NOTE: Use the suppliers component repair procedures.

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- 5) Look for a problem with the actuator attachment fitting on the fan cowl panel.
 - a) Replace all broken fittings.

NOTE: Use the suppliers component repair procedures.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (7) Examine the hydraulic cowl opening flexhoses for leakage.
 - (a) Do this task: Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01.
 - (b) If the cowl opening flexhose is damaged, replace the flexhose.
 - 1) Do this task: Hydraulic Cowl Opening Flexhoses Removal, AMM TASK 71-12-03-000-801-H01.
 - 2) Do this task: Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01.
 - 3) If there is oil leakage from the hose, tighten the b-nuts on the hose.
 - (c) Do the Repair Confirmation procedure at the end of this task.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (8) If there is oil leakage from the fan cowl panel opening actuator rod end or inlet port or the actuator is damaged, replace the fan cowl panel opening actuator.
 - (a) Do this task: Fan Cowl Opening Actuators Removal, AMM TASK 71-12-01-000-801-H01.
 - (b) Do this task: Fan Cowl Opening Actuators Installation, AMM TASK 71-12-01-400-801-H01.
 - (c) Use a cotton wiper, G00034 and remove all the oil leakage on the engine.
 - (d) Do the Repair Confirmation procedure at the end of this task.
- (9) If the left side fan cowl panel did not open, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

 - (a) Do a check of the left fan cowl panel switch, S78003:
 - 1) Disconnect the connector DS78003 on the left fan cowl panel switch, S78003 (WDM 78-31-12).
 - 2) Push and hold the open button on the left fan cowl panel switch, S78003.
 - a) Do the check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 6 (WDM 78-31-12).

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S78003	S78003
DS78003	DS78003
Pin 6	Pin 4
Pin 6	Pin 5
Pin 6	Pin 11
Pin 6	Pin 12
Pin 6	Pin 14
Pin 6	Pin 15

- b) Do the check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 8 (WDM 78-31-12).

S78003	S78003
DS78003	DS78003
Pin 8	Pin 4
Pin 8	Pin 5
Pin 8	Pin 11
Pin 8	Pin 12
Pin 8	Pin 14
Pin 8	Pin 15

- c) Do the check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 7 and pin 9 (WDM 78-31-12).
- d) If there is no continuity through the switch, replace the left fan cowl panel switch, S78003.
- <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- e) Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the left fan cowl panel switch, S78003 and the R ENG COWL MTR relay, K78205.
- 1) Re-connect the connector DS78003 on the left fan cowl panel switch, S78003 (WDM 78-31-12).
 - 2) Remove the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - 3) Do a check for ground on connector DK78205 pin X2.
 - a) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-12).
 - <2> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <3> Do the Repair Confirmation procedure at the end of this task.
 - 4) Push and hold the open button on the left fan cowl panel switch, S78003.
 - 5) Do a check for 28VDC on the R ENG COWL MTR relay, K78205 connector DK78205 pin X1.

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- 6) If 28VDC is not on connector DK78205 pin X1, do these steps:
- a) Disconnect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - b) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 11	Pin 14
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
- <3> Do the Repair Confirmation procedure at the end of this task.
- c) Do a wiring check between the right T/R cowl switch, S78006 and the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.

S78006	K78205
DS78006	DK78205
Pin 14	Pin X1

- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-12).
- Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
- <c> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
- <d> Do the Repair Confirmation procedure at the end of this task.
- d) Do a check for continuity through the right fan cowl panel switch, S78005 between these pins for connector DS78005 (WDM 78-31-12).

S78005	S78005
DS78005	DS78005
Pin 11	Pin 14
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right fan cowl panel switch, S78005.
- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

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- Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
- <3> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
- <4> Do the Repair Confirmation procedure at the end of this task.
- e) Do a wiring check between the right T/R cowl switch, S78006 and the right fan cowl switch, S78005 (WDM 78-31-12).

S78006 DS78006 Pin 11	S78005 DS78005 Pin 14
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- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <d> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- f) Do a wiring check between the left T/R cowl switch, S78004 and the right fan cowl switch, S78005 (WDM 78-31-12).

S78004 DS78004 Pin 11	S78005 DS78005 Pin 14
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- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).
 - <c> Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).
 - <d> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <e> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
- g) Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-12).

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S78004	S78004
DS78004	DS78004
Pin 11	Pin 14
Pin 6	Pin 8
Pin 12	Pin 15

- <1> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).
 - <3> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <4> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <5> Do the Repair Confirmation procedure at the end of this task.
- h) Do a wiring check between the left T/R cowl switch, S78004 and the left fan cowl switch, S78003 (WDM 78-31-12).

S78004	S78003
DS78004	DS78003
Pin 11	Pin 14

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78003 on the left fan cowl panel switch, S78003 (WDM 78-31-12).
 - <c> Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).
 - <d> Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).
 - <e> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <f> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <g> Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check of the control circuit between the left fan cowl panel switch, S78003 and the solenoid valves in the right engine, power pack, M78001 (WDM 78-31-12).

NOTE: These steps do a check of the circuit to the left enable solenoid.

- 1) Do a check for 28VDC on connector DM78001B pin 1 on the right engine, power pack, M78001.
 - a) Re-connect the connector DS78003 on the left fan cowl panel switch, S78003.

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- b) Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).
- c) Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).
- d) Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
- e) Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
- f) Disconnect the connector DM78001B on the right engine, power pack, M78001 (WDM 78-31-12).
- g) Push and hold the open button on the left fan cowl panel switch, S78003.
- h) If 28VDC is not on connector DM78001B pin 1, do a wiring check between these pins for connector DS78004 for the left T/R cowl switch, S78004 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

M78001	S78004
DM78001B	DS78004
Pin 1	Pin 15

<1> If you find a problem with the wiring, then do these steps:

- <a> Repair the wiring (WDM 78-31-12).
- Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).
- <c> Re-connect the connector DM78001B on the right engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.

- i) Do a wiring check between the left T/R cowl switch, S78004 and the left fan cowl switch, S78003 (WDM 78-31-12).

S78004	S78003
DS78004	DS78003
Pin 12	Pin 15

<1> If you find a problem with the wiring, do these steps:

- <a> Repair the wiring (WDM 78-31-12).
- Re-connect connector DS78003 on the left fan cowl switch, S78003.
- <c> Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).
- <d> Re-connect the connector DM78001B on the right engine, power pack, M78001.
- <e> Do the Repair Confirmation procedure at the end of this task.

- j) Do a check for continuity through the left fan cowl panel switch, S78003 between these pins for connector DS78003 (WDM 78-31-12).

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S78003 DS78003 Pin 6	S78003 DS78003 Pin 15
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- <1> If there is no continuity through the switch, replace the left fan cowl switch, S78003.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).
 - <3> Re-connect the connector DM78001B on the right engine, power pack, M78001.
 - <4> Do the Repair Confirmation procedure at the end of this task.
- (d) Do a check for electrical power to the left fan cowl panel switch, S78003 from the circuit breaker (WDM 78-31-12).
- 1) Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).
 - 2) Re-connect the connector DM78001B on the right engine, power pack, M78001.
 - 3) Disconnect the connector DS78003 on the left fan cowl panel switch, S78003 (WDM 78-31-12).
 - 4) Do a check for 28VDC on pin 6 of connector DS78003 for the left fan cowl panel switch, S78003 (Pin 13 ground) (WDM 78-31-12).
 - 5) If 28VDC is not on pin 6 of connector DS78003, do a check for electrical power from the circuit breaker.
 - a) Disconnect the connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect the connector D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - c) Do a check for 28VDC on pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320.
 - d) If 28VDC is not on pin 9 of connector D32011P, do a wiring check between pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78614 (WDM 78-31-12).
- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.

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- e) If 28VDC is on pin 9 of connector D32011P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).

P320	S78006
D32011P	DS78006
Pin 9	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.

- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect the connector DS78003 on the left fan cowl switch, S78003.
- <3> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
- <4> Do the Repair Confirmation procedure at the end of this task.

- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78006	S78005
DS78006	DS78005
Pin 8	Pin 6

- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78003 on the left fan cowl switch, S78003.

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- <c> Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - <d> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <e> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
- h) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-12).

S78005 DS78005 Pin 6	S78005 DS78005 Pin 8
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- <1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - <3> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <4> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <5> Do the Repair Confirmation procedure at the end of this task.
- i) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78004 DS78004 Pin 6	S78005 DS78005 Pin 8
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- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect the connector DS78004 on the left T/R cowl switch, S78004.
 - <d> Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - <e> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.

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- <f> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
- <g> Do the Repair Confirmation procedure at the end of this task.

- j) Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-12).

S78004	S78004
DS78004	DS78004
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - <3> Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - <4> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <5> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <6> Do the Repair Confirmation procedure at the end of this task.
- k) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78003 for the left fan cowl switch, S78003 (WDM 78-31-12).

S78004	S78003
DS78004	DS78003
Pin 8	Pin 6

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect the connector DS78004 on the left T/R cowl switch, S78004.
 - <d> Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - <e> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <f> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <g> Do the Repair Confirmation procedure at the end of this task.

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- (e) Do a check of the electrical power to the motor in the right engine, power pack, M78001 (WDM 78-31-12).
- 1) Re-connect the connector DS78003 on the left fan cowl switch, S78003.
 - 2) Re-connect the connector DS78004 on the left T/R cowl switch, S78004.
 - 3) Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - 4) Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - 5) Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - 6) Disconnect the connector DM78001A on the right engine, power pack, M78001 (WDM 78-31-12).
 - 7) Do a check for 115VAC on connector DM78001A pins 1, 2, and 3 (pin 4 gnd, pin 5 case gnd) on the right engine, power pack, M78001.
 - 8) If 115VAC is present, replace the right engine, power pack, M78001.
 - a) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - b) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - c) Do the Repair Confirmation procedure at the end of this task.
 - 9) If 115VAC is not present, do a check of the circuit between the right engine, power pack, M78001 and the R ENG COWL MTR relay, K78205.
 - a) Remove the R ENG COWL MTR relay, K78205 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - b) Do a wiring check between the pins for connector DK78205 for the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 and the connector DM78001A on the right engine, power pack, M78001 (pin 4 ground) (WDM 78-31-12).
- | K78205 | M78001 |
|------------------|-----------------|
| DK78205 | DM78001A |
| Pin A1 | Pin 1 |
| Pin B1 | Pin 2 |
| Pin C1 | Pin 3 |
- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <c> Re-connect the connector DM78001A on the right engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- 10) Do a check of the electrical power circuit from the circuit breaker to the R ENG COWL MTR relay, K78205 (WDM 78-31-12).
 - a) Re-connect the connector DM78001A on the right engine, power pack, M78001.
 - b) Do a check for 115VAC on connector DK78205 pins A2, B2 and C2 for the R ENG COWL MTR relay, K78205 (WDM 78-31-12).

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- c) If 115VAC is not on the pins for connector DK78205, do a wiring check between these pins of connector DK78205 for the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78302 (WDM 78-31-12):

K78205	C78302
DK78205	C78302
Pin A2	Pin A2
Pin B2	Pin B2
Pin C2	Pin C2

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <c> Do the Repair Confirmation procedure at the end of this task.
- <2> If you do not find a problem with the wiring, replace the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
- <a> Do the Repair Confirmation procedure at the end of this task.

- (10) If the right side fan cowl panel did not open, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the right fan cowl panel switch, S78005:
- 1) Disconnect the connector DS78005 on the right fan cowl panel switch, S78005 (WDM 78-31-12).
 - 2) Push and hold the open button on the right fan cowl panel switch, S78005.
 - a) Do the check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 6 (WDM 78-31-12).

S78005	S78005
DS78005	DS78005
Pin 6	Pin 4
Pin 6	Pin 5
Pin 6	Pin 11
Pin 6	Pin 12
Pin 6	Pin 14
Pin 6	Pin 15

- b) Do the check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 8 (WDM 78-31-12).

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S78005	S78005
DS78005	DS78005
Pin 8	Pin 4
Pin 8	Pin 5
Pin 8	Pin 11
Pin 8	Pin 12
Pin 8	Pin 14
Pin 8	Pin 15

- c) Do the check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 7 and pin 9 (WDM 78-31-12).
 - d) If there is no continuity through the switch, replace the right fan cowl panel switch, S78005.
 - <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - e) Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the right fan cowl panel switch, S78005 and the R ENG COWL MTR relay, K78205.
- 1) Re-connect the connector DS78005 on the right fan cowl panel switch, S78005 (WDM 78-31-12).
 - 2) Remove the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - 3) Do a check for ground on connector DK78205 pin X2.
 - a) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-12).
 - <2> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <3> Do the Repair Confirmation procedure at the end of this task.
 - 4) Push and hold the open button on the right fan cowl panel switch, S78005.
 - 5) Do a check for 28VDC on the R ENG COWL MTR relay, K78205 connector DK78205 pin X1.
 - 6) If 28VDC is not on connector DK78205 pin X1, do these steps:
 - a) Disconnect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - b) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 11	Pin 14

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.

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- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
- <3> Do the Repair Confirmation procedure at the end of this task.
- c) Do a wiring check between the right T/R cowl switch, S78006 and the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.

S78006	K78205
DS78006	DK78205
Pin 14	Pin X1

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <c> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- d) Do a wiring check between the right T/R cowl switch, S78006 and the right fan cowl switch, S78005 (WDM 78-31-12).

S78006	S78005
DS78006	DS78005
Pin 11	Pin 14

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <d> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check of the control circuit between the right fan cowl panel switch, S78005 and the solenoid valves in the right engine, power pack, M78001 (WDM 78-31-12).

NOTE: These steps do a check of the circuit to the right enable solenoid.

- 1) Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).
- 2) Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).

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- 3) Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
- 4) Do a check for 28VDC on connector DM78001B pin 1 on the right engine, power pack, M78001 (WDM 78-31-12).
 - a) Disconnect the connector DM78001B on the right engine, power pack, M78001.
 - b) Push and hold the open button on the right fan cowl panel switch, S78005.
 - c) If 28VDC is not on connector DM78001B pin 3, do a wiring check between these pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

M78001	S78006
DM78001B	DS78006
Pin 3	Pin 15

<1> If you find a problem with the wiring, then do these steps:

- <a> Repair the wiring (WDM 78-31-12).
- Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
- <c> Re-connect the connector DM78001B on the right engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.

- d) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 12	Pin 15

<1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.

- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

<2> Re-connect the connector DM78001B on the right engine, power pack, M78001.

<3> Do the Repair Confirmation procedure at the end of this task.

- e) Do a wiring check between the right T/R cowl switch, S78006 and the right fan cowl switch, S78005 (WDM 78-31-12).

S78006	S78005
DS78006	DS78005
Pin 12	Pin 15

<1> If you find a problem with the wiring, do these steps:

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- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <d> Re-connect the connector DM78001B on the right engine, power pack, M78001.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- (d) Do a check for electrical power to the right fan cowl panel switch, S78005 from the circuit breaker (WDM 78-31-12).
- 1) Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - 2) Re-connect the connector DM78001B on the right engine, power pack, M78001.
 - 3) Disconnect the connector DS78005 on the right fan cowl panel switch, S78005 (WDM 78-31-12).
 - 4) Do a check for 28VDC on pin 6 of connector DS78005 for the right fan cowl panel switch, S78005 (Pin 13 ground) (WDM 78-31-12).
 - 5) If 28VDC is not on pin 6 of connector DS78005, do a check for electrical power from the circuit breaker (WDM 78-31-12).
 - a) Disconnect the connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - c) Do a check for 28VDC on pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320.
 - d) If 28VDC is not on pin 9 of connector D32011P, do a wiring check between pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78614 (WDM 78-31-12).
 - <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78005 on the right fan cowl panel switch, S78005.
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- e) If 28VDC is on pin 9 of connector D32011P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).

P320**D32011P**

Pin 9

S78006**DS78006**

Pin 6

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- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect the connector DS78005 on the right fan cowl switch, S78005.
- <3> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
- <4> Do the Repair Confirmation procedure at the end of this task.
- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78006	S78005
DS78006	DS78005
Pin 8	Pin 6

- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78005 on the right fan cowl switch, S78005.
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- h) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-12).

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S78005 DS78005 Pin 6	S78005 DS78005 Pin 8
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- <1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
- <3> Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
- <4> Do the Repair Confirmation procedure at the end of this task.
- (e) Do a check of the electrical power to the motor in the right engine, power pack, M78001 (WDM 78-31-12).
 - 1) Re-connect the connector DS78005 on the right fan cowl panel switch, S78005.
 - 2) Re-connect the connector DS78006 on the right T/R cowl switch, S78006.
 - 3) Re-connect the connector D32011P on the Ground Service/Handling Power Panel, P320.
 - 4) Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - 5) Disconnect the connector DM78001A on the right engine, power pack, M78001 (WDM 78-31-12).
 - 6) Push and hold the open button on the right fan cowl panel switch, S78005.
 - 7) Do a check for 115VAC on connector DM78001A pins 1, 2, and 3 (pin 4 gnd, pin 5 case gnd) on the power pack, M78001.
 - 8) If 115VAC is present, replace the right engine, power pack, M78001.
 - a) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - b) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - c) Do the Repair Confirmation procedure at the end of this task.
 - 9) If 115VAC is not present, do a check of the circuit between the right engine, power pack, M78001 and the R ENG COWL MTR relay, K78205.
 - a) Remove the R ENG COWL MTR relay, K78205 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - b) Do a wiring check between the pins for connector DK78205 for the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 and the connector DM78001A on the right engine, power pack, M78001 (pin 4 ground) (WDM 78-31-12).

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K78205	M78001
DK78205	DM78001A
Pin A1	Pin 1
Pin B1	Pin 2
Pin C1	Pin 3

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DM78001A on the right engine, power pack, M78001.
 - <c> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- 10) Do a check of the electrical power circuit from the circuit breaker to the R ENG COWL MTR relay, K78205 (WDM 78-31-12).
- a) Re-connect connector DM78001A on the right engine, power pack, M78001.
 - b) Remove the R ENG COWL MTR relay, K78205 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - c) Do a check for 115VAC on connector DK78205 pins A2, B2 and C2 for the R ENG COWL MTR relay, K78205 (WDM 78-31-12).
 - d) If 115VAC is not on the pins for connector DK78205, do a wiring check between these pins of connector DK78205 for the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78302 (WDM 78-31-12):

K78205	C78302
DK78205	C78302
Pin A2	Pin A2
Pin B2	Pin B2
Pin C2	Pin C2

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <c> Do the Repair Confirmation procedure at the end of this task.
- <2> If you do not find a problem with the wiring, replace the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
- <a> Do the Repair Confirmation procedure at the end of this task.

G. Repair Confirmation

- (1) Remove the sling from the fan cowl panel.
 - (a) Refer to this task: Close the Fan Cowl Panel (Sling Method), AMM TASK 71-11-04-400-804-H01.
- (2) Do this task: Close the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-400-802-H01.

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- (a) Make sure the fan cowl panel closes smoothly.
- (3) Do this task: Open the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-000-802-H01.
 - (a) Make sure the fan cowl panel opens smoothly.
- (4) Do this task: Close the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-400-802-H01.
 - (a) Make sure the fan cowl panel closes smoothly.
- (5) Do this task: Forward Fairings Installation, AMM TASK 54-52-01-400-801-001
- (6) Remove the engine strut shock absorbing lanyard personnel equipment, SPL-8818, do this task: Fall Arrest Lifeline Procedure, AMM TASK 54-52-00-910-804-001.

— END OF TASK —

808. Right Engine Fan Cowl Panel Does Not Close (Power Method)

A. Description

- (1) The left or right fan cowl panels on the right engine do not close with the power method.
 - (a) This procedure has these paragraphs:
 - 1) Initial evaluation.
 - 2) A visual check of the area around the PDOS installation, the tubes and flexhoses.
 - 3) Do a visual check on the PDOS hydraulic hose quick disconnect and make sure that the locking tang is fully engaged in the fitting groove (Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01, Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01).
 - 4) A check of the electrical control system for the left side and right side fan cowl panel which has these steps:
 - a) A check of continuity through the fan cowl panel switch.
 - b) A check of the control circuit between the fan cowl panel switch and the solenoid valves in the power pack.
 - c) A check for electrical power to the fan cowl panel switch from the circuit breaker.
 - 5) Repair confirmation.

B. Possible Causes

- (1) Missing electrical ground, broken wires or bent pins in the electrical connectors or broken insulation on the wire bundles or the control switches.
- (2) An internal mechanical or electrical problem in the PDOS solenoid valves.
- (3) No airplane electrical power to the PDOS control switches.
- (4) No control signal from the control switches to the solenoid valves in the PDOS power pack.

C. Circuit Breakers

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

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C78614	R ENG COWL DOOR MOTOR CONTROL
F	9	C78302	R ENG COWL DR MOT

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D. Related Data

- (1) When the left fan cowl close switch is selected the PDOS retract solenoid valve and the right enable solenoid valve are energized. The retract solenoid valve connects the left fan cowl actuator directly to the reservoir. The weight of the fan cowl causes the actuator to retract and the fan cowl to close. The rate that the fan cowl retracts is controlled with the flow control valve in the actuator. The right fan cowl actuator does not retract because of the energized right enable solenoid valve.
- (2) When the right fan cowl close switch is selected the PDOS retract solenoid valve and the left enable solenoid valve are energized. The retract solenoid valve connects the right fan cowl actuator directly to the reservoir. The weight of the fan cowl causes the actuator to retract and the fan cowl to close. The rate that the fan cowl retracts is controlled with the flow control valve in the actuator. The right fan cowl actuator does not retract because of the energized left enable solenoid valve.
- (3) The WDM gives the nomenclature for the left or right select solenoid valves as L or R T-R/FAN SV. The WDM nomenclature for the left or right enable solenoid valves as L or R ENBL SV. The WDM nomenclature for the retract solenoid is RETR SV.
- (4) The switch control unit has two switches and a printed circuit board with diodes. A problem with the diodes can cause incorrect operation of the PDOS unit. The switch control unit is interchangeable and can be used to open the fan cowl panel or the thrust reverser. Only some of the circuits through the switch control unit are used to operate the fan cowl panels.

E. Initial Evaluation

- (1) Use the control switch on the engine fan case to close the applicable fan cowl panel with the PDOS power pack.
 - (a) Do this task: Close the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-400-802-H01.
 - (b) If the fan cowl panel does not close with the control switch, continue with the procedure.

F. Fault Isolation Procedure



USE THE FALL ARREST LIFELINE PROCEDURE IF YOU DO NOT USE OTHER SAFETY EQUIPMENT. IF YOU USE THE SAFETY EQUIPMENT OR PROCEDURES INCORRECTLY, IT CAN CAUSE INJURY OR KILL YOU.

- (1) Use the engine strut shock absorbing lanyard personnel equipment, SPL-8818 when you work on or above the engine (AMM TASK 54-52-00-910-804-001).
- (2) Do this task: Forward Fairings Removal, AMM TASK 54-52-01-000-801-001.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (3) Look at the PDOS power pack installation to the opening actuator for the fan cowl panel or the thrust reverser.
 - (a) If it is necessary, do a visual check on the PDOS hydraulic hose quick disconnect and make sure that the locking tang is fully engaged in the fitting groove (Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01, Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01).

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- 1) If the locking tang is not fully engaged in the fitting groove or becomes loose, re-connect the locking tang in the fitting groove.
- (b) Look for broken wires or insulation on the wire bundles and the control switches on the engine inlet frame or electrical connectors that are disconnected.
 - 1) Repair all wire problems.
- (c) Look for oil leakage that could have come from the hoses or tubes for the PDOS power pack to the opening actuator for the fan cowl panel or the thrust reverser.
 - 1) If there is oil leakage from the tubes, tighten the b-nuts on the tubes or hoses.
- (d) Use a cotton wiper, G00034 and remove all the oil leakage on the engine.
- (4) If the left side fan cowl panel did not close, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the left fan cowl panel switch, S78003:
 - 1) Disconnect connector DS78003 on the left fan cowl switch, S78003.
 - 2) Push and hold the open button on the left fan cowl panel switch, S78003.
 - a) Do a check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 6 (WDM 78-31-12).

S78003		S78003
DS78003		DS78003
Pin 6	.....	Pin 1
Pin 6	.....	Pin 2
Pin 6	.....	Pin 3
Pin 6	.....	Pin 4
Pin 6	.....	Pin 10

- b) Do a check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 8 (WDM 78-31-12).

S78003		S78003
DS78003		DS78003
Pin 8	.....	Pin 1
Pin 8	.....	Pin 2
Pin 8	.....	Pin 3
Pin 8	.....	Pin 4
Pin 8	.....	Pin 10

- c) Do the check for continuity through the left fan cowl panel switch, S78003 through connector DS78003 pin 7 and pin 9 (WDM 78-31-12).
- d) If there is no continuity through the switch, replace the left fan cowl panel switch, S78003.
 - <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- e) Do the Repair Confirmation procedure at the end of this task.

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- (b) Do a check of the control circuit between the left fan cowl panel switch, S78003 and the solenoid valves in the right engine, power pack, M78001 (WDM 78-31-12).

NOTE: These steps do a check of the circuit to the right enable solenoid and the retract solenoid.

- 1) Do a check for 28VDC on connector DM78001B pins 3 and 5 on the right engine, power pack, M78001.
 - a) Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - b) Disconnect connector DM78001B on the right engine, power pack, M78001 (WDM 78-31-12).
 - c) Push and hold the close button on the left fan cowl switch, S78003.
 - d) If 28VDC is on connector DM78001B pin 3 and 5, replace the right engine, power pack, M78001.
 - <1> Do this task: PDOS Pump Removal, AMM
TASK 71-12-04-000-801-H01.
 - <2> Do this task: PDOS Pump Installation, AMM
TASK 71-12-04-400-801-H01.
 - e) If 28VDC is not on connector DM78001B pin 3 and 5, do these steps:
 - <1> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

M78001	S78006
DM78001B	DS78006
Pin 5	Pin 3
Pin 3	Pin 15

<a> If you find a problem with the wiring, then do these steps:

- I. Repair the wiring (WDM 78-31-12).
- II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- III. Re-connect connector DM78001B on the right engine, power pack, M78001.
- IV. Do the Repair Confirmation procedure at the end of this task.

- <2> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 5	Pin 7

<a> If you find a problem with the wiring, then do these steps:

- I. Repair the wiring (WDM 78-31-12).
- II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.

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- III. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.
- <3> Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 3	Pin 2
Pin 15	Pin 5
Pin 7	Pin 9

- <a> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DM78001B on the right engine, power pack, M78001.
- <c> Do the Repair Confirmation procedure at the end of this task.
- <4> Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78006	S78005
DS78006	DS78005
Pin 2	Pin 3
Pin 9	Pin 7

- <a> If you find a problem with the wiring, do these steps:
- I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - III. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - IV. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - V. Do the Repair Confirmation procedure at the end of this task.
- <5> Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-12).

S78005	S78005
DS78005	DS78005
Pin 3	Pin 2

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- <a> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
 - I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <c> Re-connect connector DM78001B on the right engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.
- <6> Do a wiring check between the pins of the connector DS78005 for the right fan cowl switch, S78005 and connector DS78004 for the left T/R cowl switch, S78004 (WDM 78-31-12).

S78005	S78004
DS78005	DS78004
Pin 2	Pin 3

- <a> If you find a problem with the wiring, do these steps:
 - I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - III. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - IV. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - V. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - VI. Do the Repair Confirmation procedure at the end of this task.
- <7> Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-12).

S78004	S78004
DS78004	DS78004
Pin 3	Pin 2
Pin 1	Pin 10

- <a> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
 - I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78005 on the right fan cowl switch, S78005.

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- <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <d> Re-connect connector DM78001B on the right engine, power pack, M78001.
- <e> Do the Repair Confirmation procedure at the end of this task.
- <8> Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78003 for the left fan cowl switch, S78003 (WDM 78-31-12).

S78004	S78003
DS78004	DS78003
Pin 10	Pin 1
Pin 2	Pin 3

- <a> If you find a problem with the wiring, do these steps:
 - I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - III. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - IV. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - V. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - VI. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - VII. Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check for electrical power to the left fan cowl panel switch, S78003 from the circuit breaker (WDM 78-31-12).
 - 1) Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - 2) Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - 3) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - 4) Disconnect connector DS78003 on the left fan cowl panel switch, S78003 (WDM 78-31-12).
 - 5) Do a check for 28VDC on pin 6 of connector DS78003 for the left fan cowl panel switch, S78003 (Pin 13 ground) (WDM 78-31-12).
 - 6) If 28VDC is not on pin 6 of connector DS78003, do a check for electrical power from the circuit breaker.
 - a) Re-connect connector DS78003 on the left fan cowl panel switch, S78003 (WDM 78-31-12).
 - b) Disconnect connector DS78006 on the right T/R cowl switch, S78006.
 - c) Disconnect connector D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).

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- d) Do a check for 28VDC on pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320.
- e) If 28VDC is not on pin 9 of connector D32011P, do a wiring check between pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78614 (WDM 78-31-12).
- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-12).
- Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <c> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
- <d> Do the Repair Confirmation procedure at the end of this task.
- f) If 28VDC is on pin 9 of connector D32011P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).

P320	S78006
D32011P	DS78006
Pin 9	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
- Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <c> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
- <d> Do the Repair Confirmation procedure at the end of this task.
- g) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
- <3> Do the Repair Confirmation procedure at the end of this task.

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- h) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78006 DS78006 Pin 8	S78005 DS78005 Pin 6
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<1> If you find a problem with the wiring, do these steps:

- <a> Repair the wiring (WDM 78-31-12).
- Re-connect connector DS78005 on the right fan cowl switch, S78005.
- <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <d> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
- <e> Do the Repair Confirmation procedure at the end of this task.

- i) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-12).

S78005 DS78005 Pin 6	S78005 DS78005 Pin 8
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<1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.

- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

<2> Re-connect connector DS78006 on the right T/R cowl switch, S78006.

<3> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.

<4> Do the Repair Confirmation procedure at the end of this task.

- j) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78004 DS78004 Pin 6	S78005 DS78005 Pin 8
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<1> If you find a problem with the wiring, do these steps:

- <a> Repair the wiring (WDM 78-31-12).
- Re-connect connector DS78004 on the left T/R cowl switch, S78004.

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- <c> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <d> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <e> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
- k) Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-12).

S78004	S78004
DS78004	DS78004
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <3> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <4> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <5> Do the Repair Confirmation procedure at the end of this task.
- l) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78003 for the left fan cowl switch, S78003 (WDM 78-31-12).

S78004	S78003
DS78004	DS78003
Pin 8	Pin 6

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - <c> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <d> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <e> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <f> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <g> Do the Repair Confirmation procedure at the end of this task.

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- (5) If the right side fan cowl panel did not close, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the right fan cowl panel switch, S78005:
- 1) Disconnect connector DS78005 on the right fan cowl switch, S78005.
 - 2) Push and hold the open button on the right fan cowl panel switch, S78005.
 - a) Do a check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 6 (WDM 78-31-12).

S78005		S78005
DS78005		DS78005
Pin 6	.....	Pin 1
Pin 6	.....	Pin 2
Pin 6	.....	Pin 3
Pin 6	.....	Pin 4
Pin 6	.....	Pin 10

- b) Do a check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 8 (WDM 78-31-12).

S78005		S78005
DS78005		DS78005
Pin 8	.....	Pin 1
Pin 8	.....	Pin 2
Pin 8	.....	Pin 3
Pin 8	.....	Pin 4
Pin 8	.....	Pin 10

- c) Do the check for continuity through the right fan cowl panel switch, S78005 through connector DS78005 pin 7 and pin 9 (WDM 78-31-12).
- d) If there is no continuity through the switch, replace the right fan cowl panel switch, S78005.
 - <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- e) Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the right fan cowl panel switch, S78005 and the solenoid valves in the right engine, power pack, M78001 (WDM 78-31-12).

NOTE: These steps do a check of the circuit to the left enable solenoid and the retract solenoid.

- 1) Do a check for 28VDC on connector DM78001B pins 1 and 5 on the right engine, power pack, M78001.
 - a) Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - b) Disconnect connector DM78001B on the right engine, power pack, M78001 (WDM 78-31-12).

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- c) Push and hold the close button on the right fan cowl switch, S78005.
 - d) If 28VDC is on connector DM78001B pin 1 and 5, replace the right engine, power pack, M78001.
 - <1> Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - <2> Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - e) If 28VDC is not on connector DM78001B pin 5, do these steps:
- NOTE:** These steps do a check of the separate circuit to the retract solenoid.
- <1> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

M78001	S78006
DM78001B	DS78006
Pin 5	Pin 3

- <a> If you find a problem with the wiring, then do these steps:
 - I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - III. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.

- <2> Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 3	Pin 2

- <a> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

- Re-connect connector DM78001B on the right engine, power pack, M78001.

- <c> Do the Repair Confirmation procedure at the end of this task.

- <3> Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

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S78006 DS78006 Pin 2 Pin 3	S78005 DS78005 Pin 3
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- <a> If you find a problem with the wiring, do these steps:
- Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - Do the Repair Confirmation procedure at the end of this task.

- f) If 28VDC is not on connector DM78001B pin 1, do these steps:

NOTE: These steps do a check of the separate circuit to the left enable solenoid.

- <1> Do a wiring check between the pins for connector DS78004 for the left T/R cowl switch, S78004 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

M78001 DM78001B Pin 1 Pin 15	S78004 DS78004 Pin 15
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- <a> If you find a problem with the wiring, then do these steps:
- Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - Re-connect connector DM78001B on the right engine, power pack, M78001.
 - Do the Repair Confirmation procedure at the end of this task.

- <2> Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-12).

S78004 DS78004 Pin 7 Pin 9 Pin 15 Pin 5	S78004 DS78004 Pin 9 Pin 5
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- <a> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
- Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

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- Re-connect connector DM78001B on the right engine, power pack, M78001.
- <c> Do the Repair Confirmation procedure at the end of this task.
- <3> Do a wiring check between the pins for connector DS78004 for the left T/R cowl switch, S78004 (WDM 78-31-12).

S78004	S78004
DS78004	DS78004
Pin 5	Pin 7

- <a> If you find a problem with the wiring, then do these steps:
 - I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - III. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.
- <4> Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78003 for the left fan cowl switch, S78003 (WDM 78-31-12).

S78004	S78003
DS78004	DS78003
Pin 9	Pin 7

- <a> If you find a problem with the wiring, do these steps:
 - I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - III. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - IV. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - V. Do the Repair Confirmation procedure at the end of this task.
- <5> Do a check for continuity through the left fan cowl switch, S78003 between these pins for connector DS78003 (WDM 78-31-12).

S78003	S78003
DS78003	DS78003
Pin 7	Pin 9

- <a> If there is no continuity through the switch, replace the left fan cowl switch, S78003.
 - I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

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- II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <c> Re-connect connector DM78001B on the right engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.
- <6> Do a wiring check between the pins of the connector DS78003 for the left fan cowl switch, S78003 and connector DS78006 for the right T/R cowl switch, S78006 (WDM 78-31-12).

S78003**DS78003**

Pin 9 Pin 1

S78006**DS78006**

- <a> If you find a problem with the wiring, do these steps:
 - I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - III. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - IV. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - V. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - VI. Do the Repair Confirmation procedure at the end of this task.
- <7> Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006**DS78006**

Pin 1 Pin 11

S78006**DS78006**

- <a> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78003 on the left fan cowl switch, S78003.
- <c> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <d> Re-connect connector DM78001B on the right engine, power pack, M78001.

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<e> Do the Repair Confirmation procedure at the end of this task.

- <8> Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78006

S78005

DS78006

DS78005

Pin 11 Pin 1

<a> If you find a problem with the wiring, do these steps:

- I. Repair the wiring (WDM 78-31-12).
- II. Re-connect connector DS78003 on the left fan cowl switch, S78003.
- III. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- IV. Re-connect connector DS78005 on the right fan cowl switch, S78005.
- V. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- VI. Re-connect connector DM78001B on the right engine, power pack, M78001.
- VII. Do the Repair Confirmation procedure at the end of this task.

- (c) Do a check for electrical power to the right fan cowl panel switch, S78005 from the circuit breaker (WDM 78-31-12).
- 1) Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - 2) Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - 3) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - 4) Re-connect connector DM78001B on the right engine, power pack, M78001.
 - 5) Disconnect connector DS78005 on the right fan cowl panel switch, S78005 (WDM 78-31-12).
 - 6) Do a check for 28VDC on pin 6 of connector DS78005 for the right fan cowl panel switch, S78005 (Pin 13 ground) (WDM 78-31-12).
 - 7) If 28VDC is not on pin 6 of connector DS78005, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect connector D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - c) Do a check for 28VDC on pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320.
 - d) If 28VDC is not on pin 9 of connector D32011P, do a wiring check between pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78614 (WDM 78-31-12).

<1> If you find a problem with the wiring, do these steps:

<a> Repair the wiring (WDM 78-31-12).

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- Re-connect connector DS78005 on the right T/R cowl switch, S78005.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- e) If 28VDC is on pin 9 of connector D32011P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).

P320	S78006
D32011P	DS78006
Pin 9	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78005 on the right T/R cowl switch, S78005.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect connector DS78005 on the right T/R cowl switch, S78005.
 - <3> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <4> Do the Repair Confirmation procedure at the end of this task.
- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

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S78006 DS78006 Pin 8	S78005 DS78005 Pin 6
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- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.

G. Repair Confirmation

- (1) Do this task: Close the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-400-802-H01.
 - (a) Make sure the fan cowl panel closes smoothly.
- (2) Do this task: Open the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-000-802-H01.
 - (a) Make sure the fan cowl panel opens smoothly.
- (3) Do this task: Close the Fan Cowl Panel (Power Method), AMM TASK 71-11-04-400-802-H01.
 - (a) Make sure the fan cowl panel closes smoothly.
- (4) Do this task: Forward Fairings Installation, AMM TASK 54-52-01-400-801-001
- (5) Remove the engine strut shock absorbing lanyard personnel equipment, SPL-8818; do this task: Fall Arrest Lifeline Procedure, AMM TASK 54-52-00-910-804-001.

————— **END OF TASK** —————

802. Left Engine Thrust Reverser Does Not Open (Power Method)

A. Description

- (1) The left or right thrust reversers on the left engine do not open with the power method.
 - (a) This procedure has these paragraphs:
 - 1) Initial evaluation.
 - 2) A check of the oil quantity in the oil tank reservoir of the PDOS power pack.
 - 3) A visual check of the area around the PDOS installation, the tubes and flexhoses.
 - 4) A check for oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack.
 - 5) A check of the hydraulic cowl opening flexhoses for leakage.
 - 6) A check for oil leakage from the thrust reverser opening actuator.
 - 7) A check of the electrical control system for the left side and right side thrust reverser which has these steps:
 - a) A check of continuity through the T/R cowl switch.
 - b) A check of the control circuit between the T/R cowl switch and the COWL MTR relay.

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- c) A check of the control circuit between the T/R cowl switch and the solenoid valves in the power pack.
 - d) A check for electrical power to the T/R cowl switch from the circuit breaker.
 - e) A check of the electrical power to the motor in the power pack.
- 8) Repair confirmation.

B. Possible Causes

- (1) Oil leakage from the quick disconnects, hoses or tubes.
- (2) Oil leakage from the opening actuator rod end seals or inlet port.
- (3) Oil leakage from the PDOS power pack solenoid valves, ports or oil tank.
- (4) Missing electrical ground, broken wires or bent pins in the electrical connectors or broken insulation on the wire bundles or the control switches.
- (5) A circuit problem or a cowl door motor relay problem.
- (6) An internal mechanical or electrical problem in the PDOS power pack motor or solenoid valves.
- (7) No airplane electrical power to the PDOS power pack.
- (8) No control signal from the control switches to the solenoid valves in the PDOS power pack.
- (9) The oil tank on the PDOS power pack is not serviced.
- (10) Jammed T-bolt gearbox, cable or handle.

C. Circuit Breakers

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

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	12	C78613	L ENG COWL DR MOT CTRL
F	6	C78301	L ENG COWL DR MOT

D. Related Data

- (1) When the left thrust reverser cowl open switch is selected the PDOS left enable solenoid valve and the left select solenoid valve are energized. The motor is energized and moves the pump driveshaft to operate three pump piston assemblies. Low pressure fluid, from the reservoir goes through the inlet and the outlet check valves of the pump piston assemblies. This supplies high pressure fluid to the left thrust reverser cowl actuator connection.
- (2) When the right thrust reverser cowl open switch is selected the PDOS right enable solenoid valve and the right select solenoid valve are energized. The motor is energized and moves the pump driveshaft to operate three pump piston assemblies. Low pressure fluid, from the reservoir goes through the inlet and the outlet check valves of the pump piston assemblies. This supplies high pressure fluid to the left thrust reverser cowl actuator connection.
- (3) The WDM gives the nomenclature for the left or right select solenoid valves as L or R T-R/FAN SV. The WDM nomenclature for the left or right enable solenoid valves as L or R ENBL SV. The WDM nomenclature for the retract solenoid is RETR SV.
- (4) The switch control unit has two switches and a printed circuit board with diodes. A problem with the diodes can cause incorrect operation of the PDOS unit. The switch control unit is interchangeable and can be used to open the fan cowl panel or the thrust reverser. Only some of the circuits through the switch control unit are used to operate the fan cowl panels.

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E. Initial Evaluation

- (1) Use the control switch on the engine fan case to open the applicable thrust reverser with the PDOS power pack.
 - (a) Do this task: Open the Thrust Reverser (Power Method), AMM TASK 78-31-00-010-802-H01.
 - (b) If the thrust reverser does not open with the control switch, continue with the procedure.

F. Fault Isolation Procedure

- (1) Make sure the T-bolt has turned to release the receiver on the upper bifurcation of the opposite thrust reverser half.
 - (a) Pull out and push in the T-handle to find if the operation of the push-pull cable, or the gear or bearings in the gearbox jam or bind.
 - (b) Look for cable backlash.
 - (c) If the travel of the T-handle is not correct, adjust the T-bolt latch assembly.
 - 1) Do this task: Thrust Reverser Upper Bifurcation T-Hook Latch Receiver Adjustment, AMM TASK 78-31-20-820-802-H01.
 - (d) If the T-bolt handle, cable or gearbox is jammed or there is cable backlash, replace the T-bolt latch assembly.
 - 1) Do this task: Thrust Reverser Upper Bifurcation T-Hook Latch, Gearbox, Cable and Handle Assembly Removal (Selections), AMM TASK 78-31-20-000-801-H01.
 - 2) Do this task: Thrust Reverser Upper Bifurcation T-Hook Latch, Gearbox, Cable and Handle Assembly Installation (Selections), AMM TASK 78-31-20-400-801-H01.
 - (e) Do the Repair Confirmation procedure at the end of this task.



USE THE FALL ARREST LIFELINE PROCEDURE IF YOU DO NOT USE OTHER SAFETY EQUIPMENT. IF YOU USE THE SAFETY EQUIPMENT OR PROCEDURES INCORRECTLY, IT CAN CAUSE INJURY OR KILL YOU.

- (2) Use the engine strut shock absorbing lanyard personnel equipment, SPL-8818 when you work on or above the engine (AMM TASK 54-52-00-910-804-001).
- (3) Do this task: Forward Fairings Removal, AMM TASK 54-52-01-000-801-001.
- (4) Do a check of the oil quantity in the oil tank reservoir of the PDOS power pack.



DO NOT LET PDOS OIL LEAKAGE COLLECT. IF YOU DO NOT CLEAN THE AREA, DAMAGE CAN OCCUR FROM THE PDOS OIL.



IF YOU MUST ADD PDOS OIL TO THE PDOS PUMP, MAKE SURE THE FAN COWL PANELS AND THRUST REVERSERS ARE COMPLETELY CLOSED OR AN OVERFILL CONDITION COULD OCCUR.

- (a) If it is necessary, do this task: Fill the PDOS Pump with Oil, AMM TASK 12-12-02-610-803-004.
- (b) Do the Repair Confirmation procedure at the end of this task.

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DO NOT LET PDOS OIL LEAKAGE COLLECT. IF YOU DO NOT CLEAN THE AREA, DAMAGE CAN OCCUR FROM THE PDOS OIL.

- (5) Look for oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack.
 - (a) If there is oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack, replace the PDOS power pack.
 - 1) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - 2) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - (b) If there is oil leakage from the tubes, tighten the b-nuts on the tubes or hoses.
 - (c) Do the Repair Confirmation procedure at the end of this task.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (6) Examine the area under the engine, fan cowl panels and thrust reverser for oil leakage.
 - (a) Look for oil leakage that could have come from the hoses or tubes for the PDOS power pack to the opening actuator for the fan cowl panel or the thrust reverser.
 - (b) Look for oil leakage that could have come from the opening actuator rod end or inlet port.
- (7) Do this task: Open the Fan Cowl Panel (Sling Method), AMM TASK 71-11-04-000-804-H01.
 - (a) As you open the fan cowl panel, look for these conditions.
 - 1) Look for oil leakage from the hoses or tubes.
 - a) If there is oil leakage from the tubes, tighten the b-nuts on the tubes or hoses.
 - 2) Look for oil leakage from the opening actuator rod end or inlet port.
 - 3) Look for broken wires or insulation on the wire bundles and the control switches.
 - a) Repair all wire problems.
 - 4) Look for a problem with the actuator attachment fitting on the strut.
 - a) Replace all broken fittings.

NOTE: Use the suppliers component repair procedures.
 - 5) Look for a problem with the actuator attachment fitting on the thrust reverser.
 - a) Replace all broken fittings.

NOTE: Use the suppliers component repair procedures.
- (8) Do this task: Open the Thrust Reverser (Sling Method), AMM TASK 78-31-00-010-804-H01.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (9) Examine the hydraulic cowl opening flexhoses for leakage.
 - (a) Do this task: Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01.

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- (b) If the cowl opening flexhose is damaged, replace the flexhose.
 - 1) Do this task: Hydraulic Cowl Opening Flexhoses Removal, AMM TASK 71-12-03-000-801-H01.
 - 2) Do this task: Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01.
 - 3) If there is oil leakage from the hose, tighten the b-nuts on the hose.
 - 4) Do the Repair Confirmation procedure at the end of this task.
- (c) Do the Repair Confirmation procedure at the end of this task.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (10) If there is oil leakage from the thrust reverser opening actuator rod end or inlet port or the actuator is damaged, replace the thrust reverser opening actuator.
 - (a) Do this task: Thrust Reverser Cowl Opening Actuators Removal, AMM TASK 71-12-02-000-804-H00.
 - (b) Do this task: Thrust Reverser Cowl Opening Actuators Installation, AMM TASK 71-12-02-400-804-H00.
 - (c) Use a cotton wiper, G00034 and remove all the oil leakage on the engine.
 - (d) Do the Repair Confirmation procedure at the end of this task.

- (11) If the left side thrust reverser did not open, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the left T/R cowl switch, S78004:
 - 1) Disconnect connector DS78004 on the left T/R cowl switch, S78004.
 - 2) Push and hold the open button on the left T/R cowl switch, S78004.
 - 3) Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-11).

S78004

DS78004

Pin 6 Pin 4
 Pin 6 Pin 14
 Pin 6 Pin 15

S78004

DS78004

- a) If there is no continuity through the switch, replace the left T/R cowl switch, S78004.

<1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

<2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

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

- (b) Do a check of the control circuit between the left T/R cowl switch, S78004 and the L ENG COWL MTR relay, K78105.

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- 1) Re-connect connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).
- 2) Remove the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- 3) Do a check for ground on connector DK78105 pin X2.
 - a) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-11).
 - <2> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <3> Do the Repair Confirmation procedure at the end of this task.
- 4) Push and hold the open button on the left T/R cowl switch, S78004.
- 5) Do a check for 28VDC on the L ENG COWL MTR relay, K78105 connector DK78105 pin X1.
- 6) If 28VDC is not on connector DK78105 pin X1, do these steps:
 - a) Disconnect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - b) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 11	Pin 14
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- <3> Do the Repair Confirmation procedure at the end of this task.
- c) Do a wiring check between the right T/R cowl switch, S78006 and the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.

S78006	K78105
DS78006	DK78105
Pin 14	Pin X1

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).

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- <c> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- <d> Do the Repair Confirmation procedure at the end of this task.
- d) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-11).

S78005	S78005
DS78005	DS78005
Pin 11	Pin 14
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- <3> Do the Repair Confirmation procedure at the end of this task.
- e) Do a wiring check between the right T/R cowl switch, S78006 and the right fan cowl switch, S78005 (WDM 78-31-11).

S78006	S78005
DS78006	DS78005
Pin 11	Pin 14

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-11).
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - <d> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- f) Do a wiring check between the left T/R cowl switch, S78004 and the right fan cowl switch, S78005 (WDM 78-31-11).

S78004	S78005
DS78004	DS78005
Pin 11	Pin 14

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect the connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).

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- <c> Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-11).
 - <d> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - <e> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check of the control circuit between the left T/R cowl switch, S78004 and the solenoid valves in the left engine, power pack, M78001 (WDM 78-31-11).

NOTE: These steps do a check of the circuit to the left enable solenoid and the left select solenoid.

- 1) Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-11).
- 2) Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
- 3) Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- 4) Disconnect connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).
- 5) Do a check for 28VDC on connector DM78001B pins 1 and 2 on the left engine, power pack, M78001.
 - a) Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - b) Disconnect connector DM78001B on the left engine, power pack, M78001 (WDM 78-31-11).
 - c) Push and hold the open button on the left T/R cowl switch, S78004.
 - d) If 28VDC is not on connector DM78001B pins 1 and 2, do a wiring check between these pins for connector DS78004 for the left T/R cowl switch, S78004 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

M78001	S78004
DM78001B	DS78004
Pin 2	Pin 4
Pin 1	Pin 15

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DM78001B on the left engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- (d) Do a check for electrical power to the left T/R cowl switch, S78004 from the circuit breaker (WDM 78-31-11).
- 1) Re-connect connector DM78001B on the left engine, power pack, M78001.

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- 2) Disconnect connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).
- 3) Do a check for 28VDC on pin 6 of connector DS78004 for the left T/R cowl switch, S78004 (Pin 13 ground) (WDM 78-31-11).
- 4) If 28VDC is not on pin 6 of connector DS78004, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect connector D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - c) Do a check for 28VDC on pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320.
 - d) If 28VDC is not on pin 21 of connector D32017P, do a wiring check between pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78613 (WDM 78-31-11).

<1> If you find a problem with the wiring, do these steps:

 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is on pin 21 of connector D32017P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).

P320	S78006
D32017P	DS78006
Pin 21	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

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S78006 DS78006 Pin 6	S78006 DS78006 Pin 8
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- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <3> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <4> Do the Repair Confirmation procedure at the end of this task.
- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78006 DS78006 Pin 8	S78005 DS78005 Pin 6
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- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <d> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <e> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
- h) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-11).

S78005 DS78005 Pin 6	S78005 DS78005 Pin 8
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- <1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

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- <2> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <3> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <4> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
- <5> Do the Repair Confirmation procedure at the end of this task.

- i) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78004	S78005
DS78004	DS78005
Pin 6	Pin 8

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <d> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <e> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
- (e) Do a check of the electrical power to the motor in the left engine, power pack, M78001 (WDM 78-31-11).
 - 1) Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - 2) Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - 3) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - 4) Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - 5) Disconnect connector DM78001A on the left engine, power pack, M78001 (WDM 78-31-11).
 - 6) Do a check for 115VAC on connector DM78001A pins 1, 2, and 3 (pin 4 gnd, pin 5 case gnd) on the left engine, power pack, M78001.
 - 7) If 115VAC is present, replace the left engine, power pack, M78001.
 - a) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - b) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - c) Do the Repair Confirmation procedure at the end of this task.
 - 8) If 115VAC is not present, do a check of the circuit between the left engine, power pack, M78001 and the L ENG COWL MTR relay, K78105.
 - a) Remove the L ENG COWL MTR relay, K78105 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).

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- b) Do a wiring check between the pins for connector DK78105 for the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 and the connector DM78001A on the left engine, power pack, M78001 (pin 4 ground) (WDM 78-31-11).

K78105	M78001
DK78105	DM78001A
Pin A1	Pin 1
Pin B1	Pin 2
Pin C1	Pin 3

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DM78001A on the left engine, power pack, M78001.
 - <c> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- 9) Do a check of the electrical power circuit from the circuit breaker to the L ENG COWL MTR relay, K78105 (WDM 78-31-11).
- a) Re-connect connector DM78001A on the left engine, power pack, M78001.
 - b) Do a check for 115VAC on connector DK78105 pins A2, B2 and C2 for the L ENG COWL MTR relay, K78105 (WDM 78-31-11).
 - c) If 115VAC is not on the pins for connector DK78105, do a wiring check between these pins of connector DK78105 for the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78301 (WDM 78-31-11):

K78105	C78301
DK78105	C78301
Pin A2	Pin A2
Pin B2	Pin B2
Pin C2	Pin C2

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <c> Do the Repair Confirmation procedure at the end of this task.
- <2> If you do not find a problem with the wiring, replace the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
- <a> Do the Repair Confirmation procedure at the end of this task.
- (12) If the right side thrust reverser did not open, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

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- (a) Do a check of the right T/R cowl switch, S78006:
- 1) Disconnect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - 2) Push and hold the open button on the right T/R cowl switch, S78006.
 - 3) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 4
Pin 6	Pin 14
Pin 6	Pin 15

- a) If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <3> Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the right T/R cowl switch, S78006 and the L ENG COWL MTR relay, K78105.
 - 1) Re-connect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - 2) Remove the L ENG COWL MTR relay, K78105 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - 3) Do a check for ground on connector DK78105 pin X2.
 - a) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-11).
 - <2> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <3> Do the Repair Confirmation procedure at the end of this task.
 - 4) Push and hold the open button on the right T/R cowl switch, S78006.
 - 5) Do a check for 28VDC on connector DK78105 pin X1 (Pin X2 gnd).
 - 6) If 28VDC is on connector DK78105 pin X1, replace the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - a) Do the Repair Confirmation procedure at the end of this task.
 - 7) If 28VDC is not on connector DK78105 pin X1, do a wire check between the L ENG COWL MTR relay, K78105 and the right T/R cowl switch, S78006.

S78006	K78105
DS78006	DK78105
Pin 14	Pin X1

- <1> If you find a problem with the wiring, do these steps:

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- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - <c> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check of the control circuit between the right T/R cowl switch, S78006 and the solenoid valves in the left engine, power pack, M78001.

NOTE: These steps do a check of the circuit to the right enable solenoid and the right select solenoid.

- 1) Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
- 2) Do a check for the electrical signal from the right T/R cowl switch, S78006 to the solenoid valves on the left engine, power pack, M78001.
 - a) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect connector DM78001B on the left engine, power pack, M78001 (WDM 78-31-11).
 - c) Push and hold the open button on the right T/R cowl switch, S78006.
 - d) Do a check for 28VDC on connector DM78001B pins 3 and 4 on the left engine, power pack, M78001.

NOTE: These steps do a check of the circuit to the right enable solenoid and the right select solenoid.

- e) If 28VDC is not on connector DM78001B pins 3 and 4, do a wiring check between these pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

M78001	S78006
DM78001B	DS78006
Pin 4	Pin 4
Pin 3	Pin 15

- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <c> Re-connect connector DM78001B on the left engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- (d) Do a check for electrical power to the right T/R cowl switch, S78006 from the circuit breaker.
- 1) Disconnect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - 2) Do a check for 28VDC on pin 6 of connector DS78006 for the right T/R cowl switch, S78006 (Pin 13 ground) (WDM 78-31-11).

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- 3) If 28VDC is not on pin 6 of connector DS78006, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - b) Do a check for 28VDC on pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320.
 - c) If 28VDC is not on pin 21 of connector D32017P, do a wiring check between pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78613 (WDM 78-31-11).
 - d) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-11).
 - <2> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <3> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <4> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is on pin 21 of connector D32017P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32017P on the Ground Service/Handling Power Panel, P320.

P320 D32017P Pin 21	S78006 DS78006 Pin 6
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- <1> If you find a problem with the wiring, then do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <c> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- (e) Do a check of the electrical power to the motor in the power pack, M78001.
 - 1) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - 2) Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - 3) Disconnect connector DM78001A on the left engine, power pack, M78001 (WDM 78-31-11).
 - 4) Do a check for 115VAC on connector DM78001A pins 1, 2, and 3 (pin 4 gnd, pin 5 case gnd) on the power pack, M78001.
 - 5) If 115VAC is present, replace the left engine, power pack, M78001.
 - a) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - b) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - c) Do the Repair Confirmation procedure at the end of this task.
 - 6) If 115VAC is not present, do a check of the circuit between the left engine, power pack, M78001 and the L ENG COWL MTR relay, K78105.

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- a) Remove the L ENG COWL MTR relay, K78105 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
- b) Do a wiring check between the pins for connector DK78105 for the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 and the connector DM78001A on the left engine, power pack, M78001 (Pin 4 ground) (WDM 78-31-11).

K78105	M78001
DK78105	DM78001A
Pin A1	Pin 1
Pin B1	Pin 2
Pin C1	Pin 3

- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DM78001A on the left engine, power pack, M78001.
 - <c> Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.

- 7) Do a check of the electrical power circuit from the circuit breaker to the L ENG COWL MTR relay, K78105.
 - a) Re-connect connector DM78001A on the left engine, power pack, M78001.
 - b) Do a check for 115VAC on connector DK78105 pins A2, B2 and C2 for the L ENG COWL MTR relay, K78105 (WDM 78-31-11).
 - c) If 115VAC is not on the pins for connector DK78105, do a wiring check between these pins of connector DK78105 for the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78301 (WDM 78-31-11):

K78105	C78301
DK78105	C78301
Pin A2	Pin A2
Pin B2	Pin B2
Pin C2	Pin C2

- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Install the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320.
 - <c> Do the Repair Confirmation procedure at the end of this task.
- <2> If you do not find a problem with the wiring, replace the L ENG COWL MTR relay, K78105, on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
- <a> Do the Repair Confirmation procedure at the end of this task.

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G. Repair Confirmation

- (1) Remove the sling from the thrust reverser.
 - (a) Refer to this task: Close the Thrust Reverser (Sling Method), AMM TASK 78-31-00-410-804-H01.
- (2) Remove the sling from the fan cowl panel.
 - (a) Refer to this task: Close the Fan Cowl Panel (Sling Method), AMM TASK 71-11-04-400-804-H01.
- (3) Do this task: Close the Thrust Reverser (Power Method), AMM TASK 78-31-00-410-802-H01.
 - (a) Make sure the thrust reverser closes smoothly.
- (4) Do this task: Open the Thrust Reverser (Power Method), AMM TASK 78-31-00-010-802-H01.
 - (a) Make sure the thrust reverser opens smoothly.
- (5) Do this task: Close the Thrust Reverser (Power Method), AMM TASK 78-31-00-410-802-H01.
 - (a) Make sure the thrust reverser closes smoothly.
- (6) Do this task: Forward Fairings Installation, AMM TASK 54-52-01-400-801-001
- (7) Remove the engine strut shock absorbing lanyard personnel equipment, SPL-8818, do this task: Fall Arrest Lifeline Procedure, AMM TASK 54-52-00-910-804-001.

— END OF TASK —

803. Left Engine Thrust Reverser Does Not Close (Power Method)

A. Description

- (1) The left or right thrust reversers on the left engine do not close with the power method.
 - (a) This procedure has these paragraphs:
 - 1) Initial evaluation.
 - 2) A visual check of the area around the PDOS installation, the tubes and flexhoses.
 - 3) Do a visual check on the PDOS hydraulic hose quick disconnect and make sure that the locking tang is fully engaged in the fitting groove (Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01, Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01).
 - 4) A check of the electrical control system for the left side and right side thrust reverser which has these steps:
 - a) A check of continuity through the T/R cowl switch.
 - b) A check of the control circuit between the T/R cowl switch and the solenoid valves in the power pack.
 - c) A check for electrical power to the T/R cowl switch from the circuit breaker.
 - 5) Repair confirmation.

B. Possible Causes

- (1) Missing electrical ground, broken wires or bent pins in the electrical connectors or broken insulation on the wire bundles or the control switches.
- (2) An internal mechanical or electrical problem in the PDOS solenoid valves.
- (3) No airplane electrical power to the PDOS control switches.
- (4) No control signal from the control switches to the solenoid valves in the PDOS power pack.

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C. Circuit Breakers

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

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	12	C78613	L ENG COWL DR MOT CTRL
F	6	C78301	L ENG COWL DR MOT

D. Related Data

- (1) When the left thrust reverser close switch is selected the PDOS retract solenoid valve and the right enable solenoid valve are energized. The left select solenoid valve is also energized. The retract solenoid valve and left select solenoid valve connect the thrust reverser opening actuator directly to the reservoir. The weight of the thrust reverser causes the opening actuator to retract and the thrust reverser to close. The rate that the thrust reverser closes is controlled by the flow control valve in the actuator. The right thrust reverser opening actuator does not retract because of the energized right enable solenoid valve.
- (2) When the right thrust reverser close switch is selected the PDOS retract solenoid valve and the left enable solenoid valve are energized. The right select solenoid valve is also energized. The retract solenoid valve and right select solenoid valve connect the thrust reverser opening actuator directly to the reservoir. The weight of the thrust reverser causes the opening actuator to retract and the thrust reverser to close. The rate that the thrust reverser closes is controlled by the flow control valve in the actuator. The left thrust reverser opening actuator does not retract because of the energized left enable solenoid valve.
- (3) The WDM gives the nomenclature for the left or right select solenoid valves as L or R T-R/FAN SV. The WDM nomenclature for the left or right enable solenoid valves as L or R ENBL SV. The WDM nomenclature for the retract solenoid is RETR SV.
- (4) The switch control unit has two switches and a printed circuit board with diodes. A problem with the diodes can cause incorrect operation of the PDOS unit. The switch control unit is interchangeable and can be used to open the fan cowl panel or the thrust reverser. Only some of the circuits through the switch control unit are used to operate the fan cowl panels.

E. Initial Evaluation

- (1) Use the control switch on the engine fan case to close the applicable thrust reverser with the PDOS power pack.
 - (a) Do this task: Close the Thrust Reverser (Power Method), AMM TASK 78-31-00-410-802-H01.
 - (b) If the thrust reverser does not close with the control switch, continue with the procedure.

F. Fault Isolation Procedure



USE THE FALL ARREST LIFELINE PROCEDURE IF YOU DO NOT USE OTHER SAFETY EQUIPMENT. IF YOU USE THE SAFETY EQUIPMENT OR PROCEDURES INCORRECTLY, IT CAN CAUSE INJURY OR KILL YOU.

- (1) Use the engine strut shock absorbing lanyard personnel equipment, SPL-8818 when you work on or above the engine (AMM TASK 54-52-00-910-804-001).
- (2) Do this task: Forward Fairings Removal, AMM TASK 54-52-01-000-801-001.

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DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (3) Look at the PDOS power pack installation to the opening actuator for the fan cowl panel or the thrust reverser.
 - (a) If it is necessary, do a visual check on the PDOS hydraulic hose quick disconnect and make sure that the locking tang is fully engaged in the fitting groove (Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01, Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01).
 - 1) If the locking tang is not fully engaged in the fitting groove or becomes loose, re-connect the locking tang in the fitting groove.
 - (b) Look for broken wires or insulation on the wire bundles and the control switches on the engine inlet frame or electrical connectors that are disconnected.
 - 1) Repair all wire problems.
 - (c) Look for oil leakage that could have come from the hoses or tubes for the PDOS power pack to the opening actuator for the fan cowl panel or the thrust reverser.
 - 1) If there is oil leakage from the tubes, tighten the b-nuts on the tubes and hoses.
 - (d) Use a cotton wiper, G00034 and remove all the oil leakage on the engine.
- (4) If the left side thrust reverser did not close, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the left T/R cowl switch, S78004:
 - 1) Disconnect connector DS78004 on the left T/R cowl switch, S78004.
 - 2) Push and hold the close button on the left T/R cowl switch, S78004.
 - 3) Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-11).

**S78004
DS78004**

Pin 6	.....	Pin 3
Pin 6	.....	Pin 1
Pin 6		Pin 4

**S78004
DS78004**

Pin 3	.....	Pin 6
Pin 1	.....	Pin 6
Pin 4	.....	Pin 6

- a) If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
 - <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- b) Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the left T/R cowl switch, S78004 and the solenoid valves in the left engine, power pack, M78001 (WDM 78-31-11).

NOTE: These steps do a check of the circuit to the left select solenoid, the right enable solenoid and the retract solenoid.

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- 1) Do a check for 28VDC on connector DM78001B pins 2, 3 and 5 on the left engine, power pack, M78001.
 - a) Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - b) Disconnect connector DM78001B on the left engine, power pack, M78001 (WDM 78-31-11).
 - c) Push and hold the close button on the left T/R cowl switch, S78004.
 - d) If 28VDC is on connector DM78001B pin 2, 3 and 5, replace the left engine, power pack, M78001.
 - <1> Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - <2> Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - <3> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is not on connector DM78001B pin 2, do a wiring check between the pins for connector DS78004 for the left T/R cowl switch, S78004 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

NOTE: These steps do a check of the separate circuit to the left select solenoid.

M78001	S78004
DM78001B	DS78004
Pin 2	Pin 4

- <1> If you find a problem with the wiring, then do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DM78001B on the left engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.

- f) If 28VDC is not on connector DM78001B pin 5, do these steps:

NOTE: These steps do a check of the separate circuit to the retract solenoid.

- <1> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <2> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

M78001	S78006
DM78001B	DS78006
Pin 5	Pin 3

- <a> If you find a problem with the wiring, then do these steps:
 - I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.

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- III. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.
- <3> Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 3	Pin 2

- <a> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DM78001B on the left engine, power pack, M78001.
- <c> Do the Repair Confirmation procedure at the end of this task.
- <4> Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78006	S78005
DS78006	DS78005
Pin 2	Pin 3

- <a> If you find a problem with the wiring, do these steps:
- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - III. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - IV. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - V. Do the Repair Confirmation procedure at the end of this task.
- <5> Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-11).

S78005	S78005
DS78005	DS78005
Pin 3	Pin 2

- <a> If there is no continuity through the switch, replace the right fan cowl switch, S78005.

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- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <c> Re-connect connector DM78001B on the left engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.
- <6> Do a wiring check between the pins of the connector DS78005 for the right fan cowl switch, S78005 and connector DS78004 for the left T/R cowl switch, S78004 (WDM 78-31-11).

S78005	S78006
DS78005	DS78006
Pin 2	Pin 3

- <a> If you find a problem with the wiring, do these steps:
- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - III. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - IV. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - V. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - VI. Do the Repair Confirmation procedure at the end of this task.

- g) If 28VDC is not on connector DM78001B pin 3, do these steps:

NOTE: These steps do a check of the separate circuit to the right enable solenoid.

- <1> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

M78001	S78006
DM78001B	DS78006
Pin 3	Pin 15

- <a> If you find a problem with the wiring, then do these steps:
- I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - III. Re-connect connector DM78001B on the left engine, power pack, M78001.

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IV. Do the Repair Confirmation procedure at the end of this task.

<2> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 5	Pin 7

<a> If you find a problem with the wiring, then do these steps:

- I. Repair the wiring (WDM 78-31-11).
- II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- III. Re-connect connector DM78001B on the left engine, power pack, M78001.
- IV. Do the Repair Confirmation procedure at the end of this task.

<3> Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 15	Pin 5
Pin 7	Pin 9

<a> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.

- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

 Re-connect connector DM78001B on the left engine, power pack, M78001.

<c> Do the Repair Confirmation procedure at the end of this task.

<4> Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78006	S78005
DS78006	DS78005
Pin 9	Pin 7

<a> If you find a problem with the wiring, do these steps:

- I. Repair the wiring (WDM 78-31-11).
- II. Re-connect connector DS78005 on the right fan cowl switch, S78005.

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- III. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - IV. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - V. Do the Repair Confirmation procedure at the end of this task.
- <5> Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-11).

S78005	S78005
DS78005	DS78005
Pin 7	Pin 9

- <a> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
 - I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <c> Re-connect connector DM78001B on the left engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- <6> Do a wiring check between the pins of the connector DS78005 for the right fan cowl switch, S78005 and connector DS78004 for the left T/R cowl switch, S78004 (WDM 78-31-11).

S78005	S78006
DS78005	DS78006
Pin 9	Pin 1

- <a> If you find a problem with the wiring, do these steps:
 - I. Repair the wiring (WDM 78-31-11).
 - II. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - III. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - IV. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - V. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - VI. Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check for electrical power to the left T/R cowl switch, S78004 from the circuit breaker (WDM 78-31-11).

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- 1) Re-connect connector DS78005 on the right fan cowl switch, S78005.
- 2) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- 3) Re-connect connector DM78001B on the left engine, power pack, M78001.
- 4) Disconnect connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-11).
- 5) Do a check for 28VDC on pin 6 of connector DS78004 for the left T/R cowl switch, S78004 (Pin 13 ground) (WDM 78-31-11).
- 6) If 28VDC is not on pin 6 of connector DS78004, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect connector D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - c) Do a check for 28VDC on pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320.
 - d) If 28VDC is not on pin 21 of connector D32017P, do a wiring check between pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78613 (WDM 78-31-11).

<1> If you find a problem with the wiring, do these steps:

 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is on pin 21 of connector D32017P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).

P320	S78006
D32017P	DS78006
Pin 21	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.

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- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

<1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.

<a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

 Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

<2> Re-connect connector DS78004 on the left T/R cowl switch, S78004.

<3> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.

<4> Do the Repair Confirmation procedure at the end of this task.

- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78006	S78005
DS78006	DS78005
Pin 8	Pin 6

<1> If you find a problem with the wiring, do these steps:

<a> Repair the wiring (WDM 78-31-11).

 Re-connect connector DS78004 on the left T/R cowl switch, S78004.

<c> Re-connect connector DS78005 on the right fan cowl switch, S78005.

<d> Re-connect connector DS78006 on the right T/R cowl switch, S78006.

<e> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.

<f> Do the Repair Confirmation procedure at the end of this task.

- h) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-11).

S78005	S78005
DS78005	DS78005
Pin 6	Pin 8

<1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.

<a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

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 Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

- <2> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <3> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <4> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
- <5> Do the Repair Confirmation procedure at the end of this task.

- i) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-11).

S78004	S78005
DS78004	DS78005
Pin 6	Pin 8

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <d> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <e> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.

- (5) If the right side thrust reverser did not close, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the right T/R cowl switch, S78006:
 - 1) Disconnect connector DS78006 on the right T/R cowl switch, S78006.
 - 2) Push and hold the open button on the right T/R cowl switch, S78006.
 - 3) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-11).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 3
Pin 6	Pin 1
Pin 6	Pin 4

- a) If there is no continuity through the switch, replace the right T/R cowl switch, S78006.

<1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

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<2> Do this task: Actuation and Control Switches Installation, AMM
TASK 71-12-06-400-801-H01.

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

- (b) Do a check of the control circuit between the right T/R cowl switch, S78006 and the solenoid valves in the left engine, power pack, M78001 (WDM 78-31-11).

NOTE: These steps do a check of the circuit to the left enable solenoid, the right select solenoid and the retract solenoid.

- 1) Do a check for 28VDC on connector DM78001B pins 1, 4 and 5 on the left engine, power pack, M78001.

- a) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- b) Disconnect connector DM78001B on the left engine, power pack, M78001 (WDM 78-31-11).
- c) Push and hold the close button on the right T/R cowl switch, S78006.
- d) If 28VDC is on connector DM78001B pin 1, 4 and 5, replace the left engine, power pack, M78001.

<1> Do this task: PDOS Pump Removal, AMM
TASK 71-12-04-000-801-H01.

<2> Do this task: PDOS Pump Installation, AMM
TASK 71-12-04-400-801-H01.

- e) If 28VDC is not on connector DM78001B pin 4, and 5, do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

NOTE: These steps do a check of the circuits to the right select solenoid and the retract solenoid.

M78001	S78006
DM78001B	DS78006
Pin 4	Pin 4
Pin 5	Pin 3

<1> If you find a problem with the wiring, then do these steps:

- <a> Repair the wiring (WDM 78-31-11).
- Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <c> Re-connect connector DM78001B on the left engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.

- f) If 28VDC is not on connector DM78001B pin 1, do these steps:

NOTE: These steps do a check of the separate circuit to the left enable solenoid.

- <1> Do a wiring check between the pins for connector DS78004 for the left T/R cowl switch, S78004 and the connector DM78001B on the left engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-11).

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M78001 DM78001B Pin 1 Pin 15	S78004 DS78004 Pin 15 Pin 15
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- <a> If you find a problem with the wiring, then do these steps:
- Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - Re-connect connector DM78001B on the left engine, power pack, M78001.
 - Do the Repair Confirmation procedure at the end of this task.

<2> Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-11).

S78004 DS78004 Pin 15 Pin 5 Pin 7 Pin 9	S78004 DS78004 Pin 5 Pin 5 Pin 9 Pin 9
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- <a> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
- Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

 Re-connect connector DM78001B on the left engine, power pack, M78001.

<c> Do the Repair Confirmation procedure at the end of this task.

<3> Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 (WDM 78-31-11).

S78004 DS78004 Pin 5 Pin 7	S78004 DS78004 Pin 7 Pin 7
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- <a> If you find a problem with the wiring, do these steps:
- Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - Re-connect connector DM78001B on the left engine, power pack, M78001.
 - Do the Repair Confirmation procedure at the end of this task.

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- <4> Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78003 for the left fan cowl switch, S78003 (WDM 78-31-11).

S78004 DS78004 Pin 9	S78003 DS78003 Pin 7
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- <a> If you find a problem with the wiring, do these steps:
- Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - Re-connect connector DM78001B on the left engine, power pack, M78001.
 - Do the Repair Confirmation procedure at the end of this task.

- <5> Do a check for continuity through the left fan cowl switch, S78003 between these pins for connector DS78003 (WDM 78-31-11).

S78003 DS78003 Pin 7	S78003 DS78003 Pin 9
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- <a> If there is no continuity through the switch, replace the left fan cowl switch, S78003.
- Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <c> Re-connect connector DM78001B on the left engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.

- <6> Do a wiring check between the pins of the connector DS78003 for the left fan cowl switch, S78003 and connector DS78006 for the right T/R cowl switch, S78006 (WDM 78-31-11).

S78003 DS78003 Pin 9	S78006 DS78006 Pin 1
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- <a> If you find a problem with the wiring, do these steps:
- Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78003 on the left fan cowl switch, S78003.

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- III. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - IV. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - V. Re-connect connector DM78001B on the left engine, power pack, M78001.
 - VI. Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check for electrical power to the right T/R cowl switch, S78006 from the circuit breaker.
- 1) Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - 2) Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - 3) Re-connect connector DM78001B on the left engine, power pack, M78001.
 - 4) Disconnect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-11).
 - 5) Do a check for 28VDC on pin 6 of connector DS78006 for the right T/R cowl switch, S78006 (Pin 13 ground) (WDM 78-31-11).
 - 6) If 28VDC is not on pin 6 of connector DS78006, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector D32017P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-11).
 - b) Do a check for 28VDC on pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320.
 - c) If 28VDC is not on pin 21 of connector D32017P, do a wiring check between pin 21 of connector D32017P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78614 (WDM 78-31-11).
 - d) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-11).
 - <2> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <3> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
 - <4> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is on pin 21 of connector D32017P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32017P on the Ground Service/Handling Power Panel, P320.

P320	S78006
D32017P	DS78006
Pin 21	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-11).
 - Re-connect connector DS78006 on the right T/R cowl switch, S78006.

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- <c> Re-connect connector D32017P on the Ground Service/Handling Power Panel, P320.
- <d> Do the Repair Confirmation procedure at the end of this task.

G. Repair Confirmation

- (1) Do this task: Close the Thrust Reverser (Power Method), AMM TASK 78-31-00-410-802-H01.
 - (a) Make sure the thrust reverser closes smoothly.
- (2) Do this task: Open the Thrust Reverser (Power Method), AMM TASK 78-31-00-010-802-H01.
 - (a) Make sure the thrust reverser opens smoothly.
- (3) Do this task: Close the Thrust Reverser (Power Method), AMM TASK 78-31-00-410-802-H01.
 - (a) Make sure the thrust reverser closes smoothly.
- (4) Do this task: Forward Fairings Installation, AMM TASK 54-52-01-400-801-001.
- (5) Remove the engine strut shock absorbing lanyard personnel equipment, SPL-8818; do this task: Fall Arrest Lifeline Procedure, AMM TASK 54-52-00-910-804-001.

— END OF TASK —

801. Right Engine Thrust Reverser Does Not Open (Power Method)

A. Description

- (1) The left or right thrust reversers on the right engine do not open with the power method.
 - (a) This procedure has these paragraphs:
 - 1) Initial evaluation.
 - 2) A check of the oil quantity in the oil tank reservoir of the PDOS power pack.
 - 3) A visual check of the area around the PDOS installation, the tubes and flexhoses.
 - 4) A check for oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack.
 - 5) A check of the hydraulic cowl opening flexhoses for leakage.
 - 6) A check for oil leakage from the thrust reverser opening actuator.
 - 7) A check of the electrical control system for the left side and right side thrust reverser which has these steps:
 - a) A check of continuity through the T/R cowl switch.
 - b) A check of the control circuit between the T/R cowl switch and the COWL MTR relay.
 - c) A check of the control circuit between the T/R cowl switch and the solenoid valves in the power pack.
 - d) A check for electrical power to the T/R cowl switch from the circuit breaker.
 - e) A check of the electrical power to the motor in the power pack.
 - 8) Repair confirmation.

B. Possible Causes

- (1) Oil leakage from the quick disconnects, hoses or tubes.
- (2) Oil leakage from the opening actuator rod end seals or inlet port.
- (3) Oil leakage from the PDOS power pack solenoid valves, ports or oil tank.

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- (4) Missing electrical ground, broken wires or bent pins in the electrical connectors or broken insulation on the wire bundles or the control switches.
- (5) A circuit problem or a cowl door motor relay problem.
- (6) An internal mechanical or electrical problem in the PDOS power pack motor or solenoid valves.
- (7) No airplane electrical power to the PDOS power pack.
- (8) The oil tank on the PDOS power pack is not serviced.
- (9) No control signal from the control switches to the solenoid valves in the PDOS power pack.
- (10) Jammed T-bolt gearbox, cable or handle.

C. Circuit Breakers

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

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C78614	R ENG COWL DOOR MOTOR CONTROL
F	9	C78302	R ENG COWL DR MOT

D. Related Data

- (1) When the left thrust reverser cowl open switch is selected the PDOS left enable solenoid valve and the left select solenoid valve are energized. The motor is energized and moves the pump driveshaft to operate three pump piston assemblies. Low pressure fluid, from the reservoir goes through the inlet and the outlet check valves of the pump piston assemblies. This supplies high pressure fluid to the left thrust reverser cowl actuator connection.
- (2) When the right thrust reverser cowl open switch is selected the PDOS right enable solenoid valve and the right select solenoid valve are energized. The motor is energized and moves the pump driveshaft to operate three pump piston assemblies. Low pressure fluid, from the reservoir goes through the inlet and the outlet check valves of the pump piston assemblies. This supplies high pressure fluid to the left thrust reverser cowl actuator connection.
- (3) The WDM gives the nomenclature for the left or right select solenoid valves as L or R T-R/FAN SV. The WDM nomenclature for the left or right enable solenoid valves as L or R ENBL SV. The WDM nomenclature for the retract solenoid is RETR SV.
- (4) The switch control unit has two switches and a printed circuit board with diodes. A problem with the diodes can cause incorrect operation of the PDOS unit. The switch control unit is interchangeable and can be used to open the fan cowl panel or the thrust reverser. Only some of the circuits through the switch control unit are used to operate the fan cowl panels.

E. Initial Evaluation

- (1) Use the control switch on the engine fan case to open the applicable thrust reverser with the PDOS power pack.
 - (a) Do this task: Open the Thrust Reverser (Power Method), AMM TASK 78-31-00-010-802-H01.
 - (b) If the thrust reverser does not open with the control switch, continue with the procedure.

F. Fault Isolation Procedure

- (1) Make sure the T-bolt has turned to release the receiver on the upper bifurcation of the opposite thrust reverser half.
 - (a) Pull out and push in the T-handle to find if the operation of the push-pull cable, or the gear or bearings in the gearbox jam or bind.

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- (b) Look for cable backlash.
- (c) If the travel of the T-handle is not correct, adjust the T-bolt latch assembly.
 - 1) Do this task: Thrust Reverser Upper Bifurcation T-Hook Latch Receiver Adjustment, AMM TASK 78-31-20-820-802-H01.
- (d) If the T-bolt handle, cable or gearbox is jammed or there is cable backlash, replace the T-bolt latch assembly.
 - 1) Do this task: Thrust Reverser Upper Bifurcation T-Hook Latch, Gearbox, Cable and Handle Assembly Removal (Selections), AMM TASK 78-31-20-000-801-H01.
 - 2) Do this task: Thrust Reverser Upper Bifurcation T-Hook Latch, Gearbox, Cable and Handle Assembly Installation (Selections), AMM TASK 78-31-20-400-801-H01.
- (e) Do the Repair Confirmation procedure at the end of this task.



USE THE FALL ARREST LIFELINE PROCEDURE IF YOU DO NOT USE OTHER SAFETY EQUIPMENT. IF YOU USE THE SAFETY EQUIPMENT OR PROCEDURES INCORRECTLY, IT CAN CAUSE INJURY OR KILL YOU.

- (2) Use the engine strut shock absorbing lanyard personnel equipment, SPL-8818 when you work on or above the engine (AMM TASK 54-52-00-910-804-001).
- (3) Do this task: Forward Fairings Removal, AMM TASK 54-52-01-000-801-001.
- (4) Do a check of the oil quantity in the oil tank reservoir of the PDOS power pack.



DO NOT LET PDOS OIL LEAKAGE COLLECT. IF YOU DO NOT CLEAN THE AREA, DAMAGE CAN OCCUR FROM THE PDOS OIL.



IF YOU MUST ADD PDOS OIL TO THE PDOS PUMP, MAKE SURE THE FAN COWL PANELS AND THRUST REVERSERS ARE COMPLETELY CLOSED OR AN OVERFILL CONDITION COULD OCCUR.

- (a) If it is necessary, do this task: Fill the PDOS Pump with Oil, AMM TASK 12-12-02-610-803-004.
- (b) Do the Repair Confirmation procedure at the end of this task.



DO NOT LET PDOS OIL LEAKAGE COLLECT. IF YOU DO NOT CLEAN THE AREA, DAMAGE CAN OCCUR FROM THE PDOS OIL.

- (5) Look for oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack.
 - (a) If there is oil leakage from the solenoid valves, ports or oil tank on the PDOS power pack, replace the PDOS power pack.
 - 1) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - 2) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - (b) If there is oil leakage from the tubes, tighten the b-nuts on the tubes.
 - (c) Do the Repair Confirmation procedure at the end of this task.

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DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (6) Examine the area under the engine, fan cowl panels and thrust reverser for oil leakage.
 - (a) Look for oil leakage that could have come from the hoses or tubes for the PDOS power pack to the opening actuator for the fan cowl panel or the thrust reverser.
 - (b) Look for oil leakage that could have come from the opening actuator rod end or inlet port.
- (7) Do this task: Open the Fan Cowl Panel (Sling Method), AMM TASK 71-11-04-000-804-H01.
 - (a) As you open the fan cowl panel, look for these conditions.
 - 1) Look for oil leakage from the hoses or tubes.
 - a) If there is oil leakage from the tubes, tighten the b-nuts on the tubes or hoses.
 - 2) Look for oil leakage from the opening actuator rod end or inlet port.
 - 3) Look for broken wires or insulation on the wire bundles and the control switches.
 - a) Repair all wire problems.
 - 4) Look for a problem with the actuator attachment fitting on the strut.
 - a) Replace all broken fittings.

NOTE: Use the suppliers component repair procedures.
 - 5) Look for a problem with the actuator attachment fitting on the thrust reverser.
 - a) Replace all broken fittings.

NOTE: Use the suppliers component repair procedures.
- (8) Do this task: Open the Thrust Reverser (Sling Method), AMM TASK 78-31-00-010-804-H01.



DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (9) Examine the hydraulic cowl opening flexhoses for leakage.
 - (a) Do this task: Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01.
 - (b) If the cowl opening flexhose is damaged, replace the flexhose.
 - 1) Do this task: Hydraulic Cowl Opening Flexhoses Removal, AMM TASK 71-12-03-000-801-H01.
 - 2) Do this task: Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01.
 - 3) If there is oil leakage from the hose, tighten the b-nuts on the hose.
 - (c) Do the Repair Confirmation procedure at the end of this task.

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DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (10) If there is oil leakage from the thrust reverser opening actuator rod end or inlet port or the actuator is damaged, replace the thrust reverser opening actuator.

- (a) Do this task: Thrust Reverser Cowl Opening Actuators Removal, AMM TASK 71-12-02-000-804-H00.
- (b) Do this task: Thrust Reverser Cowl Opening Actuators Installation, AMM TASK 71-12-02-400-804-H00.
- (c) Use a cotton wiper, G00034 and remove all the oil leakage on the engine.
- (d) Do the Repair Confirmation procedure at the end of this task.

- (11) If the left side thrust reverser did not open, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the left T/R cowl switch, S78004:
 - 1) Disconnect connector DS78004 on the left T/R cowl switch, S78004.
 - 2) Push and hold the open button on the left T/R cowl switch, S78004.
 - 3) Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-12).

S78004	S78004
DS78004	DS78004
Pin 6	Pin 4
Pin 6	Pin 14
Pin 6	Pin 15

- a) If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
 - <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- b) Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the left T/R cowl switch, S78004 and the R ENG COWL MTR relay, K78205.
 - 1) Re-connect connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).
 - 2) Remove the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - 3) Do a check for ground on connector DK78205 pin X2.
 - a) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-12).

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- <2> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
- <3> Do the Repair Confirmation procedure at the end of this task.
- 4) Push and hold the open button on the left T/R cowl switch, S78004.
- 5) Do a check for 28VDC on the R ENG COWL MTR relay, K78205 connector DK78205 pin X1.
- 6) If 28VDC is not on connector DK78205 pin X1, do these steps:
 - a) Disconnect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - b) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 11	Pin 14
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
- <3> Do the Repair Confirmation procedure at the end of this task.
- c) Do a wiring check between the right T/R cowl switch, S78006 and the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.

S78006	K78205
DS78006	DK78205
Pin 14	Pin X1

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <c> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- d) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-12).

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S78005 DS78005 Pin 11 Pin 6	S78005 DS78005 Pin 14 Pin 8
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- <1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <3> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <4> Do the Repair Confirmation procedure at the end of this task.
- e) Do a wiring check between the right T/R cowl switch, S78006 and the right fan cowl switch, S78005 (WDM 78-31-12).

S78006 DS78006 Pin 11	S78005 DS78005 Pin 14
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- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).
 - <c> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <d> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- f) Do a wiring check between the left T/R cowl switch, S78004 and the right fan cowl switch, S78005 (WDM 78-31-12).

S78004 DS78004 Pin 11	S78005 DS78005 Pin 14
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- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect the connector DS78004 on the left fan cowl switch, S78004 (WDM 78-31-12).
 - <c> Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).

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- <d> Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - <e> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check of the control circuit between the left T/R cowl switch, S78004 and the solenoid valves in the right engine power pack, M78001 (WDM 78-31-12).

NOTE: These steps do a check of the circuit to the left enable solenoid and the left select solenoid.

- 1) Re-connect the connector DS78005 on the right fan cowl switch, S78005 (WDM 78-31-12).
- 2) Re-connect the connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
- 3) Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
- 4) Disconnect connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).
- 5) Do a check for 28VDC on connector DM78001B pins 1 and 2 on the right engine, power pack, M78001.
 - a) Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - b) Disconnect connector DM78001B on the right engine, power pack, M78001 (WDM 78-31-12).
 - c) Push and hold the open button on the left T/R cowl switch, S78004.
 - d) If 28VDC is not on connector DM78001B pins 1 and 2, do a wiring check between these pins for connector DS78004 for the left T/R cowl switch, S78004 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

M78001	S78004
DM78001B	DS78004
Pin 2	Pin 4
Pin 1	Pin 15

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DM78001B on the right engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- (d) Do a check for electrical power to the left T/R cowl switch, S78004 from the circuit breaker (WDM 78-31-12).
- 1) Re-connect connector DM78001B on the right engine, power pack, M78001.
 - 2) Disconnect connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).

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- 3) Do a check for 28VDC on pin 6 of connector DS78004 for the left T/R cowl switch, S78004 (Pin 13 ground) (WDM 78-31-12).
- 4) If 28VDC is not on pin 6 of connector DS78004, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect connector D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - c) Do a check for 28VDC on pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320.
 - d) If 28VDC is not on pin 9 of connector D32011P, do a wiring check between pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78614 (WDM 78-31-12).
 - <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is on pin 9 of connector D32011P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).

P320	S78006
D32011P	DS78006
Pin 9	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

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- <1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <2> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <3> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <4> Do the Repair Confirmation procedure at the end of this task.
- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78006	S78005
DS78006	DS78005
Pin 8	Pin 6

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <d> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <e> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
- h) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-12).

S78005	S78005
DS78005	DS78005
Pin 6	Pin 8

- <1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
 - <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <3> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <4> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.

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<5> Do the Repair Confirmation procedure at the end of this task.

- i) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78004	S78005
DS78004	DS78005
Pin 6	Pin 8

<1> If you find a problem with the wiring, do these steps:

<a> Repair the wiring (WDM 78-31-12).

 Re-connect connector DS78004 on the left T/R cowl switch, S78004.

<c> Re-connect connector DS78005 on the right fan cowl switch, S78005.

<d> Re-connect connector DS78006 on the right T/R cowl switch, S78006.

<e> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.

<f> Do the Repair Confirmation procedure at the end of this task.

- (e) Do a check of the electrical power to the motor in the right engine, power pack, M78001 (WDM 78-31-12).

- 1) Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- 2) Re-connect connector DS78005 on the right fan cowl switch, S78005.
- 3) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- 4) Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
- 5) Disconnect connector DM78001A on the right engine, power pack, M78001 (WDM 78-31-12).
- 6) Do a check for 115VAC on connector DM78001A pins 1, 2, and 3 (pin 4 gnd, pin 5 case gnd) on the power pack, M78001.
- 7) If 115VAC is present, replace the right engine, power pack, M78001.
 - a) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - b) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - c) Do the Repair Confirmation procedure at the end of this task.
- 8) If 115VAC is not present, do a check of the circuit between the right engine, power pack, M78001 and the R ENG COWL MTR relay, K78205.
 - a) Remove the R ENG COWL MTR relay, K78205 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - b) Do a wiring check between the pins for connector DK78205 for the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 and the connector DM78001A on the right engine, power pack, M78001 (pin 4 ground) (WDM 78-31-12).

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K78205	M78001
DK78205	DM78001A
Pin A1	Pin 1
Pin B1	Pin 2
Pin C1	Pin 3

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <c> Re-connect connector DM78001A on the right engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- 9) Do a check of the electrical power circuit from the circuit breaker to the R ENG COWL MTR relay, K78205 (WDM 78-31-12).
- a) Re-connect connector DM78001A on the right engine, power pack, M78001.
 - b) Do a check for 115VAC on connector DK78205 pins A2, B2 and C2 for the R ENG COWL MTR relay, K78205 (WDM 78-31-12).
 - c) If 115VAC is not on the pins for connector DK78205, do a wiring check between these pins of connector DK78205 for the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78302 (WDM 78-31-12):

K78205	C78302
DK78205	C78302
Pin A2	Pin A2
Pin B2	Pin B2
Pin C2	Pin C2

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <c> Do the Repair Confirmation procedure at the end of this task.
- <2> If you do not find a problem with the wiring, replace the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
- <a> Do the Repair Confirmation procedure at the end of this task.
- (12) If the right side thrust reverser did not open, do a check of the electrical control system.
- NOTE:** The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.
- (a) Do a check of the right T/R cowl switch, S78006:
- 1) Disconnect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - 2) Push and hold the open button on the right T/R cowl switch, S78006.

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- 3) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 4
Pin 6	Pin 14
Pin 6	Pin 15

- a) If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - <3> Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the right T/R cowl switch, S78006 and the R ENG COWL MTR relay, K78205.
- 1) Re-connect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - 2) Remove the R ENG COWL MTR relay, K78205 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - 3) Do a check for ground on connector DK78205 pin X2.
 - a) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-12).
 - <2> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <3> Do the Repair Confirmation procedure at the end of this task.
 - 4) Push and hold the open button on the right T/R cowl switch, S78006.
 - 5) Do a check for 28VDC on connector DK78205 pin X1 (Pin X2 gnd).
 - 6) If 28VDC is on connector DK78205 pin X1, replace the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - a) Do the Repair Confirmation procedure at the end of this task.
 - 7) If 28VDC is not on connector DK78205 pin X1, do a wire check between the R ENG COWL MTR relay, K78205 and the right T/R cowl switch, S78006.

S78006	K78205
DS78006	DK78205
Pin 14	Pin X1

- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).

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<c> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.

<d> Do the Repair Confirmation procedure at the end of this task.

- (c) Do a check of the control circuit between the right T/R cowl switch, S78006 and the solenoid valves in the right engine power pack, M78001.

NOTE: These steps do a check of the circuit to the right enable solenoid and the right select solenoid.

- 1) Disconnect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
- 2) Do a check for the electrical signal from the right T/R cowl switch, S78006 to the solenoid valves on the right engine power pack, M78001.
 - a) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect connector DM78001B on the right engine, power pack, M78001 (WDM 78-31-12).
 - c) Push and hold the open button on the right T/R cowl switch, S78006.
 - d) Do a check for 28VDC on connector DM78001B pins 3 and 4 on the right engine, power pack, M78001.
 - e) If 28VDC is not on connector DM78001B pins 3 and 4, do a wiring check between these pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

M78001	S78006
DM78001B	DS78006
Pin 4	Pin 4
Pin 3	Pin 15

<1> If you find a problem with the wiring, do these steps:

<a> Repair the wiring (WDM 78-31-12).

 Re-connect connector DS78006 on the right T/R cowl switch, S78006.

<c> Re-connect connector DM78001B on the right engine, power pack, M78001.

<d> Do the Repair Confirmation procedure at the end of this task.

- (d) Do a check for electrical power to the right T/R cowl switch, S78006 from the circuit breaker.

- 1) Re-connect connector DM78001B on the right engine, power pack, M78001.
- 2) Disconnect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
- 3) Do a check for 28VDC on pin 6 of connector DS78006 for the right T/R cowl switch, S78006 (Pin 13 ground) (WDM 78-31-12).
- 4) If 28VDC is not on pin 6 of connector DS78006, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).

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- b) Do a check for 28VDC on pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320.
- c) If 28VDC is not on pin 9 of connector D32011P, do a wiring check between pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78614 (WDM 78-31-12).
- d) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-12).
 - <2> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <3> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <4> Do the Repair Confirmation procedure at the end of this task.
- e) If 28VDC is on pin 9 of connector D32011P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32011P on the Ground Service/Handling Power Panel, P320.

P320**D32011P**

Pin 9

S78006**DS78006**

Pin 6

- <1> If you find a problem with the wiring, then do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <c> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.
- (e) Do a check of the electrical power to the motor in the right engine, power pack, M78001.
 - 1) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - 2) Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - 3) Disconnect connector DM78001A on the right engine, power pack, M78001 (WDM 78-31-12).
 - 4) Do a check for 115VAC on connector DM78001A pins 1, 2, and 3 (pin 4 gnd, pin 5 case gnd) on the power pack, M78001.
 - 5) If 115VAC is present, replace the right engine, power pack, M78001.
 - a) Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - b) Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - c) Do the Repair Confirmation procedure at the end of this task.
 - 6) If 115VAC is not present, do a check of the circuit between the right engine, power pack, M78001 and the R ENG COWL MTR relay, K78205.
 - a) Remove the R ENG COWL MTR relay, K78205 on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).

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- b) Do a wiring check between the pins for connector DK78205 for the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 and the connector DM78001A on the right engine, power pack, M78001 (Pin 4 ground) (WDM 78-31-12).

K78205	M78001
DK78205	DM78001A
Pin A1	Pin 1
Pin B1	Pin 2
Pin C1	Pin 3

- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DM78001A on the right engine, power pack, M78001.
 - <c> Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <d> Do the Repair Confirmation procedure at the end of this task.

- 7) Do a check of the electrical power circuit from the circuit breaker to the R ENG COWL MTR relay, K78205.
- a) Re-connect connector DM78001A on the right engine, power pack, M78001.
 - b) Do a check for 115VAC on connector DK78205 pins A2, B2 and C2 for the R ENG COWL MTR relay, K78205 (WDM 78-31-12).
 - c) If 115VAC is not on the pins for connector DK78205, do a wiring check between these pins of connector DK78205 for the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78302 (WDM 78-31-12):

K78205	C78302
DK78205	C78302
Pin A2	Pin A2
Pin B2	Pin B2
Pin C2	Pin C2

- <1> If you find a problem with the wiring, do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Install the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320.
 - <c> Do the Repair Confirmation procedure at the end of this task.
- <2> If you do not find a problem with the wiring, replace the R ENG COWL MTR relay, K78205, on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
- <a> Do the Repair Confirmation procedure at the end of this task.

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G. Repair Confirmation

- (1) Remove the sling from the thrust reverser.
 - (a) Refer to this task: Close the Thrust Reverser (Sling Method), AMM TASK 78-31-00-410-804-H01.
- (2) Remove the sling from the fan cowl panel.
 - (a) Refer to this task: Close the Fan Cowl Panel (Sling Method), AMM TASK 71-11-04-400-804-H01.
- (3) Do this task: Close the Thrust Reverser (Power Method), AMM TASK 78-31-00-410-802-H01.
 - (a) Make sure the thrust reverser closes smoothly.
- (4) Do this task: Open the Thrust Reverser (Power Method), AMM TASK 78-31-00-010-802-H01.
 - (a) Make sure the thrust reverser opens smoothly.
- (5) Do this task: Close the Thrust Reverser (Power Method), AMM TASK 78-31-00-410-802-H01.
 - (a) Make sure the thrust reverser closes smoothly.
- (6) Do this task: Forward Fairings Installation, AMM TASK 54-52-01-400-801-001
- (7) Remove the engine strut shock absorbing lanyard personnel equipment, SPL-8818, do this task: Fall Arrest Lifeline Procedure, AMM TASK 54-52-00-910-804-001.

————— **END OF TASK** —————

804. Right Engine Thrust Reverser Does Not Close (Power Method)

A. Description

- (1) The left or right thrust reversers on the right engine do not close with the power method.
 - (a) This procedure has these paragraphs:
 - 1) Initial evaluation.
 - 2) A visual check of the area around the PDOS installation, the tubes and flexhoses.
 - 3) Do a visual check on the PDOS hydraulic hose quick disconnect and make sure that the locking tang is fully engaged in the fitting groove (Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01, Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01).
 - 4) A check of the electrical control system for the left side and right side thrust reverser which has these steps:
 - a) A check of continuity through the T/R cowl switch.
 - b) A check of the control circuit between the T/R cowl switch and the solenoid valves in the power pack.
 - c) A check for electrical power to the T/R cowl switch from the circuit breaker.
 - 5) Repair confirmation.

B. Possible Causes

- (1) Missing electrical ground, broken wires or bent pins in the electrical connectors or broken insulation on the wire bundles or the control switches.
- (2) An internal mechanical or electrical problem in the PDOS solenoid valves.
- (3) No airplane electrical power to the PDOS control switches.
- (4) No control signal from the control switches to the solenoid valves in the PDOS power pack.

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C. Circuit Breakers

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

Ground Service/Handling Power Panel, P320

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C78614	R ENG COWL DOOR MOTOR CONTROL
F	9	C78302	R ENG COWL DR MOT

D. Related Data

- (1) When the left thrust reverser close switch is selected the PDOS retract solenoid valve and the right enable solenoid valve are energized. The left select solenoid valve is also energized. The retract solenoid valve and left select solenoid valve connect the thrust reverser opening actuator directly to the reservoir. The weight of the thrust reverser causes the opening actuator to retract and the thrust reverser to close. The rate that the thrust reverser closes is controlled by the flow control valve in the actuator. The right thrust reverser opening actuator does not retract because of the energized right enable solenoid valve.
- (2) When the right thrust reverser close switch is selected the PDOS retract solenoid valve and the left enable solenoid valve are energized. The right select solenoid valve is also energized. The retract solenoid valve and right select solenoid valve connect the thrust reverser opening actuator directly to the reservoir. The weight of the thrust reverser causes the opening actuator to retract and the thrust reverser to close. The rate that the thrust reverser closes is controlled by the flow control valve in the actuator. The left thrust reverser opening actuator does not retract because of the energized left enable solenoid valve.
- (3) The WDM gives the nomenclature for the left or right select solenoid valves as L or R T-R/FAN SV. The WDM nomenclature for the left or right enable solenoid valves as L or R ENBL SV. The WDM nomenclature for the retract solenoid is RETR SV.
- (4) The switch control unit has two switches and a printed circuit board with diodes. A problem with the diodes can cause incorrect operation of the PDOS unit. The switch control unit is interchangeable and can be used to open the fan cowl panel or the thrust reverser. Only some of the circuits through the switch control unit are used to operate the fan cowl panels.

E. Initial Evaluation

- (1) Use the control switch on the engine fan case to close the applicable thrust reverser with the PDOS power pack.
 - (a) Do this task: Close the Thrust Reverser (Power Method), AMM TASK 78-31-00-410-802-H01.
 - (b) If the thrust reverser does not close with the control switch, continue with the procedure.

F. Fault Isolation Procedure



USE THE FALL ARREST LIFELINE PROCEDURE IF YOU DO NOT USE OTHER SAFETY EQUIPMENT. IF YOU USE THE SAFETY EQUIPMENT OR PROCEDURES INCORRECTLY, IT CAN CAUSE INJURY OR KILL YOU.

- (1) Use the engine strut shock absorbing lanyard personnel equipment, SPL-8818 when you work on or above the engine (AMM TASK 54-52-00-910-804-001).
- (2) Do this task: Forward Fairings Removal, AMM TASK 54-52-01-000-801-001.

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DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

- (3) Look at the PDOS power pack installation to the opening actuator for the fan cowl panel or the thrust reverser.
 - (a) If it is necessary, do a visual check on the PDOS hydraulic hose quick disconnect and make sure that the locking tang is fully engaged in the fitting groove (Hydraulic Cowl Opening Flexhose Inspection, AMM TASK 71-12-03-200-801-H01, Hydraulic Cowl Opening Flexhoses Installation, AMM TASK 71-12-03-400-801-H01).
 - 1) If the locking tang is not fully engaged in the fitting groove or becomes loose, re-connect the locking tang in the fitting groove.
 - (b) Look for broken wires or insulation on the wire bundles and the control switches on the engine inlet frame or electrical connectors that are disconnected.
 - 1) Repair all wire problems.
 - (c) Look for oil leakage that could have come from the hoses or tubes for the PDOS power pack to the opening actuator for the fan cowl panel or the thrust reverser.
 - 1) If there is oil leakage from the tubes, tighten the b-nuts on the tubes or hoses.
 - (d) Use a cotton wiper, G00034 and remove all the oil leakage on the engine.
- (4) If the left side thrust reverser did not close, do a check of the electrical control system.

NOTE: The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.

- (a) Do a check of the left T/R cowl switch, S78004:
 - 1) Disconnect connector DS78004 on the left T/R cowl switch, S78004.
 - 2) Push and hold the close button on the left T/R cowl switch, S78004.
 - 3) Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-12).

S78004	S78004
DS78004	DS78004
Pin 6	Pin 3
Pin 6	Pin 1
Pin 6	Pin 4

- a) If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
 - <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - <2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- b) Do the Repair Confirmation procedure at the end of this task.
- (b) Do a check of the control circuit between the left T/R cowl switch, S78004 and the solenoid valves in the right engine, power pack, M78001 (WDM 78-31-12).

NOTE: These steps do a check of the circuit to the left select solenoid, the right enable solenoid and the retract solenoid.

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- 1) Do a check for 28VDC on connector DM78001B pins 2, 3 and 5 on the right engine, power pack, M78001.
 - a) Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - b) Disconnect connector DM78001B on the right engine, power pack, M78001 (WDM 78-31-12).
 - c) Push and hold the close button on the left T/R cowl switch, S78004.
 - d) If 28VDC is on connector DM78001B pin 2, 3 and 5, replace the right engine, power pack, M78001.
 - <1> Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.
 - <2> Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.
 - <3> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is not on connector DM78001B pin 2, do a wiring check between the pins for connector DS78004 for the left T/R cowl switch, S78004 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

NOTE: These steps do a check of the separate circuit to the left select solenoid.

M78001 DM78001B Pin 2	S78004 DS78004 Pin 4
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- <1> If you find a problem with the wiring, then do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DM78001B on the right engine, power pack, M78001.
 - <d> Do the Repair Confirmation procedure at the end of this task.

- f) If 28VDC is not on connector DM78001B pin 5, do these steps:

NOTE: These steps do a check of the separate circuit to the retract solenoid.

- <1> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <2> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

M78001 DM78001B Pin 5	S78006 DS78006 Pin 3
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- <a> If you find a problem with the wiring, then do these steps:
 - I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.

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- III. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.
- <3> Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 3	Pin 2

- <a> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
 - Re-connect connector DM78001B on the right engine, power pack, M78001.
 - <c> Do the Repair Confirmation procedure at the end of this task.
- <4> Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78006	S78005
DS78006	DS78005
Pin 2	Pin 3

- <a> If you find a problem with the wiring, do these steps:
 - I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - III. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - IV. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - V. Do the Repair Confirmation procedure at the end of this task.
- <5> Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-12).

S78005	S78005
DS78005	DS78005
Pin 3	Pin 2

- <a> If there is no continuity through the switch, replace the right fan cowl switch, S78005.

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- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <c> Re-connect connector DM78001B on the right engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.
- <6> Do a wiring check between the pins of the connector DS78005 for the right fan cowl switch, S78005 and connector DS78004 for the left T/R cowl switch, S78004 (WDM 78-31-12).

S78005 DS78005 Pin 2	S78006 DS78006 Pin 3
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- <a> If you find a problem with the wiring, do these steps:
- I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - III. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - IV. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - V. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - VI. Do the Repair Confirmation procedure at the end of this task.

- g) If 28VDC is not on connector DM78001B pin 3, do these steps:

NOTE: These steps do a check of the separate circuit to the right enable solenoid.

- <1> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <2> Re-connect connector DS78005 on the right fan cowl switch, S78005.
- <3> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

M78001 DM78001B Pin 3	S78006 DS78006 Pin 15
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- <a> If you find a problem with the wiring, then do these steps:
- I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.

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- III. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.
- <4> Do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 5	Pin 7

- <a> If you find a problem with the wiring, then do these steps:
- I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - III. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - IV. Do the Repair Confirmation procedure at the end of this task.
- <5> Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 15	Pin 5
Pin 7	Pin 9

- <a> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DM78001B on the right engine, power pack, M78001.
- <c> Do the Repair Confirmation procedure at the end of this task.
- <6> Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78006	S78005
DS78006	DS78005
Pin 9	Pin 7

- <a> If you find a problem with the wiring, do these steps:
- I. Repair the wiring (WDM 78-31-12).

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- II. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - III. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - IV. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - V. Do the Repair Confirmation procedure at the end of this task.
- <7> Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-12).

S78005
DS78005
Pin 7

S78005
DS78005
Pin 9

- <a> If there is no continuity through the switch, replace the right fan cowl switch, S78005.
- I. Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - II. Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <c> Re-connect connector DM78001B on the right engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.
- <8> Do a wiring check between the pins of the connector DS78005 for the right fan cowl switch, S78005 and connector DS78004 for the left T/R cowl switch, S78004 (WDM 78-31-12).

S78005
DS78005
Pin 9

S78004
DS78004
Pin 1

- <a> If you find a problem with the wiring, do these steps:
- I. Repair the wiring (WDM 78-31-12).
 - II. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - III. Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - IV. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - V. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - VI. Do the Repair Confirmation procedure at the end of this task.

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- (c) Do a check for electrical power to the left T/R cowl switch, S78004 from the circuit breaker (WDM 78-31-12).
- 1) Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - 2) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - 3) Re-connect connector DM78001B on the right engine, power pack, M78001.
 - 4) Disconnect connector DS78004 on the left T/R cowl switch, S78004 (WDM 78-31-12).
 - 5) Do a check for 28VDC on pin 6 of connector DS78004 for the left T/R cowl switch, S78004 (Pin 13 ground) (WDM 78-31-12).
 - 6) If 28VDC is not on pin 6 of connector DS78004, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector DS78006 on the right T/R cowl switch, S78006.
 - b) Disconnect connector D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - c) Do a check for 28VDC on pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320.
 - d) If 28VDC is not on pin 9 of connector D32011P, do a wiring check between pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78613 (WDM 78-31-12).

<1> If you find a problem with the wiring, do these steps:

 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <e> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is on pin 9 of connector D32011P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).

P320	S78006
D32011P	DS78006
Pin 9	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <d> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.

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<e> Do the Repair Confirmation procedure at the end of this task.

- f) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 8

<1> If there is no continuity through the switch, replace the right T/R cowl switch, S78006.

<a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

 Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

<2> Re-connect connector DS78004 on the left T/R cowl switch, S78004.

<3> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.

<4> Do the Repair Confirmation procedure at the end of this task.

- g) Do a wiring check between the pins of the connector DS78006 for the right T/R cowl switch, S78006 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78006	S78005
DS78006	DS78005
Pin 8	Pin 6

<1> If you find a problem with the wiring, do these steps:

<a> Repair the wiring (WDM 78-31-12).

 Re-connect connector DS78004 on the left T/R cowl switch, S78004.

<c> Re-connect connector DS78005 on the right fan cowl switch, S78005.

<d> Re-connect connector DS78006 on the right T/R cowl switch, S78006.

<e> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.

<f> Do the Repair Confirmation procedure at the end of this task.

- h) Do a check for continuity through the right fan cowl switch, S78005 between these pins for connector DS78005 (WDM 78-31-12).

S78005	S78005
DS78005	DS78005
Pin 6	Pin 8

<1> If there is no continuity through the switch, replace the right fan cowl switch, S78005.

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- <a> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
- Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- <2> Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <3> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <4> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
- <5> Do the Repair Confirmation procedure at the end of this task.
- i) Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78005 for the right fan cowl switch, S78005 (WDM 78-31-12).

S78004	S78005
DS78004	DS78005
Pin 6	Pin 8

- <1> If you find a problem with the wiring, do these steps:
 - <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - <c> Re-connect connector DS78005 on the right fan cowl switch, S78005.
 - <d> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <e> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <f> Do the Repair Confirmation procedure at the end of this task.
 - (5) If the right side thrust reverser did not close, do a check of the electrical control system.
- NOTE:** The electrical power for the control circuit begins at one control switch and then goes through the other control switches in series.
- (a) Do a check of the right T/R cowl switch, S78006:
 - 1) Push and hold the open button on the right T/R cowl switch, S78006.
 - 2) Do a check for continuity through the right T/R cowl switch, S78006 between these pins for connector DS78006 (WDM 78-31-12).

S78006	S78006
DS78006	DS78006
Pin 6	Pin 3
Pin 6	Pin 1
Pin 6	Pin 4

- a) If there is no continuity through the switch, replace the right T/R cowl switch, S78006.
 - <1> Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.

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<2> Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

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

- (b) Do a check of the control circuit between the right T/R cowl switch, S78006 and the solenoid valves in the right engine, power pack, M78001 (WDM 78-31-12).

NOTE: These steps do a check of the circuit to the left enable solenoid, the right select solenoid and the retract solenoid.

- 1) Do a check for 28VDC on connector DM78001B pins 1, 4 and 5 on the right engine, power pack, M78001.

- a) Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- b) Disconnect connector DM78001B on the right engine, power pack, M78001 (WDM 78-31-12).
- c) Push and hold the close button on the right T/R cowl switch, S78006.
- d) If 28VDC is on connector DM78001B pin 1, 4 and 5, replace the right engine, power pack, M78001.

<1> Do this task: PDOS Pump Removal, AMM TASK 71-12-04-000-801-H01.

<2> Do this task: PDOS Pump Installation, AMM TASK 71-12-04-400-801-H01.

<3> Do the Repair Confirmation procedure at the end of this task.

- e) If 28VDC is not on connector DM78001B pin 4, and 5, do a wiring check between the pins for connector DS78006 for the right T/R cowl switch, S78006 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

NOTE: These steps do a check of the circuits to the right select solenoid and retract solenoid.

M78001	S78006
DM78001B	DS78006
Pin 4	Pin 4
Pin 5	Pin 3

<1> If you find a problem with the wiring, then do these steps:

- <a> Repair the wiring (WDM 78-31-12).
- Re-connect connector DS78006 on the right T/R cowl switch, S78006.
- <c> Re-connect connector DM78001B on the right engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.

- f) If 28VDC is not on connector DM78001B pin 1, do these steps:

NOTE: These steps do a check of the separate circuit to the left enable solenoid.

<1> Do a wiring check between the pins for connector DS78004 for the left T/R cowl switch, S78004 and the connector DM78001B on the right engine, power pack, M78001 (Pin 6 ground) (WDM 78-31-12).

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M78001 DM78001B Pin 1 Pin 15	S78004 DS78004 Pin 15 Pin 15
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- <a> If you find a problem with the wiring, then do these steps:
- Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - Re-connect connector DM78001B on the right engine, power pack, M78001.
 - Do the Repair Confirmation procedure at the end of this task.

<2> Do a check for continuity through the left T/R cowl switch, S78004 between these pins for connector DS78004 (WDM 78-31-12).

S78004 DS78004 Pin 15 Pin 5 Pin 7 Pin 9	S78004 DS78004 Pin 5 Pin 5 Pin 9 Pin 9
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- <a> If there is no continuity through the switch, replace the left T/R cowl switch, S78004.
- Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.

 Re-connect connector DM78001B on the right engine, power pack, M78001.

<c> Do the Repair Confirmation procedure at the end of this task.

<3> Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 (WDM 78-31-12).

S78004 DS78004 Pin 5 Pin 7	S78004 DS78004 Pin 7 Pin 7
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- <a> If you find a problem with the wiring, do these steps:
- Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - Re-connect connector DM78001B on the right engine, power pack, M78001.
 - Do the Repair Confirmation procedure at the end of this task.

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- <4> Do a wiring check between the pins of the connector DS78004 for the left T/R cowl switch, S78004 and connector DS78003 for the left fan cowl switch, S78003 (WDM 78-31-12).

S78004 DS78004 Pin 9	S78003 DS78003 Pin 7
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- <a> If you find a problem with the wiring, do these steps:
- Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - Re-connect connector DM78001B on the right engine, power pack, M78001.
 - Do the Repair Confirmation procedure at the end of this task.

- <5> Do a check for continuity through the left fan cowl switch, S78003 between these pins for connector DS78003 (WDM 78-31-12).

S78003 DS78003 Pin 7	S78003 DS78003 Pin 9
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- <a> If there is no continuity through the switch, replace the left fan cowl switch, S78003.
- Do this task: Actuation and Control Switches Removal, AMM TASK 71-12-06-000-801-H01.
 - Do this task: Actuation and Control Switches Installation, AMM TASK 71-12-06-400-801-H01.
- Re-connect connector DS78004 on the left T/R cowl switch, S78004.
- <c> Re-connect connector DM78001B on the right engine, power pack, M78001.
- <d> Do the Repair Confirmation procedure at the end of this task.

- <6> Do a wiring check between the pins of the connector DS78003 for the left fan cowl switch, S78003 and connector DS78006 for the right T/R cowl switch, S78006 (WDM 78-31-12).

S78003 DS78003 Pin 9	S78006 DS78006 Pin 1
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- <a> If you find a problem with the wiring, do these steps:
- Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78003 on the left fan cowl switch, S78003.

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- III. Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - IV. Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - V. Re-connect connector DM78001B on the right engine, power pack, M78001.
 - VI. Do the Repair Confirmation procedure at the end of this task.
- (c) Do a check for electrical power to the right T/R cowl switch, S78006 from the circuit breaker.
- 1) Re-connect connector DS78003 on the left fan cowl switch, S78003.
 - 2) Re-connect connector DS78004 on the left T/R cowl switch, S78004.
 - 3) Re-connect connector DM78001B on the right engine, power pack, M78001.
 - 4) Disconnect connector DS78006 on the right T/R cowl switch, S78006 (WDM 78-31-12).
 - 5) Do a check for 28VDC on pin 6 of connector DS78006 for the right T/R cowl switch, S78006 (Pin 13 ground) (WDM 78-31-12).
 - 6) If 28VDC is not on pin 6 of connector DS78006, do a check for electrical power from the circuit breaker.
 - a) Disconnect connector D32011P on the Ground Service/Handling Power Panel, P320 (WDM 78-31-12).
 - b) Do a check for 28VDC on pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320.
 - c) If 28VDC is not on pin 9 of connector D32011P, do a wiring check between pin 9 of connector D32011P at the Ground Service/Handling Power Panel, P320 and the circuit breaker, C78614 (WDM 78-31-12).
 - d) If you find a problem with the wiring, do these steps:
 - <1> Repair the wiring (WDM 78-31-12).
 - <2> Re-connect connector DS78006 on the right T/R cowl switch, S78006.
 - <3> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
 - <4> Do the Repair Confirmation procedure at the end of this task.
 - e) If 28VDC is on pin 9 of connector D32011P, do a wiring check between these pins of connector DS78006 on the right T/R cowl switch, S78006 and D32011P on the Ground Service/Handling Power Panel, P320.

P320	S78006
D32011P	DS78006
Pin 9	Pin 6

- <1> If you find a problem with the wiring, then do these steps:
- <a> Repair the wiring (WDM 78-31-12).
 - Re-connect connector DS78006 on the right T/R cowl switch, S78006.

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- <c> Re-connect connector D32011P on the Ground Service/Handling Power Panel, P320.
- <d> Do the Repair Confirmation procedure at the end of this task.

G. Repair Confirmation

- (1) Do this task: Close the Thrust Reverser (Power Method), AMM TASK 78-31-00-410-802-H01.
 - (a) Make sure the thrust reverser closes smoothly.
- (2) Do this task: Open the Thrust Reverser (Power Method), AMM TASK 78-31-00-010-802-H01.
 - (a) Make sure the thrust reverser opens smoothly.
- (3) Do this task: Close the Thrust Reverser (Power Method), AMM TASK 78-31-00-410-802-H01.
 - (a) Make sure the thrust reverser closes smoothly.
- (4) Do this task: Forward Fairings Installation, AMM TASK 54-52-01-400-801-001.
- (5) Remove the engine strut shock absorbing lanyard personnel equipment, SPL-8818; do this task: Fall Arrest Lifeline Procedure, AMM TASK 54-52-00-910-804-001.

————— **END OF TASK** —————

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- (1) Find the fault code to the right of the fault description in the Observed Faults List (at the front of the FIM).
 - (a) The first two digits of the fault code are the FIM chapter that you need. Go to the Fault Code Index in that chapter and find the fault code.
 - (b) Find the maintenance message to the right of the fault code.
 - (c) Find the task number on the same line as the maintenance message number.
 - (d) Go to the task in the FIM and do the steps in the task.

———— **END OF TASK** ————

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