CHAPTER

27

FLIGHT CONTROLS

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FLIGHT CONTROLS

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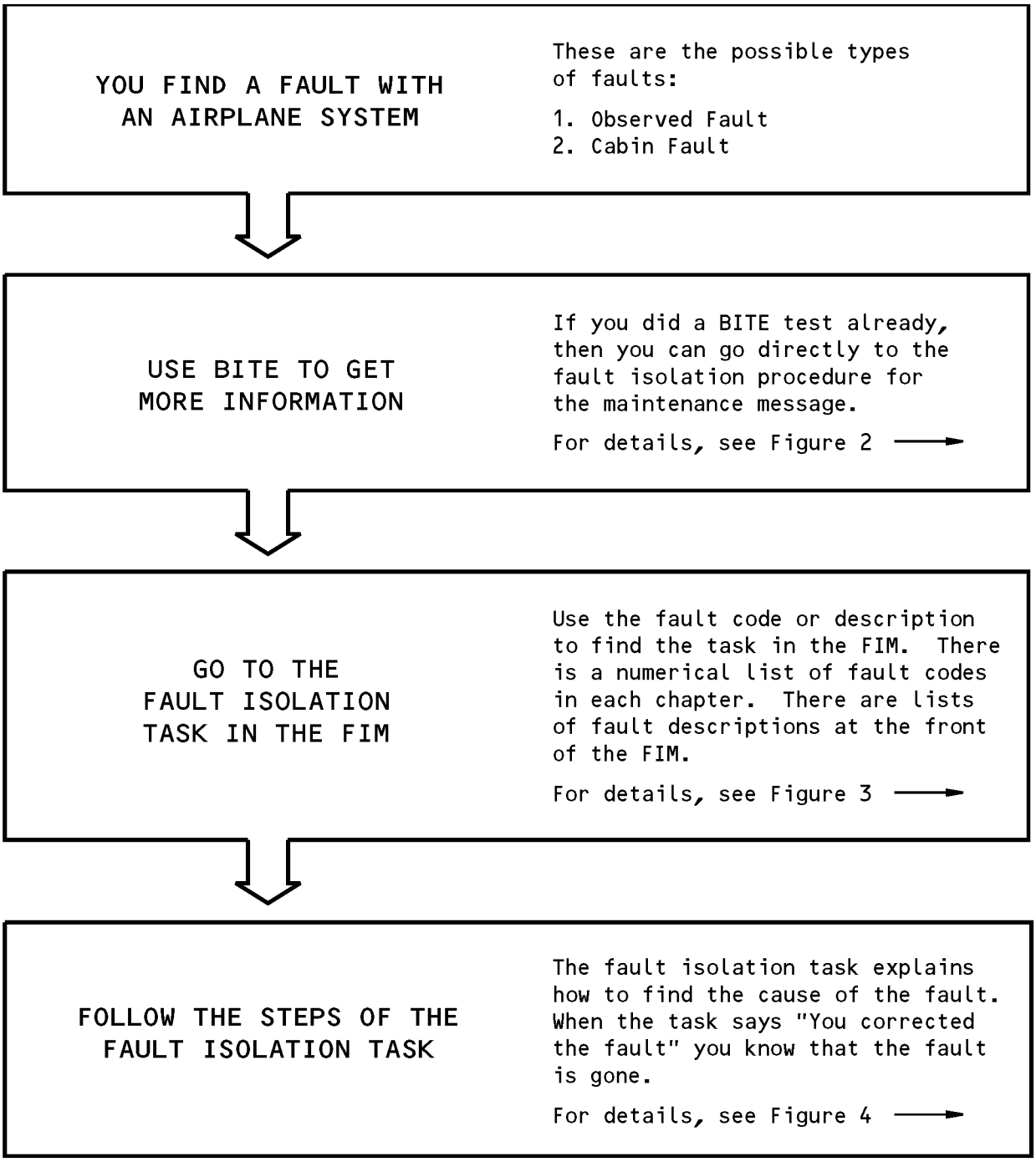

Basic Fault Isolation Process
Figure 1

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

A maintenance message can be any of these:

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

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

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

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

Getting Fault Information from BITE
Figure 2

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

Finding the Fault Isolation Task in the FIM
Figure 3

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ASSUMED CONDITIONS AT START OF TASK

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

POSSIBLE CAUSES

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

INITIAL EVALUATION PARAGRAPH

- The primary purpose of the Initial Evaluation paragraph at the start of the task is to help you find out if you can detect the fault right now:
  - If you cannot detect the fault right now, then the task cannot isolate the fault and the Initial Evaluation paragraph will say that there was an intermittent fault.
  - If you have an intermittent fault, you must use your judgement (and follow your airline's policy) to decide which maintenance action to take. Then monitor the airplane to see if the fault happens again on subsequent flights.
- The Initial Evaluation paragraph can also help you find out which Fault Isolation Procedure to use to isolate and correct the fault.

FAULT ISOLATION STEPS

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

Doing the Fault Isolation Task
Figure 4

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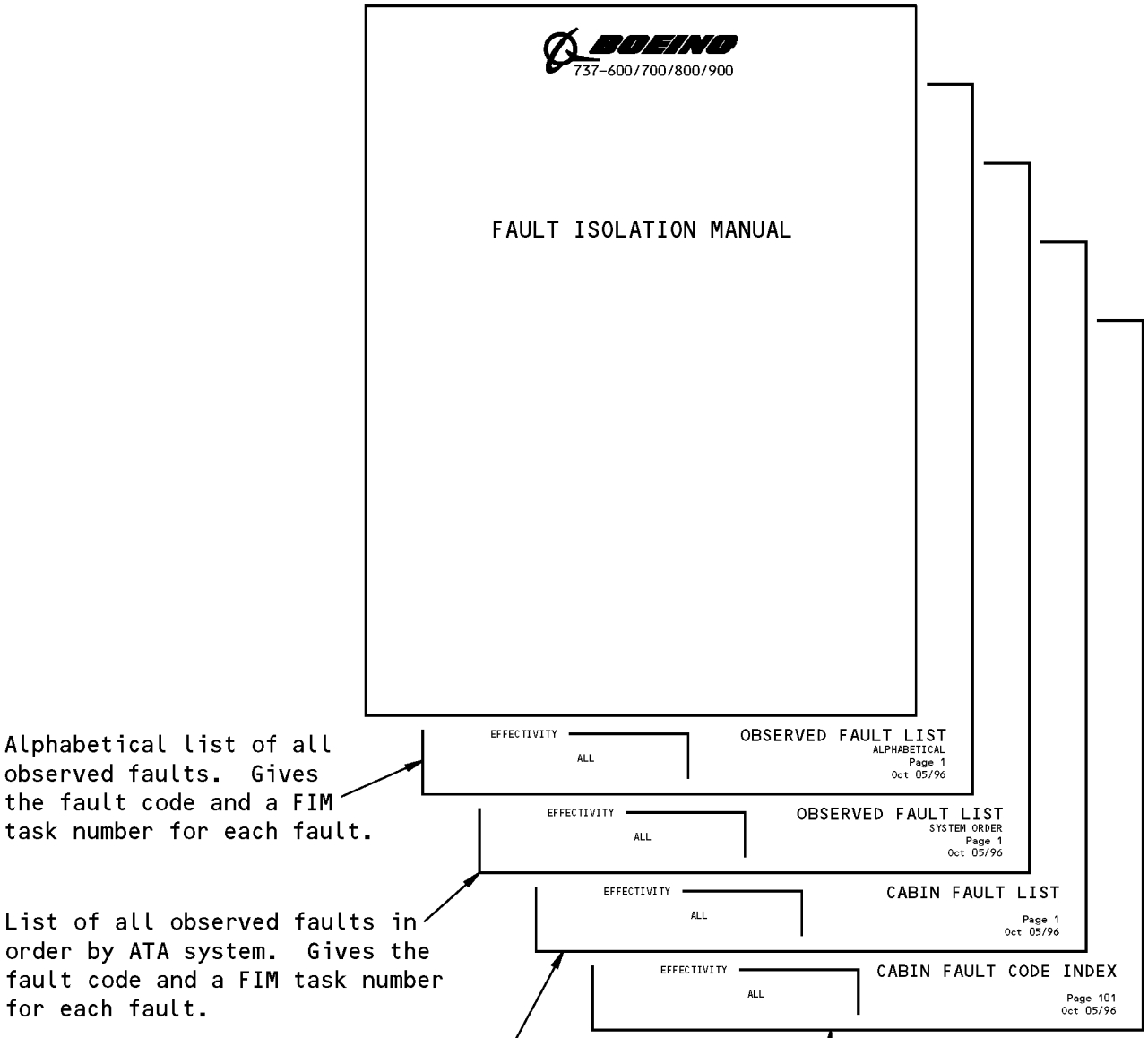

Subjects at Front of FIM
Figure 5

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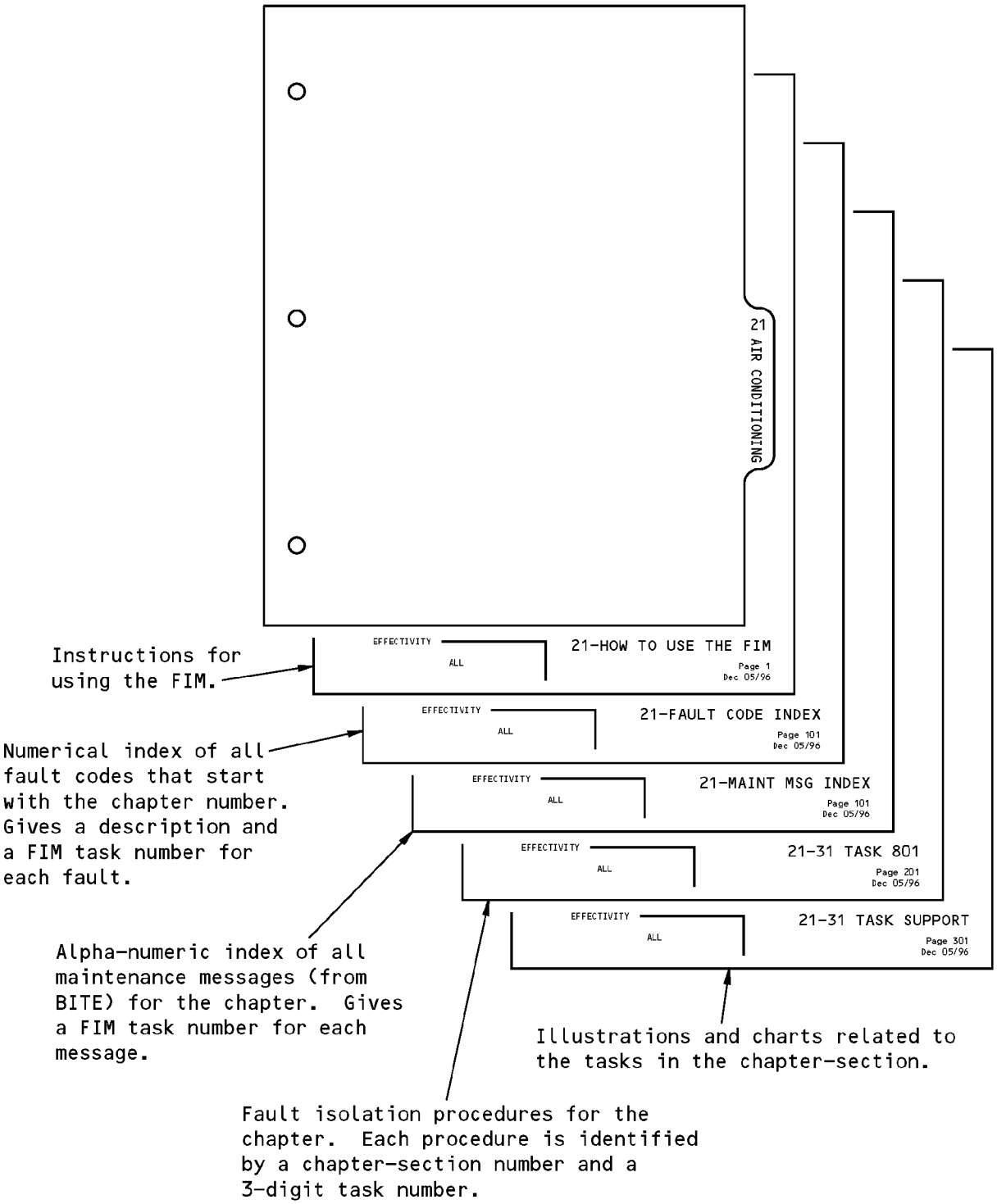

Subjects in Each FIM Chapter
Figure 6

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FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
270 010 00	FLT CONTROL A LOW PRESSURE light: light on.	27-21 TASK 813
270 020 00	FLT CONTROL B LOW PRESSURE light: light on.	27-21 TASK 814
270 081 00	Flight control surface position indication: missing indication for one or more surfaces.	31-63 TASK 825
271 010 41	Aileron: does not move to full travel - left.	27-11 TASK 805
271 010 42	Aileron: does not move to full travel - right.	27-11 TASK 805
271 010 48	Aileron: does not move to full travel - left and right.	27-11 TASK 806
271 020 41	Aileron: does not operate - left.	27-11 TASK 807
271 020 42	Aileron: does not operate - right.	27-11 TASK 807
271 020 48	Aileron: does not operate - left and right.	27-11 TASK 812
271 030 31	Control wheel: does not move freely - captain's.	27-11 TASK 813
271 030 32	Control wheel: does not move freely - first officer's.	27-11 TASK 813
271 040 31	Control wheel: has too much play - captain's.	27-11 TASK 801
271 040 32	Control wheel: has too much play - first officer's.	27-11 TASK 801
271 040 48	Control wheel: has too much play - captain's and first officer's.	27-11 TASK 801
271 050 41	Wing down aileron trim: does not operate - left.	27-11 TASK 814
271 050 42	Wing down aileron trim: does not operate - right.	27-11 TASK 814
271 050 48	Wing down aileron trim: does not operate - left and right.	27-11 TASK 815
271 060 41	Aileron: does not go back to neutral - left.	27-11 TASK 803
271 060 42	Aileron: does not go back to neutral - right.	27-11 TASK 803
271 060 48	Aileron: does not go back to neutral - left and right.	27-11 TASK 802
271 070 31	Control wheel: high force, hydraulic power on - captain's.	27-11 TASK 804
271 070 32	Control wheel: high force, hydraulic power on - first officer's.	27-11 TASK 804
271 070 48	Control wheel: high force, hydraulic power on - captain's and first officer's.	27-11 TASK 804
271 080 31	Control wheel: high force, hydraulic power off - captain's.	27-11 TASK 809
271 080 32	Control wheel: high force, hydraulic power off - first officer's.	27-11 TASK 809
271 080 48	Control wheel: high force, hydraulic power off - captain's and first officer's.	27-11 TASK 809
271 090 31	Control wheel: light force in one or both directions - captain's.	27-11 TASK 811
271 090 32	Control wheel: light force in one or both directions - first officer's.	27-11 TASK 811
271 090 48	Control wheel: light force in one or both directions - captain's and first officer's.	27-11 TASK 811

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FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
271 100 31	Control wheel: does not stay in the center position from one direction - captain's.	27-11 TASK 810
271 100 32	Control wheel: does not stay in the center position from one direction - first officer's.	27-11 TASK 810
271 100 48	Control wheel: does not stay in the center position from one direction - captain's and first officer's.	27-11 TASK 810
271 110 00	Aileron: slow response to contol wheel movement, hydraulic power on.	27-11 TASK 808
271 120 00	Aileron: high trim.	27-11 TASK 816
272 010 41	Nose rudder trim: does not operate - left.	27-21 TASK 801
272 010 42	Nose rudder trim: does not operate - right.	27-21 TASK 802
272 010 48	Nose rudder trim: does not operate - left and right.	27-21 TASK 803
272 020 00	RUDDER TRIM indicator: does not operate correctly.	27-21 TASK 804
272 030 00	RUDDER TRIM indicator: light not on.	27-21 TASK 805
272 040 00	Rudder: does not move correctly.	27-21 TASK 806
272 050 00	Rudder: does not move freely.	27-21 TASK 807
272 060 00	Rudder: surface has excessive play.	27-21 TASK 808
272 070 00	Rudder: STBY RUD ON light is on.	27-21 TASK 817
272 070 31	Rudder pedals: adjustment crank does not move freely - captain's.	27-21 TASK 809
272 070 32	Rudder pedals: adjustment crank does not move freely - first officer's.	27-21 TASK 809
272 080 31	Rudder pedals: adjustment crank turns but rudder pedals do not move - captain's.	27-21 TASK 810
272 080 32	Rudder pedals: adjustment crank turns but rudder pedals do not move - first officer's.	27-21 TASK 810
272 090 31	Rudder pedals: do not move freely - captain's.	27-21 TASK 811
272 090 32	Rudder pedals: do not move freely - first officer's.	27-21 TASK 811
272 092 00	Rudder pedals: kick back during flight.	27-21 TASK 816
272 100 00	Trim switch: does not operate correctly.	27-21 TASK 812
273 010 00	Autopilot: travel is not within limits, column force is normal.	27-31 TASK 809
273 020 31	Control column: does not move freely - captain's.	27-31 TASK 801
273 020 32	Control column: does not move freely - first officer's.	27-31 TASK 801
273 030 00	Elevator: control cable tension repeatedly checks low.	27-31 TASK 802
273 040 00	Elevator: does not move correctly.	27-31 TASK 810

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FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
273 050 00	Elevator: too much play in elevator surface.	27-31 TASK 804
273 060 00	FEEL DIFF PRESS light: light on.	27-31 TASK 803
273 070 00	Vibration in aft and forward fuselage.	27-31 TASK 806
273 080 00	Neutral shift: does not operate correctly.	27-31 TASK 807
273 090 00	Pitch control: too sensitive in control wheel steering mode (airplane overreacts to column input).	27-31 TASK 811
273 100 00	Pitch up or pitch down of airplane too much.	27-31 TASK 808
273 110 00	Control column: shaker does not operate during test.	27-32 TASK 801
273 120 00	Elevator tab surface: has too much play.	27-31 TASK 805
273 130 00	Control column: low force.	27-31 TASK 812
273 140 00	Control column: high force, hydraulic power on.	27-31 TASK 813
273 150 00	Control column: high force, hydraulic power off.	27-31 TASK 814
273 160 31	SPD LIM shows - captain's.	27-32 TASK 831
273 160 32	SPD LIM shows - first officer's.	27-32 TASK 833
274 010 00	Stabilizer: control cable tension repeatedly checks low.	27-41 TASK 801
274 020 00	Stabilizer: fails to trim - nose down.	27-41 TASK 802
274 030 00	Stabilizer: fails to trim - nose up.	27-41 TASK 803
274 040 00	Stabilizer: fails to trim - nose up and nose down.	27-41 TASK 804
274 060 00	Stabilizer: too much play in stabilizer surface.	27-41 TASK 813
274 070 00	Stabilizer trim: does not move freely.	27-41 TASK 805
274 080 00	Stabilizer trim: moves with slow speed only.	27-41 TASK 810
274 120 00	Stabilizer trim: wheel coasts more than 2.5 turns (flaps down).	27-41 TASK 811
274 130 00	Stabilizer trim: does not hold position in flight.	27-41 TASK 812
274 150 31	Stabilizer trim switches: do not operate trim up - captain's.	27-41 TASK 806
274 150 32	Stabilizer trim switches: do not operate trim up - first officer's.	27-41 TASK 808
274 160 31	Stabilizer trim switches: do not operate trim down - captain's.	27-41 TASK 806
274 160 32	Stabilizer trim switches: do not operate trim down - first officer's.	27-41 TASK 808
274 170 31	Stabilizer trim switches: do not operate trim up and trim down - captain's.	27-41 TASK 807
274 170 32	Stabilizer trim switches: do not operate trim up and trim down - first officer's.	27-41 TASK 809
275 020 00	Flaps: load relief occurrs at wrong airspeed.	27-51 TASK 803
275 030 00	Flap position indicator: has fast movement.	27-51 TASK 844

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FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
275 040 00	Flap position indicator: has needles split.	27-51 TASK 840
275 050 00	Flap position indicator: has slow movement.	27-51 TASK 845
275 060 00	Flap position indicator: needle(s) do not operate.	27-51 TASK 841
275 070 00	Flap position indicator: needle(s) stick.	27-51 TASK 842
275 080 00	Flaps: do not operate with primary control.	27-51 TASK 836
275 090 00	Flaps: do not operate with alternate control.	27-51 TASK 837
275 091 00	Flaps: do not extend with alternate control.	27-51 TASK 838
275 092 00	Flaps: do not retract with alternate control.	27-51 TASK 839
275 100 00	Flaps: lever does not move freely.	27-51 TASK 843
275 110 00	Flaps: operation is fast.	27-51 TASK 844
275 120 00	Flaps: operation is slow.	27-51 TASK 845
275 140 00	Flaps: TE flap transmission torque trip indicator extended.	27-51 TASK 849
276 010 00	Spoilers: spoiler panel(s) float.	27-61 TASK 801
276 020 00	SPEED BRAKE ARMED light: does not operate.	27-62 TASK 803
276 030 00	SPEED BRAKE DO NOT ARM light: light on.	27-62 TASK 802
276 035 00	SPEEDBRAKES EXTENDED light: light on with airplane on the ground.	27-62 TASK 814
276 040 00	Speed brake: auto extend does not operate.	27-62 TASK 804
276 050 00	Speed brake: auto retract does not operate.	27-62 TASK 805
276 060 00	Speed brake: chatters.	27-62 TASK 806
276 070 00	Speed brake: flight detent does not operate.	27-61 TASK 802
276 080 00	Speed brake: lever does not move freely.	27-62 TASK 807
276 090 00	Spoilers: flight spoilers do not operate.	27-61 TASK 802
276 100 00	Spoilers: ground spoilers do not operate.	27-61 TASK 803
276 110 00	Spoilers: do not move in one direction.	27-61 TASK 804
278 010 00	Leading edge flaps: droops too much with hydraulic pressure off.	27-81 TASK 801
278 020 00	Leading edge flaps and slats: do not extend during alternate system operation.	27-81 TASK 802
278 030 00	Leading edge flaps and slats: do not extend during normal system operation.	27-81 TASK 803
278 040 00	Leading edge flaps and slats: do not retract.	27-81 TASK 803
278 050 00	Leading edge flaps and slats: one or more leading edge surfaces operate slowly.	27-81 TASK 805

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FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
278 060 00	AUTO SLAT FAIL light: light on.	27-32 TASK 801
278 070 01	Leading edge flaps: TRANSIT light stays on - 1.	27-88 TASK 820
278 070 02	Leading edge flaps: TRANSIT light stays on - 2.	27-88 TASK 820
278 070 03	Leading edge flaps: TRANSIT light stays on - 3.	27-88 TASK 820
278 070 04	Leading edge flaps: TRANSIT light stays on - 4.	27-88 TASK 820
278 080 01	Leading edge slats: TRANSIT light stays on - 1.	27-88 TASK 820
278 080 02	Leading edge slats: TRANSIT light stays on - 2.	27-88 TASK 820
278 080 03	Leading edge slats: TRANSIT light stays on - 3.	27-88 TASK 820
278 080 04	Leading edge slats: TRANSIT light stays on - 4.	27-88 TASK 820
278 080 05	Leading edge slats: TRANSIT light stays on - 5.	27-88 TASK 820
278 080 06	Leading edge slats: TRANSIT light stays on - 6.	27-88 TASK 820
278 080 07	Leading edge slats: TRANSIT light stays on - 7.	27-88 TASK 820
278 080 08	Leading edge slats: TRANSIT light stays on - 8.	27-88 TASK 820

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LRU/SYSTEM	SHORT NAME	CHAPTER
Air Data Inertial Reference System	ADIRS	34
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Auxiliary Power Unit Generator Control Unit	APU GCU	24
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Flight Data Acquisition Unit	FDAU	31
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Fuel Quantity Indicating System	FQIS	28
Generator Control Unit - 1	GCU - 1	24
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Ground Proximity Computer	GROUND PROX	34
Head Up Display	HUD	34

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LRU/SYSTEM	SHORT NAME	CHAPTER
High Frequency Transceiver	HF XCVR	23
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Pack/Zone Temperature Controller - Right	PACK/ZN CON - R	21
Proximity Switch Electronics Unit	PSEU	32
Radio Altimeter Receiver/Transmitter	RADIO ALTIMTR	34
Stall Management Yaw Damper Computer - 1	SMYD - 1	27
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Waste Tank Logic Control Module	WASTE TANK	38
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Window Heat Control Unit - Left Forward	WHCU - L FWD	30
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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-51101 FSEU FAILED	27-51 TASK 805
FSEU	27-51102 FSEU FAILED	27-51 TASK 806
FSEU	27-51103 FSEU FAILED	27-51 TASK 807
FSEU	27-51105 FSEU FAILED	27-88 TASK 801
FSEU	27-51106 FSEU FAILED	27-51 TASK 815
FSEU	27-51107 FSEU FAILED	27-51 TASK 816
FSEU	27-51108 FSEU FAILED	27-51 TASK 817
FSEU	27-51109 FSEU FAILED	27-51 TASK 818
FSEU	27-51110 FSEU FAILED	27-88 TASK 802
FSEU	27-51351 TE FLAP UCM	27-51 TASK 830
FSEU	27-51401 IN BYP REA UNKN	27-51 TASK 808
FSEU	27-51402 ALT MODE IS ARMED	27-51 TASK 847
FSEU	27-51403 ALT ARM SW DISAG	27-51 TASK 847
FSEU	27-51404 FLP LOAD RLF 40	27-51 TASK 809
FSEU	27-51405 FLP LOAD RLF 30 or FLP LOAD RLF 10	27-51 TASK 810
FSEU	27-51406 FLP LOAD RELIEF	27-51 TASK 831
FSEU	27-51407 TE FAIL TO DRIVE	27-51 TASK 848
FSEU	27-51417 FLAP LVR SENSOR	27-51 TASK 811
FSEU	27-51427 FLAP LEVER	27-51 TASK 819
FSEU	27-51429 BYP VLV SW DISAG	27-51 TASK 812
FSEU	27-52259 TE FLAP SNSR L	27-51 TASK 813
FSEU	27-52260 TE FLAP SNSR R	27-51 TASK 820
FSEU	27-52261 TE FLAPS SNSR DIS	27-51 TASK 832
FSEU	27-52407 TE FLAP SNSR L C	27-51 TASK 814
FSEU	27-52408 TE FLAP SNSR R C	27-51 TASK 821
FSEU	27-52418 ECS	27-51 TASK 827
FSEU	27-53250 FLAP 1 SKEW	27-59 TASK 801
FSEU	27-53251 FLAP 2 SKEW	27-59 TASK 802

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-53252 FLAP 3 SKEW	27-59 TASK 803
FSEU	27-53253 FLAP 4 SKEW	27-59 TASK 804
FSEU	27-53254 FLAP 5 SKEW	27-59 TASK 805
FSEU	27-53255 FLAP 6 SKEW	27-59 TASK 806
FSEU	27-53256 FLAP 7 SKEW	27-59 TASK 807
FSEU	27-53257 FLAP 8 SKEW	27-59 TASK 808
FSEU	27-53258 FLAP SKEW	27-59 TASK 809
FSEU	27-53279 L 28VAC EXC INV	27-51 TASK 822
FSEU	27-53280 R 28VAC EXC INV	27-51 TASK 823
FSEU	27-53409 FLAP 1 SKEW CON	27-59 TASK 810
FSEU	27-53410 FLAP 2 SKEW CON	27-59 TASK 811
FSEU	27-53411 FLAP 3 SKEW CON	27-59 TASK 812
FSEU	27-53412 FLAP 4 SKEW CON	27-59 TASK 813
FSEU	27-53413 FLAP 5 SKEW CON	27-59 TASK 814
FSEU	27-53414 FLAP 6 SKEW CON	27-59 TASK 815
FSEU	27-53415 FLAP 7 SKEW CON	27-59 TASK 816
FSEU	27-53416 FLAP 8 SKEW CON	27-59 TASK 817
FSEU	27-53428 TE BYP VALVE	27-51 TASK 824
FSEU	27-54402 NO A/S DATA	27-51 TASK 825
FSEU	27-54403 A/S DATA INVALID	27-51 TASK 846
FSEU	27-54419 RUDDER LIMITER	27-51 TASK 828
FSEU	27-54423 FLR OUTPUT	27-51 TASK 829
FSEU	27-58335 FLAP LD RLF LT	27-51 TASK 833
FSEU	27-58400 TE FLAP INDICATN	27-51 TASK 826
FSEU	27-81200 SL1 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81201 SL1 PROX INBOARD	27-88 TASK 804
FSEU	27-81202 SL2 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81203 SL2 PROX INBOARD	27-88 TASK 804

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-81204 SL3 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81205 SL3 PROX INBOARD	27-88 TASK 804
FSEU	27-81206 SL4 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81207 SL4 PROX INBOARD	27-88 TASK 804
FSEU	27-81208 SL5 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81209 SL5 PROX INBOARD	27-88 TASK 804
FSEU	27-81210 SL6 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81211 SL6 PROX INBOARD	27-88 TASK 804
FSEU	27-81212 SL7 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81213 SL7 PROX INBOARD	27-88 TASK 804
FSEU	27-81214 SL8 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81215 SL8 PROX INBOARD	27-88 TASK 804
FSEU	27-81216 F1 PROX RETRACT	27-88 TASK 805
FSEU	27-81217 F1 PROX EXTEND	27-88 TASK 806
FSEU	27-81218 F2 PROX RETRACT	27-88 TASK 805
FSEU	27-81219 F2 PROX EXTEND	27-88 TASK 806
FSEU	27-81220 F3 PROX RETRACT	27-88 TASK 805
FSEU	27-81221 F3 PROX EXTEND	27-88 TASK 806
FSEU	27-81222 F4 PROX RETRACT	27-88 TASK 805
FSEU	27-81223 F4 PROX EXTEND	27-88 TASK 806
FSEU	27-81224 MULTIPLE PROX	27-88 TASK 807
FSEU	27-81225 SL2 PROX RETRACT	27-88 TASK 808
FSEU	27-81226 SL3 PROX RETRACT	27-88 TASK 808
FSEU	27-81227 SL4 PROX RETRACT	27-88 TASK 808
FSEU	27-81228 SL5 PROX RETRACT	27-88 TASK 808
FSEU	27-81229 SL6 PROX RETRACT	27-88 TASK 808
FSEU	27-81230 SL7 PROX RETRACT	27-88 TASK 808
FSEU	27-81231 SL2 PROX RET FAIL	27-88 TASK 809

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-81232 SL3 PROX RET FAIL	27-88 TASK 809
FSEU	27-81233 SL4 PROX RET FAIL	27-88 TASK 809
FSEU	27-81234 SL5 PROX RET FAIL	27-88 TASK 809
FSEU	27-81235 SL6 PROX RET FAIL	27-88 TASK 809
FSEU	27-81236 SL7 PROX RET FAIL	27-88 TASK 809
FSEU	27-81237 LE RETR SENSORS	27-88 TASK 815
FSEU	27-81238 L RETR SENSORS	27-88 TASK 815
FSEU	27-81239 R RETR SENSORS	27-88 TASK 815
FSEU	27-81277 PROGRAM PINS	27-51 TASK 834
FSEU	27-81278 INV APL TYPE	27-51 TASK 834
FSEU	27-81281 AUTOSLAT INPUT 1	27-83 TASK 806
FSEU	27-81282 AUTOSLAT INPUT 2	27-83 TASK 806
FSEU	27-81283 ASYM ENABLED	27-88 TASK 819
FSEU	27-81301 SLAT 1 EXTEND	27-88 TASK 810
FSEU	27-81302 SLAT 1 FULL EXT	27-88 TASK 811
FSEU	27-81303 SLAT 1 IN TRANS	27-88 TASK 812
FSEU	27-81304 SLAT 2 EXTEND	27-88 TASK 810
FSEU	27-81305 SLAT 2 FULL EXT	27-88 TASK 811
FSEU	27-81306 SLAT 2 IN TRANS	27-88 TASK 812
FSEU	27-81307 SLAT 3 EXTEND	27-88 TASK 810
FSEU	27-81308 SLAT 3 FULL EXT	27-88 TASK 811
FSEU	27-81309 SLAT 3 IN TRANS	27-88 TASK 812
FSEU	27-81310 SLAT 4 EXTEND	27-88 TASK 810
FSEU	27-81311 SLAT 4 FULL EXT	27-88 TASK 811
FSEU	27-81312 SLAT 4 IN TRANS	27-88 TASK 812
FSEU	27-81313 SLAT 5 EXTEND	27-88 TASK 810
FSEU	27-81314 SLAT 5 FULL EXT	27-88 TASK 811
FSEU	27-81315 SLAT 5 IN TRANS	27-88 TASK 812

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-81316 SLAT 6 EXTEND	27-88 TASK 810
FSEU	27-81317 SLAT 6 FULL EXT	27-88 TASK 811
FSEU	27-81318 SLAT 6 IN TRANS	27-88 TASK 812
FSEU	27-81319 SLAT 7 EXTEND	27-88 TASK 810
FSEU	27-81320 SLAT 7 FULL EXT	27-88 TASK 811
FSEU	27-81321 SLAT 7 IN TRANS	27-88 TASK 812
FSEU	27-81322 SLAT 8 EXTEND	27-88 TASK 810
FSEU	27-81323 SLAT 8 FULL EXT	27-88 TASK 811
FSEU	27-81324 SLAT 8 IN TRANS	27-88 TASK 812
FSEU	27-81325 FLAP 1 EXTEND	27-88 TASK 813
FSEU	27-81326 FLAP 1 IN TRANS	27-88 TASK 814
FSEU	27-81327 FLAP 2 EXTEND	27-88 TASK 813
FSEU	27-81328 FLAP 2 IN TRANS	27-88 TASK 814
FSEU	27-81329 FLAP 3 EXTEND	27-88 TASK 813
FSEU	27-81330 FLAP 3 IN TRANS	27-88 TASK 814
FSEU	27-81331 FLAP 4 EXTEND	27-88 TASK 813
FSEU	27-81332 FLAP 4 IN TRANS	27-88 TASK 814
FSEU	27-81333 MASTER EXTEND	27-88 TASK 817
FSEU	27-81334 MASTER IN TRANS	27-88 TASK 818
FSEU	27-81352 L LE SL EXT UCM	27-81 TASK 806
FSEU	27-81353 R LE SL EXT UCM	27-81 TASK 806
FSEU	27-81354 LE SLAT EXT UCM	27-81 TASK 806
FSEU	27-81355 L LE SL FE UCM	27-81 TASK 806
FSEU	27-81356 R LE SL FE UCM	27-81 TASK 806
FSEU	27-81357 LE SLAT FE UCM	27-81 TASK 806
FSEU	27-81358 L LE FL EXT UCM	27-81 TASK 806
FSEU	27-81359 R LE FL EXT UCM	27-81 TASK 806
FSEU	27-81360 LE FLAP EXT UCM	27-81 TASK 806

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-81420 LE INTRANS	27-81 TASK 809
FSEU	27-81421 TAKEOFF WARNING	27-81 TASK 811
FSEU	27-81424 LE UCM SOV	27-81 TASK 807
FSEU	27-81425 LE CRZ DEPRESS	27-81 TASK 808
FSEU	27-81426 LE UCM	27-81 TASK 810
FSEU	27-83350 AUTOSLAT	27-83 TASK 806
PSEU	27-62001 SPDBRK DN FAULT	27-62 TASK 808
PSEU	27-62002 SBRK GT ARMD FLT	27-62 TASK 809
PSEU	27-62003 ALT L LT 800 FLT	32-61 TASK 823
PSEU	27-62004 ALT R LT 800 FLT	32-61 TASK 823
PSEU	27-62101 SPDBRK DN FAULT	27-62 TASK 808
PSEU	27-62102 SBRK GT ARMD FLT	27-62 TASK 809
PSEU	27-62103 ALT L LT 800 FLT	32-61 TASK 823
PSEU	27-62104 ALT R LT 800 FLT	32-61 TASK 823
PSEU	27-62203 ALT L LT 800 FLT	32-61 TASK 823
PSEU	27-62204 ALT R LT 800 FLT	32-61 TASK 823
PSEU	27-65001 ALT L LT 800	32-61 TASK 823
PSEU	27-65002 ALT R LT 800	32-61 TASK 823
PSEU	27-65003 SBRK GT ARMED	27-62 TASK 809
PSEU	27-65004 SPDBRK DOWN	27-62 TASK 808
PSEU	27-66001 SPDBRK EXT FLT	27-62 TASK 810
SMYD - 1	22-21001 SMYD YD fault	22-23 TASK 801
SMYD - 1	22-21002 YD 28VAC no power	22-23 TASK 802
SMYD - 1	22-21003 YD 28VDC no power	22-23 TASK 803
SMYD - 1	22-21004 YD LVDT error	22-23 TASK 804
SMYD - 1	22-21005 flap sig disagree	22-23 TASK 806
SMYD - 1	22-21006 YD servo loop	22-23 TASK 809
SMYD - 1	22-21007 no X-CH data	22-23 TASK 807

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
SMYD - 1	22-21008 X-CH invalid	22-23 TASK 801
SMYD - 1	22-21009 X-CH cmd disagree	22-23 TASK 808
SMYD - 1	27-31000 SMYD fault	27-32 TASK 832
SMYD - 1	27-31001 SMYD SW fault	27-32 TASK 832
SMYD - 1	27-31002 S/S no power	27-32 TASK 805
SMYD - 1	27-31003 SM 28VAC invalid	27-32 TASK 807
SMYD - 1	27-31004 AOA sig error	27-32 TASK 809
SMYD - 1	27-31005 FLAP sig error	27-32 TASK 811
SMYD - 1	27-31006 LE shows asymetry	27-32 TASK 813
SMYD - 1	27-31007 air/gnd in air	27-32 TASK 814
SMYD - 1	27-31009 SW tst sw short	27-32 TASK 815
SMYD - 1	27-31010 prgm pin error	27-32 TASK 816
SMYD - 1	27-31011 no AD data	27-32 TASK 803
SMYD - 1	27-31012 AD data invalid	27-32 TASK 817
SMYD - 1	27-31013 AD out of range	27-32 TASK 817
SMYD - 1	27-31014 no IR1 data	27-32 TASK 803
SMYD - 1	27-31015 IR1 data invalid	27-32 TASK 818
SMYD - 1	27-31016 IR1 out of range	27-32 TASK 818
SMYD - 1	27-31017 no IR2 data	27-32 TASK 803
SMYD - 1	27-31018 IR2 data invalid	27-32 TASK 818
SMYD - 1	27-31019 IR2 out of range	27-32 TASK 818
SMYD - 1	27-31020 no DEU data	27-32 TASK 819
SMYD - 1	27-31021 DEU data invalid	27-32 TASK 821
SMYD - 1	27-31022 DEU out of range	27-32 TASK 821
SMYD - 1	27-31023 no MCP data	27-32 TASK 825
SMYD - 1	27-31024 MCP data invalid	27-32 TASK 826
SMYD - 1	27-31025 no FMC data	27-32 TASK 822
SMYD - 1	27-31026 FMC data invalid	27-32 TASK 824

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
SMYD - 1	27-31027 FMC out of range	27-32 TASK 824
SMYD - 1	27-31028 AOA sig inactive	27-32 TASK 809
SMYD - 1	27-31029 FLAP sig inactive	27-32 TASK 811
SMYD - 1	27-31030 air/gnd inactive	27-32 TASK 830
SMYD - 1	27-31031 AOA vane bent	27-32 TASK 809
SMYD - 1	27-31032 AOA sel invalid	27-32 TASK 809
SMYD - 1	27-81001 SMYD A/S fault	27-32 TASK 832
SMYD - 1	27-81002 A/S no power	27-83 TASK 801
SMYD - 1	27-81003 A/S vlv ckt open	27-83 TASK 802
SMYD - 1	27-81004 A/S flt tst fail	27-83 TASK 803
SMYD - 2	22-22001 SMYD YD fault	22-23 TASK 801
SMYD - 2	22-22002 YD 28VAC no power	22-23 TASK 802
SMYD - 2	22-22003 YD 28VDC no power	22-23 TASK 803
SMYD - 2	22-22004 YD LVDT error	22-23 TASK 805
SMYD - 2	22-22005 flap sig disagree	22-23 TASK 806
SMYD - 2	22-22006 YD servo loop	22-23 TASK 810
SMYD - 2	22-22007 no X-CH data	22-23 TASK 807
SMYD - 2	22-22008 X-CH invalid	22-23 TASK 801
SMYD - 2	27-22001 whl sig error	31-31 TASK 806
SMYD - 2	27-32000 SMYD fault	27-32 TASK 802
SMYD - 2	27-32001 SMYD SW fault	27-32 TASK 802
SMYD - 2	27-32002 S/S no power	27-32 TASK 806
SMYD - 2	27-32003 SM 28VAC no power	27-32 TASK 808
SMYD - 2	27-32004 AOA sig error	27-32 TASK 810
SMYD - 2	27-32005 FLAP sig error	27-32 TASK 812
SMYD - 2	27-32006 LE shows asymetry	27-32 TASK 813
SMYD - 2	27-32007 air/gnd in air	27-32 TASK 814
SMYD - 2	27-32009 SW test sw short	27-32 TASK 815

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
SMYD - 2	27-32010 prgm pin error	27-32 TASK 816
SMYD - 2	27-32011 no AD data	27-32 TASK 804
SMYD - 2	27-32012 AD data invalid	27-32 TASK 817
SMYD - 2	27-32013 AD out of range	27-32 TASK 817
SMYD - 2	27-32014 no IR2 data	27-32 TASK 804
SMYD - 2	27-32015 IR2 data invalid	27-32 TASK 818
SMYD - 2	27-32016 IR2 out of range	27-32 TASK 818
SMYD - 2	27-32017 no IR1 data	27-32 TASK 804
SMYD - 2	27-32018 IR1 data invalid	27-32 TASK 818
SMYD - 2	27-32019 IR1 out of range	27-32 TASK 818
SMYD - 2	27-32020 no DEU data	27-32 TASK 820
SMYD - 2	27-32021 DEU data invalid	27-32 TASK 821
SMYD - 2	27-32022 DEU out of range	27-32 TASK 821
SMYD - 2	27-32023 no MCP data	27-32 TASK 828
SMYD - 2	27-32024 MCP data invalid	27-32 TASK 826
SMYD - 2	27-32025 no FMC data	27-32 TASK 823
SMYD - 2	27-32026 FMC data invalid	27-32 TASK 824
SMYD - 2	27-32027 FMC out of range	27-32 TASK 824
SMYD - 2	27-32028 AOA sig error	27-32 TASK 810
SMYD - 2	27-32029 FLAP sig error	27-32 TASK 812
SMYD - 2	27-32030 air/gnd inactive	27-32 TASK 830
SMYD - 2	27-32031 AOA vane bent	27-32 TASK 810
SMYD - 2	27-32032 AOA sel invalid	27-32 TASK 810
SMYD - 2	27-62001 AUTOSTOW FAULT	27-62 TASK 811
SMYD - 2	27-62002 INTERNAL AUTOSTOW	27-62 TASK 811
SMYD - 2	27-82001 SMYD A/S fault	27-32 TASK 802
SMYD - 2	27-82002 A/S no power	27-83 TASK 801
SMYD - 2	27-82003 A/S vlv ckt open	27-83 TASK 802

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
SMYD - 2	27-82004 A/S flt tst fail	27-83 TASK 803

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801. High Control Wheel Play - Fault Isolation

A. Description

(1) The roll control system for the ailerons and the flight spoilers use cable force input from the control wheels to control the PCU's which supply hydraulic power to move the ailerons. Two PCU's are connected through a crank and crankshaft to aileron body quadrants. If one body quadrant can not move, the PCU's move and shear the quadrant to disconnect it.

(2) This fault isolation procedure is used for high control wheel play.

B. Possible Causes

(1) Body cables AA and AB loose or broken.

(2) Control wheel drum components loose, worn, or damaged.

(3) Control bus cables ACBA and ACBB loose or broken.

(4) Transfer mechanism components loose, worn, or damaged.

(5) Aileron trim mechanism

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

D. Related Data

(1) (SSM 27-10-01)

E. Initial Evaluation

(1) Do this check of the aileron control wheel movement:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic systems A and B. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(c) Move the captain's or first officer's control wheel fully clockwise and then fully counterclockwise.

(d) Make sure there is not excessive play in the control wheel.

NOTE: The ailerons should begin to move when the control wheel is turned.

1) If there is not excessive play in the control wheel, then there was an intermittent fault. Do this step to complete the task:

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a) Remove the hydraulic systems A and B pressure. These are the tasks:
- Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805
- Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801

(e) If there is excessive play in the control wheel movement, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do these checks of the body cables AA and AB tension and the aileron control wheel drum:

(a) Turn the control wheel and make sure the aileron control quadrant operates correctly.

1) If the control quadrant does not operate correctly, then check the tension of left body cables AA and AB. To adjust the tension, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

a) If you needed to adjust the tension of the left body cables, then do the Repair Confirmation at the end of this task.

b) If you did not need to adjust the tension of the left body cables, inspect the aileron control wheel drum.

<1> Turn the control wheel and make sure the aileron control wheel drum operates correctly.

<a> If the control wheel drum does not operate correctly, check the drum, control column, and control wheel for loose, worn, or damaged parts. Repair or replace parts as necessary and do the Repair Confirmation at the end of this task.

<b> If the control wheel drum operates correctly, continue with the fault isolation.

2) If the control quadrant does operate correctly, then continue.

(2) Do these checks of the control bus drum cables ACBA and ACBB and the aileron transfer mechanism:

NOTE: Do this test for high control wheel play on the first officer's control wheel only.

(a) Do a check of the cables ACBA and ACBB for correct cable tension. To adjust the cable tension, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

1) If you needed to adjust cables ACBA and ACBB, then do the Repair Confirmation at the end of this task.

2) If you did not need to adjust the tension of cables ACBA and ACBB, inspect the aileron transfer mechanism.

a) Turn the first officer's control wheel and make sure the transfer mechanism operates correctly.

<1> If the transfer mechnism does not operate correctly, check the transfer mechanism, control column, and control wheel for loose, worn, or damaged parts. Repair or replace parts as necessary and do the Repair Confirmation at the end of this task.

<2> If the transfer mechanism operates correctly, continue with the fault isolation.

(3) Do this check of the aileron trim feel and centering mechanism:

(a) Operate the aileron trim control switches and examine the movement of the aileron trim actuator.

1) If the aileron trim actuator moves properly, then do these steps:

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a) Replace the feel and centering mechanism. These are the tasks:
- Aileron Feel and Centering Unit Removal, AMM TASK 27-11-81-000-801
- Aileron Feel and Centering Unit Installation, AMM TASK 27-11-81-400-801

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

G. Repair Confirmation

(1) Do this check of the aileron control wheel play:

(a) Turn the captain's, then the first officer's, control wheel fully clockwise and then fully counterclockwise and make sure there is no excessive play.

1) If there is no excessive control wheel play, then you corrected the fault.

a) Remove pressure from the hydraulics A and B systems. To remove the pressure, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

——————— END OF TASK ———————

802. Left and Right Aileron Do Not Go To The Neutral Position - Fault Isolation

A. Description

(1) This fault isolation procedure is for when both left and right ailerons do not go to the neutral position when the control wheel is in the neutral position.

B. Possible Causes

(1) Body cables AA and AB tension

(2) Blockage of the body cables AA and AB.

C. Related Data

(1) (SSM 27-10-01)

D. Initial Evaluation

(1) Do this check to see if the ailerons are at the neutral position when the control wheel is centered:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic systems A and B. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Turn the captain's or first officer's control wheel clockwise at least 6 units of trim then release and allow the control wheel to go to its neutral position.

NOTE: Make sure the index mark on the captain's or first officer's control wheel aligns with the zero mark on the control column.

(c) Make sure the left wing aileron and the right wing aileron are in the neutral/rig position.

NOTE: The aileron is in the rig position when the aftmost inboard edge of the aileron lower surface, just forward of the tab leading edge, is 0.35 ±0.03 inch (straight line distance normal to the aileron hinge line) below the adjacent fixed lower trailing edge surface.

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1) If the left wing aileron and the right wing ailerons are in the neutral/rigged position, then there was an intermittent fault. Do this step to complete the task:

a) Remove the hydraulic systems A and B pressure. To remove hydraulic pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) If the left wing aileron and the right wing aileron are not in the neutral/rig position, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do a check of the left and right body cables AA and AB for correct cable tension. To check the cable tension, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

(a) If you needed to adjust the left or right body cable tensions, then do the Repair Confirmation at the end of this task.

(b) If the body cable tension is correct, then continue.

(2) Do a check of the left and right body cables AA and AB for objects that can cause a blockage.

(a) If there are objects that can cause a blockage, then do these steps:

1) Remove the unwanted objects.

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

F. Repair Confirmation

(1) Do this check of the aileron neutral position when the control wheel is centered:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Make sure hydraulic systems A and B are pressurized. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Turn the captain's or first officer's control wheel clockwise at least 6 units of trim hen release and allow the control wheel to go to its neutral position.

NOTE: Make sure the index mark on the captian's or first officer's control wheel aligns with the zero mark on the control column.

(c) Make sure the left wing aileron and the right wing aileron are in the neutral/rig position.

NOTE: The aileron is in the rig position when the aftmost inboard edge of the aileron lower surface, just forward of the tab leading edge, is 0.35 ±0.03 inch (straight line distance normal to the aileron hinge line) below the adjacent fixed lower trailing edge surface.

(d) If the left wing aileron and the right wing ailerons are in the neutral/rigged position, then you corrected the fault.

1) Remove the hydraulic systems A and B pressure. To remove the pressure, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

——————— END OF TASK ———————

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803. Left or Right Aileron Does Not Go To The Neutral Position - Fault Isolation

A. Description

(1) This fault isolation procedure is used when the left or right aileron does not go to the neutral position when the control wheel is in the neutral position.

B. Possible Causes

(1) Bus cables ABSA and ABSB tension.

(2) Blockage of the aileron body cables ABSA and ABSB.

C. Related Data

(1) (SSM 27-10-01)

(2) (SSM 27-11-11)

D. Initial Evaluation

(1) Do this check of the aileron position when the control wheel is at the centered position:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic systems A and B. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Move the the captain's or first officer's control wheel clockwise at least 6 units of trim and then release and allow the control wheel to go to its neutral position.

NOTE: Make sure the index mark on the captain's or first officer's control wheel aligns with the zero mark on the control column.

1) Make sure the left wing aileron and the right wing aileron are in the neutral/rig position.

NOTE: The aileron is in the rig position when the aftmost inboard edge of the aileron lower surface, just forward of the tab leading edge, is 0.35 ±0.03 inch (straight line distance normal to the aileron hinge line) below the adjacent fixed lower trailing edge surface.

(c) If the left wing aileron and the right wing ailerons were in the neutral/rigged position, then there was an intermittent fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To remove pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) If the left wing aileron or right wing aileron did not go to the neutral/rig position, then do the Fault Isolation Procedure below.

E. Fault Isolation

(1) Do a tension check the bus cables ABSA and ABSB. To adjust the tension, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

(a) If you needed to adjust the cable tension, then do the Repair Confirmation at the end of this task.

(b) If the cable tension did not need any adjustment, then continue.

(2) Do a check of the bus cables ABSA and ABSB for objects that might cause a blockage.

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(a) Remove any unwanted objects that can cause a blockage.

(b) If there was a blockage, then do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do this check of the aileron position:

(a) Center the control wheel and then check the position of the ailerons.

1) Turn the captain's or first officer's control wheel clockwise at least 6 units of trim then release and allow the control wheel to go to its neutral position.

NOTE: Make sure the index mark on the captain's or first officer's control wheel aligns with the zero mark on the control column.

2) Make sure the left wing aileron and the right wing aileron are in the neutral/rig position.

NOTE: The aileron is in the rig position when the aftmost inboard edge of the aileron lower surface, just forward of the tab leading edge, is 0.35 ±0.03 inch (straight line distance normal to the aileron hinge line) below the adjacent fixed lower trailing edge surface.

3) Turn the captain's or first officer's control wheel counterclockwise for at least 6 units of trim then release and allow the control wheel to go to its neutral position.

NOTE: Make sure the index mark on the captain's or first officer's control wheel aligns with the zero mark on the control column.

4) Make sure the left wing aileron and the right wing aileron are in the neutral/rig position.

NOTE: The aileron is in the rig position when the aftmost inboard edge of the aileron lower surface, just forward of the tab leading edge, is 0.35 ±0.03 inch (straight line distance normal to the aileron hinge line) below the adjacent fixed lower trailing edge surface.

(b) If the left wing aileron and the right wing aileron are in the neutral/rigged position, then you corrected the fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To remove hydraulic pressure, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

———————— END OF TASK ————————

804. High Control Wheel Force Is Necessary to Start Aileron Movement In Both Directions With Hydraulic Power On - Fault Isolation

A. Description

(1) This fault isolation procedure is used for when high contol wheel force is necessary to start aileron movement in both directions with hydraulic power on.

B. Possible Causes

(1) Left body cables AA and AB damaged or chafed.

(2) Left body cables AA and AB blockage

(3) Left body cables AA and AB tension

(4) Control column support bearing

(5) Roll force transducer wire bundle to tight

(6) Control column U-joint bearing

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(7) Control drum bearing

(8) Control wheel bearings, gears, U-joints

(9) Aileron trim and centering unit

(10) Aileron aft control quadrant

(11) PCU rod ends and linkage

(12) Autopilot actuator rod ends and linkage

(13) PCU control valve

HAP 001-013, 015-026, 028-030; AIRPLANES WITH 65-44891-1 THRU -7 FCM

(14) Flight control module compensator cartridge

HAP ALL

C. Related Data

(1) (SSM 27-10-01)

D. Initial Evaluation

(1) Do this check of the control wheel force:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic systems A and B. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Do a check of the force necessary to start moving the ailerons. To check the force, do this task: Aileron Control Wheel Force Test, AMM TASK 27-11-00-700-805.

1) If the control wheel force needed to move the ailerons is correct, then there was an intermittent fault. Do this step to complete the task:

a) Remove the hydraulic systems A and B pressure. To remove the pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

2) If the force needed to move the ailerons is not correct, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do a check of the left body cables for damage. To do this check, do this task: Inspection of the Control Cable Wire Rope, AMM TASK 20-20-31-200-801.

(a) If the left body cables AA or AB are chafed or damaged, then do these steps:

1) Replace the damaged cables. These are the tasks:

- Control Cables Removal, AMM TASK 20-10-91-000-801
- Control Cables Installation, AMM TASK 20-10-91-400-801

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

(b) If the left body cables AA and AB were not damaged, then continue.

(2) Do this check of the left body cables AA and AB for blockage:

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(a) If the cables have a blockage, remove the objects, then do the Repair Confirmation at the end of this task.

(b) If the left body cables AA and AB were not blocked, then continue.

(3) Do a check to make sure the left body cables AA and AB tension is correct. To check the tension, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

(a) If you needed to adjust the cable tension, then do the Repair Confirmation at the end of this task.

(b) If you did not need to adjust the cable tension, then continue.

(4) Do a check for friction in the captain's or first officer's control column support bearing:

(a) Move the control column fully forward and then fully aft and check for exessive friction.

1) If there is exessive friction in the control column, then do these steps:

a) Replace the control column support bearing. These are the tasks:

- Control Column Support Bearing Removal, AMM TASK 27-31-54-000-801
- Control Column Support Bearing Installation, AMM TASK 27-31-54-400-801

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

2) If you do not find a problem with the control column friction, then continue.

(5) Do a check to make sure the roll force transducer wire cable is not too tight.

(a) Turn the captain's control wheel fully counterclockwise and make sure the roll force transducer cable does not prevent control wheel movement.

(b) If the roll force transducer cable restricts control wheel movement, then do these steps:

1) Adjust the roll force transducer cable, (AMM TASK 22-11-11-400-801).

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

(c) If the transducer cable does not restrict the movement of the control wheel, then continue.

(6) Do this check to make sure there is not high friction in the control column U-joint bearing.

(a) Move the captain's or first officer's control wheel fully clockwise and then fully counterclockwise and check for high friction.

NOTE: An indication of high friction in the u-joint bearing is an intermittent ratchet while you move the control wheel.

(b) If you detect high friction, then do these steps:

1) Replace the bearing and pressure seal, (AMM TASK 27-31-51-400-801).

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

(c) If you do not detect high friction in the control column, then continue.

(7) Do this friction check of the aileron transfer mechanism control drum bearing:

(a) Disconnect the aileron spring cartridge in the wheel well.

(b) Turn the captain's or first officer's control wheel clockwise 12 degrees then counterclockwise 12 degrees and make sure sure the friction of the control drum bearing is satisfactory.

1) If the friction is not satisfactory, then do these steps:

a) Replace the aileron transfer mechanism. These are the tasks:

- Aileron Transfer Mechanism Removal, AMM TASK 27-11-61-000-801
- Aileron Transfer Mechanism Installation, AMM TASK 27-11-61-400-801

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

2) If the friction is satisfactory, then continue.

(8) Do a check for friction in the control wheel bearings, gears and U-joint.

(a) Turn the captain's or first officer's control wheel fully clockwise and then fully counterclockwise and check for high friction in the control wheel bearings, gears, upper column bearings or U-joints.

NOTE: An indication of gears out of adjustment is a continuous ratchet while you turn the control wheel.

1) If you detect high friction, then do these steps:

a) Replace the bearings or adjust as gears as necessary.

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

2) If you do not detect high friction, then continue.

(9) Do this check of the aileron trim and centering mechanism friction:

(a) Disconnect the left body cables AA and AB at the aileron aft control quadrant.

(b) Disconnect the aileron PCU control rods and the autopilot actuator control rods.

(c) Disconnect the centering springs from the centering mechanism roller arm.

(d) Turn the aileron aft control quadrant by hand and check for friction in the trim and centering mechanism bearings and check for friction in the roller arm bearing.

1) If the friction in the aileron trim mechanism bearing or roller arm bearing is not satisfactory, then do these steps:

a) Replace the aileron trim and centering mechanism. These are the tasks:

- Aileron Feel and Centering Unit Removal, AMM TASK 27-11-81-000-801
- Aileron Transfer Mechanism Installation, AMM TASK 27-11-61-400-801

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

2) If the friction of the roller arm bearing and centering mechanism bearing is satisfactory, then continue.

(e) Re-connect the PCU and autopilot actuator control rods, body cables and centering spring.

(10) Do this check of the control quadrant bearing and pressure seal for friction.

(a) Turn the aileron aft control quadrant by hand and check for friction in the upper shaft bearings and pressure seal of the control quadrant shaft.

1) If the friction in the control shaft bearing and pressure seal is not satisfactory, then do these steps:

a) Replace the aileron body quadrant (AMM TASK 27-11-81-000-801).

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

2) If the friction is satisfactory, then continue.

(11) Do a check of the aileron PCU control rod ends and linkages.

(a) Replace any parts if they are worn or bent.

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

(b) If the rod ends or linkages are not damaged, then continue.

(12) Do a check of the autopilot actuator control rod ends and linkage. To check, do this task: Autopilot Aileron Actuator Linkage Inspection, AMM TASK 22-11-25-200-801.

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(a) If the rod ends or linkage is damged, then do these steps:

1) Replace any parts that are worn or bent (AMM TASK 22-11-25-000-801).

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

(b) If the rod ends or linkage are not damage, then continue.

(13) Do a check of the aileron PCU control valve (AMM TASK 27-11-14-000-801).

(a) If any of the parts are damaged, do these steps:

1) Replace the parts that are broken, bent, or worn.

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

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(14) Do a check of the flight control module compensator cartridge.

(a) On the pilot's overhead panel, make sure the FLT CONTROL A and FLT CONTROL B switches are ON.

(b) On the pilot's overhead panel, move the FLT CONTROL A switch to OFF.

(c) Make sure that the FLT CONTROL A LOW PRESSURE LIGHT comes on within 2 seconds.

1) If the FLT CONTROL A LOW PRESSURE LIGHT does not come on within 2 seconds, then do these steps:

a) These are the tasks:

- Compensator Cartridge Removal, AMM TASK 27-09-51-000-801
- Compensator Cartridge Installation, AMM TASK 27-09-51-400-801

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

(d) On the pilot's overhead panel, move the FLT CONTROL B switch to OFF.

(e) Make sure the FLT CONTROL B LOW PRESSURE LIGHT comes on within 2 seconds.

1) If the FLT CONTROL B LOW PRESSURE LIGHT does not come on within 2 seconds, then do these steps:

a) These are the tasks:

- Compensator Cartridge Removal, AMM TASK 27-09-51-000-801
- Compensator Cartridge Installation, AMM TASK 27-09-51-400-801

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

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F. Repair Confirmation

(1) Do a check of the control wheel force.

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Make sure the hydraulic systems A and B are pressurized. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Do a check of the control wheel force necessary to move the ailerons. To check the force, do this task: Aileron Control Wheel Force Test, AMM TASK 27-11-00-700-805.

1) If the force needed to move the ailerons is correct, then you corrected the fault. Do this step to complete this task:

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a) Remove the hydraulic systems A and B pressure. To remove the pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

——————— END OF TASK ———————

805. Aileron Left or Aileron Right Does Not Move To Full Travel - Fault Isolation

A. Description

(1) The roll control system for the ailrons and the flight spoilers use cable force input from the control wheels to control the PCU's which supply hydraulic power to the move the ailerons. Two PCU's are connected through a crank and crackshaft to aileron body quadrants. If one body quadrant can not move the PCU's moves and shear the quadrant to disconnect it.

(2) This fault isolation procedure is used for either the left or right ailerons do not move through the full range of travel.

B. Possible Causes

(1) Aileron bus cables ABSA and ABSB tension.

(2) Aileron bus cables ABSA and ABSB blockage.

C. Related Data

(1) (SSM 27-10-01)

D. Initial Evaluation

(1) Do this check of the aileron control surface travel limits:

(a) Do a travel limits check of the left and right ailerons. To do the check, do this task: Aileron Travel Test, AMM TASK 27-11-00-700-809.

(b) If the left and right wing ailerons moved through the correct range of travel, then there was an intermittent fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To remove hydraulic pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(c) If the left aileron or the right aileron did not move through the full range of travel, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do a check of the aileron bus cables ABSA and ABSB tension. To check the tension, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

(a) If you needed to adjust the tension of aileron bus ables ABSA and ABSB, then do the Repair Confirmation at the end of this task.

(b) If you did not need to adjust the cable tension, then continue.

(2) Do a check of the aileron cables ABSA and ABSB for any objects that can cause a blockage.

(a) If you find a blockage, then do the these steps:

1) Remove the unwanted objects.

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

F. Repair Confirmation

(1) Do this check of the aileron control surface travel limits:

(a) Do a travel limits check of the left and right ailerons. To do this check, do this task: Aileron Travel Test, AMM TASK 27-11-00-700-809.

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(b) If the left wing and right wing ailerons moved through the correct range of travel, then you corrected the fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To remove the pressure, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

——————— END OF TASK ———————

806. Ailerons Left and Right Do Not Move To Full Travel - Fault Isolation

A. Description

(1) The roll control system for the ailrons and the flight spoilers use cable force input from the control wheels to control the PCU's which supply hydraulic power to the move the ailerons. Two PCU's are connected through a crank and crackshaft to aileron body quadrants. If one body quadrant can not move the PCU's moves and shear the quadrant to disconnect it.

(2) This fault isolation procedure is used when both left and right ailerons do not move through the full range of travel.

B. Possible Causes

(1) Left aileron body cables AA and AB tension.

(2) Left aileron body cables AA and AB blockage.

C. Related Data

(1) (SSM 27-10-01)

D. Initial Evaluation

(1) Do this check of the aileron control surface travel limits:

(a) Do the aileron travel test. To check the limits, do this task: Aileron Travel Test, AMM TASK 27-11-00-700-809.

(b) If the left and right wing ailerons moved through the correct range of travel, then there was an intermittent fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To remove hydraulic pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(c) If the left and right ailerons did not move through the full range of travel, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do a tension check of the left body cables AA and AB. To check the tension, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

(a) If you needed to adjust the tension of body cables AA and AB, then do the Repair Confirmation at the end of this task.

(b) If you did not need to adjust the cable tension, then continue.

(2) Do a check of the left body cables AA and AB for any objects that can cause a blockage.

(a) If you find any objects which cause a blockage, then do these steps:

1) Remove the unwanted objects.

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

F. Repair Confirmation

(1) Do this check of the aileron control surface travel limits:

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(a) To check the aileron travel limits, do this task: Aileron Travel Test, AMM TASK 27-11-00-700-809.

(b) If the left and right wing ailerons moved through the correct range of travel, then you corrected the fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To remove hydraulic pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

END OF TASK

807. Aileron Does Not Operate Left or Aileron Does Not Operate Right - Fault Isolation

A. Description

(1) The roll control system for the ailerons and the flight spoilers use cable force input from the control wheels to control the PCU's which supply hydraulic power to the move the ailerons. Two PCU's are connected through a crank and crackshaft to aileron body quadrants. If one body quadrant can not move the PCU's moves and shear the quadrant to disconnect it.

(2) This fault isolation procedure is used when the left aileron trim does not operate, or when the right aileron trim does not operate.

B. Possible Causes

(1) Blockage in aileron bus cables ABSA and ABSB.

(2) Tension in the aileron bus cables ABSA and ABSB.

C. Related Data

(1) (SSM 27-10-01)

(2) (SSM 27-11-11)

D. Initial Evaluation

(1) Do this check of the aileron control system movement:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic systems A and B. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Move the captain's or first officer's control wheel fully clockwise and check to make sure the left wing aileron moves down and the right wing aileron moves up.

(c) Move the captain's or first officer's control wheel fully counterclockwise and check to make sure the right wing aileron moves down and the left wing aileron moves up.

(d) If the left and right wing ailerons moved correctly, then there was an intermittent fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To remove the pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(e) If the left or right ailerons did not move, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this blockage check of the left or right aileron bus cables:

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(a) While turning the captain's or first officer's control wheel clockwise, make sure the aileron bus drums move together.

(b) If the aileron bus drums do not move together, then do these steps to check the aileron bus cables ABSA and ABSB for a blockage.

1) If you find a blockage, remove the objects and then do the Repair Confirmation at the end of this task.

2) If you did not find a blockage, then continue.

(2) Do a check of the left or right aileron bus cables ABSA and ABSB for correct tension. To check the tension, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

(a) If you needed to adjust the cable tension, do the Repair Confirmation at the end of this procedure.

F. Repair Confirmation

(1) Do this check of the aileron control system movement:

(a) Move the captain's or first officer's control wheel fully clockwise and check to make sure the left wing aileron moves down and the right wing aileron moved up.

(b) Move the captain's or first officer's control wheel fully counterclockwise and check to make sure the right wing aileron moves down and the left wing aileron moves up.

(c) If the left and right wing ailerons moved correctly when the control wheel was turned clockwise and counterclockwise, then you corrected the fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To remove hydraulic pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

——————— END OF TASK ———————

808. Slow Aileron Response to Control Wheel Input With Hydraulic Power On - Fault Isolation

A. Description

(1) This fault isolation procedure is used when the ailerons are slow to respond to control wheel input.

B. Possible Causes

(1) Aileron PCU

(2) Aileron bus cables ABSA and ABSB damage.

(3) Aileron bus cables ABSA and ABSB blockage.

(4) Aileron bus cables ABSA and ABSB tension.

C. Related Data

(1) (SSM 27-10-01)

(2) (SSM 27-11-11)

D. Initial Evaluation

(1) Do this check of the aileron control response:

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WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic systems A and B. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Move the captain's or first officer's control wheel clockwise and then counterclockwise and make sure their is no delay in aileron response to control wheel movement.

NOTE: The aileron's should begin to move immediately after the control wheel is turned clockwise or counterclockwise.

(c) If the aileron response to control wheel movement is satisfactory, there was an intermittent fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To remove the pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) If the ailerons response to control wheel input is not satisfactory, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this check of the aileron PCUs:

(a) On the pilot's overhead panel, set the FLT CONTROL A switch to ON and the FLT CONTROL B switch on OFF.

(b) Move the captain's or first officer's control wheel clockwise and then counterclockwise and check to make sure the bottom PCU moves the ailerons.

NOTE: If the PCU works correctly, the force needed to move the ailerons will be close to the force needed to move the ailerons with both working PCUs. If the PCU does not move the ailerons, you can still move the ailerons but the wheel force necessary to manually drive through the PCU will be much higher.

1) If the aileron PCU does not move move the ailerons, then do these steps:

a) Replace the bottom PCU. These are the tasks:
- Aileron Power Control Unit Removal, AMM TASK 27-11-71-000-801
- Aileron Power Control Unit Installation, AMM TASK 27-11-71-400-801

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

(c) On the pilot's overhead panel, set the FLT CONTROL A switch to OFF and the FLT CONTROL B switch to ON.

(d) Move the captain's or first officer's control wheel clockwise and then counterclockwise and check to make sure the top PCU moves the ailerons.

NOTE: If the PCU does work correctly, the force will be close to the force needed to move the ailerons with both working PCUs. If the PCU does not move the ailerons, you can still move the ailerons but the force necessary to manually drive through the PCU will be much higher.

1) If the aileron PCU does not move the ailerons, then do these steps:

a) Replace the top PCU. These are the tasks:
- Aileron Power Control Unit Removal, AMM TASK 27-11-71-000-801
- Aileron Power Control Unit Installation, AMM TASK 27-11-71-400-801

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

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(e) If you did not need to replace an aileron PCU, then continue.

(2) Do this check of the aileron bus cables ABSA and ABSB for damage:

(a) If the cables are chafed or damged, then do these steps:

1) Replace the aileron bus cables ABSA and ABSB. These are the tasks:
- Control Cables Removal, AMM TASK 20-10-91-000-801
- Control Cables Installation, AMM TASK 20-10-91-400-801

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

(b) If the aileron bus cables were not damaged, then continue.

(3) Do this check for blockage of the aileron bus cables ABSA and ABSB.

(a) If you find a blockage in the aileron bus cables, then do these steps:

1) Remove the objects.

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

(b) If you did not find a blockage, then continue.

(4) Do a check of the aileron bus cables ABSA and ABSB tension. To do the check, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

(a) If you needed to adjust the bus cable tension, then do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do this check of the aileron control system response:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Make sure the hydraulic systems A and B are pressurized. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Make sure FLT CONTROL A and FLT CONTROL B switches are in the on position.

(c) Move the captain's or first officer's control wheel clockwise and then counterclockwise and make sure there is no delay in aileron response to control wheel input.

NOTE: The aileron's should begin to move immediately after the control wheel is turned clockwise or counterclockwise.

(d) If the aileron response to control wheel input is satisfactory, then you corrected the fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To remove the pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

——————— END OF TASK ———————

809. High Control Wheel Force With Hydraulic Power Off - Fault Isolation

A. Description

(1) The roll control system for the ailerons and the flight spoilers use cable force input from the control wheels to control to control PCU's which supply hydraulic power to move the ailerons.

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(2) This fault isolation procedure is used when the control wheel force to move the ailerons is too high with hydraulic power off, but the control wheel force is satisfactory with hydraulic power on.

B. Possible Causes

(1) Aileron bus cables ABSA and ABSB damage

(2) Aileron bus cables ABSA and ABSB blockage

(3) Right body cables AA and AB damaged

(4) Right body cables AA and AB blockage

(5) Body cables AA and AB adjustment

(6) Balance panel seal

(7) Spoiler ratio changer linkage friction

(8) Spoiler ratio changer friction

(9) Spoiler mixer friction

C. Related Data

(1) (SSM 27-10-01)

(2) (SSM 27-11-11)

D. Initial Evaluation

(1) Do this check of the control wheel force:

(a) Remove the pressurize the hydraulic systems A and B. To depressurize, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

(b) Move the captain's or first officer's control wheel and check the force necessary to move the ailerons.

1) If the force needed to move the ailerons is not high, then there was an intermittent fault.

2) If the force needed to move the ailerons is high, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do a check of the aileron bus cables ABSA and ABSB for damage (AMM TASK 20-20-31-200-801).

(a) If the aileron bus cables ABSA or ABSB are chafed or damaged, then do these steps:

1) Replace the damaged cables. These are the tasks:

- Control Cables Removal, AMM TASK 20-10-91-000-801
- Control Cables Installation, AMM TASK 20-10-91-400-801

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

(b) If the aileron bus cables are not damaged, then continue.

(2) Do a blockage check of the aileron bus cables ABSA and ABSB.

(a) If the cables have a blockage, remove the objects, then do the Repair Confirmation at the end of this task.

(b) If the aileron bus cables ABSA and ABSB were not blocked, then continue.

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(3) Do a damage check of the right body cables AA and AB (AMM TASK 20-20-31-200-801).
   (a) If the right body cables AA or AB are chafed or damaged, then do these steps:
      1) Replace the damaged cables. These are the tasks:
         - Control Cables Removal, AMM TASK 20-10-91-000-801
         - Control Cables Installation, AMM TASK 20-10-91-400-801
      2) Do the Repair Confirmation at the end of this task.
   (b) If the right body cables AA and AB are not damaged, then continue.

(4) Do a blockage check of the right body cables AA and AB.
   (a) If the cables have a blockage, remove the objects, then do the Repair Confirmation at the end of this task.
   (b) If the left body cables AA and AB were not blocked, then continue.

(5) Do this adjustment check of the left and right body cables AA and AB.
   (a) Make sure that rig pin A/S-1 can be installed in the bottom of the transfer mechanism.
      1) If rig pin A/S-1 can not be easily installed, then do these steps:
         a) Adjust the body cables. To adjust the cables, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.
         b) Do the Repair Confirmation section at the end of this task.
      2) If rig pin A/S-1 can be easily installed, then continue.

(6) Do this check of the aileron balance panel seals (AMM TASK 27-11-31-000-801).
   (a) Make sure the balance panel seals are not damaged and the seal clearance is correct.
      1) Replace the seals if they are damaged.
      2) Adjust the seal clearance if the clearance is not correct.
   (b) If you replaced a seal or needed to adjust the seal clearance, then do the Repair Confirmation at the end of this task.
   (c) If the seals were not damaged or the seals did not need adjustment, then continue.

(7) Do a check of the spoiler ratio changer linkage (AMM TASK 27-61-31-000-801).
   (a) Disconnect the right body cables AA and AB.
   (b) Disconnect the input rod of the aileron spring cartridge and ratio changer.
   (c) Turn the control quadrant by hand and check the friction in the input linkage of the spoiler ratio changer linkage.
      1) If the friction is not satisfactory, then do these steps:
         a) Replace the linkage of the spoiler ratio changer.
         b) Do the Repair Confirmation at the end of this task.
      2) If the friction in the spoiler ratio changer input linkage is satisfactory, then continue.

(8) Do a check on the spoiler ratio changer to see if the friction is satisfactory.
   (a) If the friction is not satisfactory, do these steps:
      1) Replace the spoiler ratio changer. These are the tasks:
         - Spoiler Ratio Changer Removal, AMM TASK 27-61-31-000-801
         - Spoiler Ratio Changer Installation, AMM TASK 27-61-31-400-801
      2) Do the Repair Confirmation at the end of this task.

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(b) If the friction is satisfactory, then continue.

(9) Do a check on the spoiler mixer to see if the friction is satisfactory.

(a) If the friction is not satisfactory, do these steps:

1) Replace the spoiler mixer. These are the tasks:
- Spoiler Mixer Removal, AMM TASK 27-61-21-000-801
- Spoiler Mixer Installation, AMM TASK 27-61-21-400-801

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

F. Repair Confirmation

(1) Do a check of the control wheel force:

(a) Move the captain's or first officer's control wheel and check the force necessary to start moving the ailerons.

1) If the force needed to move the ailerons is satisfactory, then you corrected the fault. Do this step to complete the task:

a) Remove the hydraulic systems A and B pressure. To remove the pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

——————— END OF TASK ———————

810. Control Wheel Will Not Stay In The Center Position From One Direction - Fault Isolation

A. Description

(1) This fault isolation procedure is used for when the control wheel will not stay in the neutral position from one direction.

B. Possible Causes

(1) Body cable AA and AB adjustment

(2) Roll force transducer wire bundle too tight

(3) Aileron transfer mechanism

(4) Control column U-joint bearing

(5) Control column support bearing

C. Related Data

(1) (SSM 27-10-01)

(2) (SSM 27-11-11)

D. Initial Evaluation

(1) Do this check to see that the control wheel returns to the centered position following control wheel input:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic systems A and B. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

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(b) Make sure the control wheel centers. To do this, do this task: Control Wheel Centering Check, AMM TASK 27-11-00-700-804.

1) If the control wheel returns to the neutral position after turning the control wheel clockwise and counterclockwise, then there was an intermittent fault. Do this step to complete the task:

a) Remove the pressure from the aileron hydraulic systems A and B. To do this, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

(c) If the control wheel does not return to the neutral position after turning the control wheel clockwise and counterclockwise, then do the Fault Isolation Procedure.

E. Fault Isolation

(1) Do this adjustment check of the left and right body cables AA and AB.

(a) Insert rig pin A/S-1 into the transfer mechanism.

1) If rig pin A/S-1 can not be easily installed in the transfer mechanism, then do these steps:

a) Adjust the left and right body cables AA and AB. To adjust the cables, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

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

(b) If rig pin A/S-1 easily installs in the transfer mechanism, then continue.

(2) Do a check to see if the roll force transducer wire bundle is too tight (AMM PAGEBLOCK 22-11-11/401).

(a) Turn the captain's control wheel fully counterclockwise and make sure the roll force transducer wire bundleable does not prevent control wheel movement.

(b) If the roll force transducer wire bundle restricts control wheel movement, then do these steps:

1) Adjust the wire (AMM TASK 22-11-11-000-801).

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

(c) If the wire does not restrict the movement of the control wheel, then continue.

(3) Do this check of the aileron transfer mechanism:

(a) Disconnect the aileron spring cartridge in the wheel well.

(b) Turn the control wheel clockwise and counterclockwise 12 degrees and check the aileron transfer mechanism control drum bearing friction.

(c) If the control drum bearing friction is not satisfactory, then do these steps:

1) Replace the aileron transfer mechanism. These are the tasks:

- Aileron Transfer Mechanism Removal, AMM TASK 27-11-61-000-801
- Aileron Transfer Mechanism Installation, AMM TASK 27-11-61-400-801

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

(d) If the control drum bearing friction is satisfactory, then continue.

(4) Do this check of the control column U-joint bearing:

(a) Turn the captain's or first officer's control wheel and check for high friction in the U-joint bearing.

NOTE: An indication of high friction in the U-joint bearing is an intermittent ratchet when you turn the control wheel.

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1) If the control wheel friction is high, then do these steps:
   a) Replace the control column U-joint bearing.
   b) Do the Repair Confirmation at the end of this task.
2) If the friction in the control column is satisfactory, then continue.

(5) Do this heck of the captain's or first officer's control column support bearing:
   (a) Move the control column fully forward and then fully aft and check for exessive friction.
      1) If there is exessive friction in the control column, do these steps:
         a) Replace the control column support bearing. These are the tasks:
            - Control Column Support Bearing Removal, AMM TASK 27-31-54-000-801
            - Control Column Support Bearing Installation, AMM TASK 27-31-54-400-801
         b) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

(1) Do this check of the control wheel centering position. To do this, do this task: Control Wheel Centering Check, AMM TASK 27-11-00-700-804.
   (a) If the control wheel returns to the neutral position after turning the control wheel clockwise and counterclockwise, then you corrected the fault. Do this step to complete the task:
      1) Remove the pressure from the aileron hydraulic systems A and B. To depressurize, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

———————— END OF TASK ————————

811. At The Adjusted Position, The Control Wheel Forces Are Light In One Or Both Directions - Fault Isolation

A. Description

(1) This fault isolation procedure is used for when the force needed to turn the control wheel is light in the clockwise and/or counterclockwise directions.

B. Possible Causes

(1) Body cable AA and AB adjustment

(2) Aileron trim mechanism

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

D. Related Data

(1) (SSM 27-10-01)

(2) (SSM 27-11-11)

E. Initial Evaluation

(1) Do a check of the aileron control wheel forces.

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(a) Pressurize the hydraulic systems A and B. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(c) Check the control wheel force. To check the force, do this task: Aileron Control Wheel Force Test, AMM TASK 27-11-00-700-805.

1) If the control wheel force was correct, then there was an intermittent fault. Do this step to complete this task:

a) Remove the pressure from the aileron hydraulic systems A and B. To depressurize, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

(d) If the control wheel force was not correct, then do the Fault Isolation Procedure.

F. Fault Isolation

(1) Do this adjustment check of the left and right body cables AA and AB:

(a) Insert rig pin A/S-1 into the transfer mechanism.

1) If rig pin A/S-1 does not easily install in the transfer mechanism, then do these steps:

a) Adjust the left and right body cables AA and AB. To adjust the cables, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

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

(b) If rig pin A/S-1 does easily install in the transfer mechanism, then continue.

(2) Do this check of the aileron trim mechanism:

(a) Move and hold both aileron trim switches on the P8 panel to the LEFT WING DOWN position and check the movement of the aileron trim actuator.

NOTE: Both switches must be operated at the same time.

1) If the actuator movement is satisfactory, then check the aileron trim mechanism for loose or worn components. To do this, do this task: Aileron Transfer Mechanism Inspection, AMM TASK 27-11-61-210-801.

a) Replace the worn or loose components as necessary and then do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do a check of the control wheel forces. To check this force, do this task: Aileron Control Wheel Force Test, AMM TASK 27-11-00-700-805.

(a) If the control wheel force is correct, then you corrected the fault. Do this step to complete the task:

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1) Remove hydraulics system A and B pressure. To depressurize, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

END OF TASK

812. Aileron Left and Aileron Right Do Not Operate - Fault Isolation

A. Description

(1) This fault isolation procedure is used when both left and right ailerons do not operate.

B. Possible Causes

(1) Blockage in left body cables AA and AB.

(2) Tension in the left body cables AA and AB.

C. Related Data

(1) (SSM 27-10-01)

(2) (SSM 27-11-11)

D. Initial Evaluation

(1) Do this check of the aileron control system movement:

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(a) Pressurize the hydraulic systems A and B. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Move the captain's or first officer's control wheel fully clockwise, and check to make sure the left wing aileron moves down and the right wing aileron moves up.

(c) Move the captain's or first officer's control wheel fully counterclockwise, and check to make sure the right wing aileron moves down and the left wing aileron moves up.

(d) If both left and right wing ailerons operated correctly when the control wheel was turned clockwise and counterclockwise, then there was an intermittent fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To depressurize, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(e) If the left and right ailerons did not operate, then do the Fault Isolation Procedure.

E. Fault Isolation Procedure

(1) Do a check for a blockage in the left body cables AA and AB.

(a) If you find a blockage in body cables AA and AB, then remove the objects, and do the Repair Confirmation at the end of this task.

(b) If you did not find a blockage in the left body cables, then continue.

(2) Do a tension check of the left body cables AA and AB. To check the tension, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

(a) If you needed to adjust the cable tension, then do the Repair Confirmation at the end of this task.

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F. Repair Confirmation

(1) Do this check of the aileron control surface movement:

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(a) Make sure the hydraulic systems A and B are pressurized. To pressurize, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Move the captain's or first officer's control wheel fully clockwise check to make sure the left wing aileron moves up and the right wing aileron moves down.

(c) Move the captain's or first officer's control wheel fully counterclockwise and check to make sure the ring wing aileron moves down and the left wing aileron moves up.

(d) If the left and right wing ailerons moved correctly, then you corrected the fault. Do this step to complete this task:

1) Remove the hydraulic systems A and B pressure. To depressurize, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

——————— END OF TASK ———————

813. Captain's or First Officer's Control Wheel/Column Does Not Move Freely - Fault Isolation

A. Description

(1) The flight crew use two conventional control wheels to control roll. A transfer mechanism supplies a mechanical link between the two control wheels. If the control wheel cannot move, the transfer mechanism permits the pilot to operate the other control wheel. If the right control wheel cannot move, the captain can operate the left control wheel after overriding the force of the torsion spring and the force of the feel and centering mechanism. If the left control wheel cannot move, the first officer can operate the right control wheel after overriding only the force of the torsion spring.

(2) This fault isolation procedure is used when the captain's or first officer's control wheel does not move freely.

B. Possible Causes

(1) Transfer cables ACBA and ACBB rigging

(2) Body cables AA and AB rigging

(3) Aileron feel and centering unit adjustment

(4) Feel and centering unit cam or cam follower bearing

(5) Aileron transfer mechanism bearing

(6) Transfer mechanism cable rigging

(7) Control wheel and control column friction

(8) PCU control rod end damage

(9) PCU control valve damage

(10) Aileron trim mechanism adjustment

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(11) Aileron autopilot actuator adjustment

(12) Aileron body quadrant friction

(13) Body cables AA and AB interference.

(14) Flight controls hydraulic module malfunction

C. Related Data

(1) (SSM 27-10-01)

(2) (SSM 27-11-11)

D. Circuit Breakers

(1) Do this task: Supply Electrical Power, AMM TASK 24-22-00-860-811.

(2) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	12	C00204	FLIGHT CONTROL SHUTOFF VALVES SPOILER
B	13	C00363	FLIGHT CONTROL SHUTOFF VALVES FLT CONT
C	13	C01074	FLIGHT CONTROL SHUTOFF VALVES FLT CONT
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(3) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	11	C00133	INDICATOR MASTER DIM DIM/TST CONT
D	12	C00310	INDICATOR MASTER DIM BAT
D	13	C00311	INDICATOR MASTER DIM BUS 1
D	14	C00312	INDICATOR MASTER DIM BUS 2
E	12	C00314	INDICATOR MASTER DIM SECT 2
E	13	C00315	INDICATOR MASTER DIM SECT 3
E	14	C00316	INDICATOR MASTER DIM SECT 4
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD
F	11	C00317	INDICATOR MASTER DIM SECT 5
F	12	C00318	INDICATOR MASTER DIM SECT 6

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

(5) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

E. Initial Evaluation

(1) Set the aileron trim to zero.

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(2) Move the speedbrake handle to the down and locked position.

(3) Verify that the thrust levers are at the idle position.

(4) Do these steps to make sure the aileron control system is rigged correctly.

(a) Make sure you can freely install rig pin A/S-1 from rig pin kit, SPL-1585 in the aileron transfer mechanism.

(b) Make sure you can freely install rig pin A/S-15 from rig pin kit, SPL-1585 in the aileron trim actuator.

(c) Remove rig pins A/S-1 and A/S-15.

(5) Do this check of the aileron control wheel and control column movement.

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(a) Pressurize the hydraulic systems A and B. To pressurize them, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Move the Captain's or First Officer's control wheel fully clockwise and then fully counterclockwise and make sure the control wheel moves freely.

NOTE: Do not turn the control wheel more than 20 degrees per second.

(c) Move the Captain's or First Officer's control column fully forward and the fully aft and make sure the control column moves freely.

(d) If the control wheel and control column moved freely, then there was an intermittent fault. Do this step to complete the task:

1) Remove the hydraulic systems A and B pressure. To depressurize, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

(e) If the control wheel or control column did not move freely, then do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Do this task: Aileron Feel and Centering Unit Adjustment, AMM TASK 27-11-00-820-804.

NOTE: Typically, 3–4 threads of the eyebolts are visible beyond the adjustment nuts when the centering unit is adjusted correctly.

(a) When you do the adjustment, do these steps:

1) Disconnect the springs from the centering unit.

2) Rotate the cam follower bearing.

3) Check the bearing outer race and cam surface for wear.

4) If the bearing or cam are worn, replace the worn parts.

a) These are the tasks to replace the bearing.

- Cam Follower Bearing Removal, AMM TASK 27-11-81-000-802
- Cam Follower Bearing Installation, AMM TASK 27-11-81-400-802

b) These are the tasks to replace the cam.

- Aileron Feel and Centering Unit Removal, AMM TASK 27-11-81-000-801

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- Aileron Feel and Centering Unit Installation, AMM TASK 27-11-81-400-801

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

5) If the bearing and cam are not worn, continue with the fault isolation.

(2) Disconnect the aileron transfer cables, ACBA and ACBB, and do these steps:

(a) Disconnect the aileron spring cartridge.

(b) Pressurize hydraulic systems A and B. To pressurize them, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(c) Turn the Captain's control wheel fully clockwise and counterclockwise.

NOTE: Do not turn the control wheel more than 20 degrees per second.

(d) If the control wheel moves freely, do these steps:

1) Loosen the right side body cables, AA and AB, to 50 lbf (222 N) tension.

2) Turn the First Officer's control wheel fully clockwise and counterclockwise.

NOTE: Do not turn the control wheel more than 20 degrees per second.

a) If the control wheel turns freely, do these steps:

<1> Remove the pressure from hydraulic systems A and B. To remove pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

<2> Replace the aileron transfer mechanism. These are the tasks:

- Aileron Transfer Mechanism Removal, AMM TASK 27-11-61-000-801
- Aileron Transfer Mechanism Installation, AMM TASK 27-11-61-400-801

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

b) If the control wheel does not turn freely, do these steps:

<1> Remove the pressure from hydraulic systems A and B. To remove pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

<2> Replace the control wheel bearing.

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

(3) Remove the pressure from hydraulic systems A and B. To remove pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(4) Do a visual check of the control rod ends of the PCU linkage for damage.

(a) If you find parts that were damaged or worn in the PCU linkage, then do these steps:

1) Replace the PCU linkage. These are the tasks:

- Aileron Power Control Unit Linkage Removal, AMM TASK 27-11-14-000-801
- Aileron Power Control Unit Linkage Installation, AMM TASK 27-11-14-400-801

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

(b) If you do not find any worn or damaged parts in the PCU linkage, then continue with the fault isolation.

(5) Do this check of the Primary and Secondary PCU input pogos to verify that they are not mis-rigged and causing a force fight between the PCUs:

(a) Do a visual check of the PCU valve arm relative to the PCU housing. The valve arm must be centered between the stops.

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1) If the valve arm is not centered between the stops, adjust the valve arm to center it (AMM TASK 27-11-00-820-802).

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

(6) Do a check of the PCU main control valve for excessive friction.

(a) Disconnect the 4 pogos from the aileron PCUs. To disconnect the pogos, do this task: Aileron Power Control Unit Removal, AMM TASK 27-11-71-000-801.

(b) Install a force gauge, STD-1397 on the primary or secondary pogo attach point of the aileron PCU and check the breakout force of the PCU input valve.

(c) If the PCU valve breakout force is 4.0 lbf (17.8 N) or less, the PCU input valve friction is acceptable. Continue with the fault isolation.

(d) If the PCU valve breakout force is more than 4.0 lbf (17.8 N), do these steps:.

1) Repair or replace the PCU. These are the tasks:
- Aileron Power Control Unit Removal, AMM TASK 27-11-71-000-801
- Aileron Power Control Unit Installation, AMM TASK 27-11-71-400-801

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

(7) Do this check of the Captain's control wheel.

(a) Disconnect the left side body cables AA and AB.

(b) Turn the control wheel fully clockwise and counterclockwise.

NOTE: Do not turn the control wheel more than 20 degrees per second.

(c) If the control wheel does not turn freely, do these steps.

1) Replace the control wheel bearing.

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

(d) If the control wheel turns freely, continue with the fault isolation.

(8) Do the following checks of the aileron trim mechanism:

(a) Verify that the cam roller is not dirty and can turn freely. Clean as necessary.

(b) Verify that the cam surface is not dirty or corroded. Clean as necessary.

(9) Do this check of the autopilot aileron actuator.

(a) Disconnect the autopilot aileron actuator input rod from the centering unit.

(b) Make sure the bearings in the input rod rotate freely.

(c) Move the input rod through its range of motion.

(d) Make sure the force needed to move the input rod is not more than 0.5 lbf (2.2 N).

1) If the force needed to move the input rod is more than 0.5 lbf (2.2 N), do these steps:

a) Remove the autopilot aileron actuator input rod, which connects the autopilot actuators to the centering unit.

b) Remove the autopilot aileron actuator interconnect rod, which connects the two autopilot actuators.

c) Make sure the bearings in the connecting rods move freely.

d) For each of the autopilot aileron actuator levers, apply a force tangential to the lever to move it through its range of motion.

e) Make sure the force needed to move each lever is not more than 0.25 lbf (1.11 N).

f) If the force needed to move the lever is more than 0.25 lbf (1.11 N), do these steps.

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<1> Replace the autopilot aileron actuator. These are the tasks:
- Autopilot Aileron Actuator Removal, AMM TASK 22-11-25-000-801
- Autopilot Aileron Actuator Installation, AMM TASK 22-11-25-400-801

<2> Do the Repair Confirmation at the end of this task.

2) If the force needed to move the input rod is not more than 0.5 lbf (2.2 N), continue with the fault isolation.

(10) Make sure the aileron feel and centering unit turns freely.

(a) If the feel and centering unit does not turn freely, do these steps:

1) Replace the feel and centering unit. These are the tasks:
- Aileron Feel and Centering Unit Removal, AMM TASK 27-11-81-000-801
- Aileron Feel and Centering Unit Installation, AMM TASK 27-11-81-400-801

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

(b) If the feel and centering unit turns freely, continue with the fault isolation.

(11) Do this check of the aileron body quadrant for excessive friction or binding.

(a) Turn the control quadrant and check for friction in the bearings and pressure seal of the control quadrant shaft.

1) If you feel excessive friction, then do these steps:

a) Replace the aileron body quadrant (AMM TASK 27-11-81-000-801).

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

2) If you do not find excessive friction in the control quadrant, continue with the fault isolation..

(12) Ceck for the following conditions in the left and right body cable runs:

(a) A cable pulley that cannot turn easily.

1) Lift the cable slightly off of each pulley and turn the pulley in each direction. If the pulley does not easily turn, the pulley needs to be replaced. Replace as necessary, and do the Repair Confirmation at the end of this task.

NOTE: Inspection of the cable body run requires removing the floor panels or the cargo liners.

(b) A bent cable pulley.

1) Lift the cable slightly off of each pulley and turn the pulley one revolution in each direction. If the pulley moves out of alignment with the cable or if the cable touches the pulley guides as the pulley turns, the pulley is bent and needs to be replaced. Replace the pulley as necessary, and do the Repair Confirmation at the end of this task.

(c) Unwanted objects (such as insulation blankets, cargo liners, tools, etc.) interfering with the cable run.

1) Locate and remove any unwanted objects, as necessary. Do the Repair Confirmation at the end of this task.

(13) If no problem is found with the control system components, replace the flight controls hydrualic module. These are the tasks:
- Flight Controls Hydraulic Module Removal, AMM TASK 27-09-21-000-801
- Flight Controls Hydraulic Module Installation, AMM TASK 27-09-21-400-801

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

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G. Repair Confirmation

(1) Reconnect all linkages in the aileron control system.

(a) Aileron spring cartridge

(b) Aileron PCU linkage

(c) Aileron PCU pogos

(d) Autopilot aileron actuator input rod

(2) Reconnect all cables in the aileron control system.

(a) Left and right body cables AA and AB

(b) Aileron transfer cables ACBA and ACBB

(3) Make sure the cables are at the correct tension.

(a) If necessary, do this task: Aileron Cables Adjustment, AMM TASK 27-11-00-820-801.

(4) Do this check of the aileron control wheel and column movement:

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(a) Make sure hydraulic systems A and B are pressurized. To pressurize them, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Turn the Ccaptain's, then the First Officer's, control wheel fully clockwise and then fully counterclockwise. Using the force gauge, STD-1397, push down on the handgrip knobs of the control wheel. Make sure that no excessive force is required to turn the control wheel. Control wheel forces should not exceed the values in Table 201.

Table 201 Force Required at Control Wheel Positions

Control Wheel Position Degrees	Force Required pound-inches (newton-meters)
Breakout	29.0 (3.28)
5	35.5 (4.01)
20	56.0 (6.33)
40	89.5 (10.11)
75	123.5 (13.96)

(c) Move the Captain's then the First Officer's control column fully forward and then fully aft and check to make sure the control column moves smoothly.

(d) If the control wheel and control column move smoothly, then you corrected the fault.

1) Remove pressure from the hydraulics A and B systems. To remove the hydraulic pressure, do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, AMM TASK 27-11-00-860-801.

2) Restore the electrical system to its pre-test configuration, as necessary. Do this task: Remove Electrical Power, AMM TASK 24-22-00-860-812.

——————— END OF TASK ———————

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814. Wing Down Aileron Trim Does Not Operate Left or Wing Down Aileron Trim Does Not Operate Right - Fault Isolation

A. Description

(1) In manaual aileron trim operation, the pilot trims out unwanted control wheel forces with aileron trim switches and the trim actuator. When the pilot moves the aileron trim switches on the aisle stand, the switches send a signal to the aileron trim actuator. The trim actuator moves the feel and centering. The feel and centering unit provides input to the aileron PCU which mechanically moves the aileron through the wing cables and quadrant.

(2) This fault isolation procedure is used when the ailerons do not operate when the aileron trim control switches are held in the LEFT WING DOWN position or when the aileron doe not operate when the aileron trim control switches are held in the RIGHT WING DOWN position.

B. Possible Causes

(1) Aileron trim actuator, M1124

(2) Wiring problem

(3) Aileron trim control switch on the aileron/rudder trim control module, M1126

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

D. Related Data

(1) (SSM 27-10-01)

(2) (SSM 27-11-11)

(3) (WDM 27-11-11)

E. Initial Evaluation

(1) Do this check of the aileron trim switch operation:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic systems A and B. To pressurize them, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(c) For the left wing aileron trim system that does not operate, do these steps:

1) Move both aileron trim switches on the P8 panel to the LEFT WING DOWN position.

NOTE: Both switches must be operated at the same time.

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2) If the left and right wing ailerons do not move, then do the Fault Isolation Procedure below.

3) If the left and right wing ailerons do move, then there was an intermittent fault. Do this step to complete this task:

a) Remove the hydraulic systems A and B pressure. To remove pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) For the right wing aileron trim system that does not operate, do these steps:

1) Move both aileron trim switches on the P8 panel to the RIGHT WING DOWN position.

NOTE: Both switches must be operated at the same time.

2) If the left and right wing ailerons do not move, then do the Fault Isolation Procedure below.

3) If the left and right wing ailerons do move, then there was an intermittent fault. Do this step to complete the task:

a) Remove the hydraulic systems A and B pressure. To remove pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

F. Fault Isolation Procedure

(1) Do this check of the aileron trim actuator, M1124:

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(b) Disconnect connector D2928 from the aileron trim actuator, M1124.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(d) Do these steps if the left aileron trim system did not operate:

1) Move and hold the aileron trim switches on the P8 panel to the LEFT WING DOWN position.

2) Make sure there is 115v AC between pin 3 and pin 2 of connector D2928.

3) If there is 115v AC between pin 3 and pin 2 of connector D2928, then do these steps:

a) Release the aileron trim switches.

b) Replace the aileron trim actuator, M1124. These are the tasks:
- Aileron Trim Actuator Removal, AMM TASK 27-11-54-000-801
- Aileron Trim Actuator Installation, AMM TASK 27-11-54-400-801

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

4) If there is not 115v AC between pin 3 and pin 2 of connector D2928, then release the aileron trim switches and continue.

(e) Do these steps if the right aileron trim system is not operating:

1) Move and hold the aileron trim switches on the P8 panel to the RIGHT WING DOWN position.

2) Make sure there is 115v AC between pin 1 and pin 2 of connector D2928.

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3) If there is 115v AC betweem pin 1 and pin 2 of connector D2928, then do these steps:
   a) Release the aileron trim switches.
   b) Replace the aileron trim actuator, M1124. These are the tasks:
      - Aileron Trim Actuator Installation, AMM TASK 27-11-54-400-801
      - Aileron Trim Actuator Removal, AMM TASK 27-11-54-000-801
   c) Do the Repair Confirmation at the end of this task.
4) If there is not 115v AC between pin 1 and pin 2 of connector D2928, then release the aileron trim switches and then continue.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(g) Re-connect connector D2928 to the aileron trim actuator, M1124.

(2) Do this check of the wiring:
(a) Disconnect connector D2930 from the aileron/rudder trim control panel.
(b) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(c) Move and hold the aileron trim switches to the RIGHT WING DOWN position.
(d) Make sure there is 115v AC between pin 10 pin 8 of D2930.
1) If there is not 115v AC, then do these steps:
   a) Do a wiring check between structure ground and pin 8 of connector D2930.
   b) Do a wiring check between the circuit breaker 6D18, FLIGHT CONTROL TRIM CONT AIL, and pin 10 of D2930.
   c) If you needed to repair any of these circuits, then do the Repair Confirmation at the end of this task.
2) If there is 115v AC, then continue.

(e) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(f) Re-connect connector D2930 to the aileron/rudder trim control panel.

(3) Do this check of the aileron trim control switches:
(a) Remove connector D40222P from the E4-2 shelf.
(b) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(c) Move and hold the aileron trim switches to the RIGHT WING DOWN position.

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(d) Do a check for 115v AC between pins A3 and A1 of D40222P.

(e) Release the aileron trim switches.

(f) Move and hold the aileron trim switches to the LEFT WING DOWN position.

(g) Do a check for 115v AC between pins A2 and A1 of D40222P.

(h) Release the aileron trim switches.

(i) If there is not 115v AC between pins A2 and A1 or if there is not 115v AC between pins A3 and A1, then do these steps:

1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

2) Replace the aileron trim control switch. These are the tasks:
- Trim Control Switches Removal, AMM TASK 27-11-94-000-802
- Trim Control Switches Installation, AMM TASK 27-11-94-400-802

3) Re-connect connector D40222P in the E4-2 shelf.

4) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

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

(j) If there is 115v AC between pins A3 and A1, and between pins A2 and A1 of D40222P, then continue.

(4) Do a wiring check between these pins of connector D40222P at the E4-2 shelf and connector D2928 at the aileron trim actuator.

D40222P		D2928
pin A2	- - - - - - - - - - - - - - - - - -	pin 3
pin A1	- - - - - - - - - - - - - - - - - -	pin 2
pin A3	- - - - - - - - - - - - - - - - - -	pin 1

(a) If you needed to repair the wiring, then do the Repair Confirmation at the end of this task.

(b) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(c) Re-connect connector D40222P and connector D2928.

(d) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

G. Repair Confirmation

(1) Do this check of the aileron trim switch system:

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(a) Make sure the hydraulic systems A and B are pressurized. To pressurize them, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(c) To make sure the left aileron trim switch operates, do these steps:

1) Move both aileron trim switches on the P8 panel to the LEFT WING DOWN position.

NOTE: Both switches must be operated at the same time.

2) If the left and right wing ailerons move, then you corrected the fault. Do this step to complete this task:

a) Remove the hydraulic systems A and B pressure. To remove pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) To make sure the right aileron trim switch operates, do these steps:

1) Move both aileron trim switches on the P8 panel to the RIGHT WING DOWN position.

NOTE: Both switches must be operated at the same time.

2) If the left and right wing ailerons move, then you corrected the fault. Do this step to complete this task:

a) Remove the hydraulic systems A and B pressure. To remove pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

——————— END OF TASK ———————

815. Wing Down Aileron Trim Does Not Operate Left and Right - Fault Isolation

A. Description

(1) In manual aileron trim operation, the pilot trims out unwanted control wheel forces with aileron trim switches and the trim acutator. When the pilot moves the aileron trim switches on the aisle stand, the switches send a signal to the aileron trim actuator. The trim actuator moves the feel and centering unit. This movement goes to the aileron PCU. Aileron PCU movement mechanically moves the aileron through the wing cables and quadrant.

(2) This fault isolation procedure is used when the ailerons fail to operate for LEFT WING DOWN and RIGHT WING down aileron trim switch commands.

B. Possible Causes

(1) Aileron trim actuator, M1124

(2) Aileron trim control switch on the aileron/rudder trim control module, M1126

(3) Wiring problem

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

D. Related Data

(1) (SSM 27-10-01)

(2) (SSM 27-11-11)

(3) (WDM 27-11-11)

E. Initial Evaluation

(1) Do this check of the aileron trim switch operation:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic systems A and B. To pressurize them, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(c) Move both aileron trim switches on the P8 panel to the LEFT WING DOWN position and make sure the left and right wing ailerons move.

NOTE: Both switches must be operated at the same time.

(d) Move both aileron trim switches on the P8 panel to the RIGHT WING DOWN position and make sure the left and right wing ailerons move.

NOTE: Both switches must be operated at the same time.

(e) If the left and right wing ailerons do not move when the aileron switches were moved to the LEFT WING DOWN and RIGHT WING DOWN positions, then the do the Fault Isolation Procedure below.

(f) If the left and right wing ailerons do move correctly when the aileron switches were held in the LEFT WING DOWN and RIGHT WING DOWN positions, then there was an intermittent fault. Do this step to complete the task:

1) Remove the hydraulic systems A and B pressure. To remove the pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

F. Fault Isolation Procedure

(1) Do this check of the aileron trim actuator, M1124:

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(b) Disconnect connector D2928 from the aileron trim actuator, M1124.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(d) Move and hold the aileron trim switches on the P8 panel to the RIGHT WING DOWN position.

(e) Make sure there is 115v AC between pins 1 and 2 of connector D2928.

(f) Move and hold the aileron trim switches on the P8 panel to the LEFT WING DOWN position.

(g) Make sure there is 115v AC between pins 3 and 2 of connector D2928

(h) If there is 115v AC between pins 1 and 2 and 115v AC between pins 3 and 2 above, then do these steps:

1) Release the aileron trim switches.

2) Replace the aileron trim actuator, M1124. These are the tasks:
- Aileron Trim Actuator Removal, AMM TASK 27-11-54-000-801
- Aileron Trim Actuator Installation, AMM TASK 27-11-54-400-801

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

(i) If there is not 115v AC between pin 1 and pin 2 and between pin 3 and pin 2 of connector D2928, then continue.

(j) Release the aileron trim switches.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(l) Re-connect connector D2928 to the aileron trim actuator, M1124, then continue.

(2) Do a check of the aileron trim switch outputs from the aileron/rudder trim control module, M1126:

(a) Make sure that this circuit breaker is open:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(b) Remove connector D40222P from the E4-2 shelf.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(d) Move and hold the aileron trim switches to the RIGHT WING DOWN position.

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(e) Make sure there is 115v AC between pins A3 and A1 of connector D40222P.

(f) Move and hold the aileron trim switches to the LEFT WING DOWN position.

(g) Make sure there is 115v AC between pins A2 and A1 of connector D40222P.

(h) If there is 115v AC between pins A3 and A1 and pins A2 and A1, then skip the next step.

(3) Do a check of the aileron/rudder trim control switches and wiring.

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(b) Remove connector D2930 from the P8-43 Panel.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(d) Do a check of the wire between pin 8 of connector D2930 and structure ground.

1) Repair the circuit, if it is necessary.

(e) Do a check of the circuit between circuit breaker 6D18, FLIGHT CONTROL TRIM CONT AIL, and pin 10 of connector D2930.

(f) If you needed to repair these circuits, then do these steps:

1) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

2) Re-connect connector D2930 to the P8-43 Panel.

3) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

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

(g) If you do not find a problem with these circuits, then do these steps:

1) Replace the aileron switches. These are the tasks:
- Trim Control Switches Removal, AMM TASK 27-11-94-000-802
- Trim Control Switches Installation, AMM TASK 27-11-94-400-802

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

(4) Do a wiring check between the aileron trim switch and the aileron trim actuator.

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

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(b) Disconnect connector D40222P at the E4-2 shelf and disconnect connector D2928 from the aileron trim actuator.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(d) Do a wiring check between these pins of connector D40222P at the E4-2 shelf, and connector D2928 at the aileron trim actuator.

D40222P		D2928
pin A3	- - - - - - - - - - - - - - - - - -	pin 1
pin A2	- - - - - - - - - - - - - - - - - -	pin 3
pin A1	- - - - - - - - - - - - - - - - - -	pin 2

1) If you needed to repair any of these circuits, then do the Repair Confirmation at the end of this task.

(e) Do a check to make sure the pins and sockets of connectors D40222P, D2928, and the mating connectors, are not damaged.

1) If you needed to repair any pins or sockets, then do the Repair Confirmation at the end of this task.

(f) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

(g) Re-connect connector D2930 and connector D2928.

(h) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

G. Repair Confirmation

(1) Do this check of the aileron trim switch operation:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Make sure hydraulic systems A and B are pressurized. If not pressurized, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	18	C00786	FLIGHT CONTROL TRIM CONT AIL

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(c) Move and hold both aileron trim switches on the P8 panel to the RIGHT WING DOWN position and make sure the left and right wing ailerons move correctly.

NOTE: Both switches must be operated at the same time.

(d) Move and hold both aileron trim switches on the P8 panel to the LEFT WING DOWN position and make sure the left and right ailerons move correctly.

NOTE: Both switches must be operated at the same time.

(e) If the left and right wing ailerons moved correctly when the aileron trim switches were held to the LEFT WING DOWN and RIGHT WING DOWN, the you corrected the fault. Do this step to complete the task.

1) Remove the hydraulic systems A and B pressure. To remove pressure, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

——————— END OF TASK ———————

816. High Aileron Trim - Fault Isolation

A. Description

(1) The lateral trim that is necessary to keep straight and level flight during cruise, and with the flaps extended, must not be more than the limits shown in Table 202.

NOTE: There are no specific limits or requirements for lateral trim outside of these flight conditions.

Table 202 Lateral Trim Limits

Flight Condition	Aileron Trim	Rudder Trim	Airspeed	Altitude (feet)
Cruise (Flaps UP/Gear UP)	0.75 unit	0.5 unit	0.78 mach	37,000 or higher
Low Speed (Flaps UP/Gear UP)	0.75 unit	0.75 unit	250 kias	10,000 to 17,000
Flaps Extended to 1 unit (Gear UP)	1.0 unit *[1]	1.0 unit	Flaps 1 Maneuver Speed	10,000 to 17,000
Flaps Extended to 15 units (Landing Gear Extended)	1.0 unit *[1] *[2]	1.0 unit	Flaps 15 Maneuver Speed	10,000 to 17,000
Flaps Extended to 40 units (Landing Gear Extended)	1.3 unit *[2]	1.0 unit	Vref + 5	10,000 to 17,000

*[1] The aileron trim change between flap positions 1 and 15 must be less than 1.0 unit.

*[2] The aileron trim change between flap positions 15 and 40 must be less than 1.4 units. An aileron trim requirement shift from side to side is acceptable, provided it is withing the limit of 1.4 units.

B. Initial Evaluation

(1) Do this task: Trailing Edge Flap Drive System Inspection, AMM TASK 27-51-00-210-801.

(a) Replace or repair any damaged parts.

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(2) Do this task: Trailing Edge Flap Actuation System Inspection, AMM TASK 27-51-00-210-802.

(a) Replace or repair any damged parts.

(3) Do a test flight to find the lateral trim necessary for straight and level flight in the following conditions:

NOTE: Use the captains control wheel to determine the trim limits. One unit of aileron trim is equal to six degrees of control wheel rotation.

NOTE: There are no specific limits or requirements for lateral trim outside of these flight conditions.

(a) To find the aileron trim necessary during cruise, fly with these conditions:

1) Flight speed: Approximately 0.78 mach.
2) Altitude: 37,000 feet or higher.
3) Fuel load: Balanced in the limit of 150 pounds (68 kilograms).
4) Throttles: Balanced thrust in the limit of 1 percent N1 difference, with autothrottles OFF.
5) Autopilot engaged with in HDG SEL, with the wings level.

(b) Apply rudder trim to get zero heading change.

NOTE: Keep this rudder trim position through the rest of the trim conditions.

(c) Disengage the autopilot.

(d) Apply aileron trim to keep the wings level and maintain zero heading change.

(e) Write down the amount and direction of aileron trim necessary to maintain straight and level flight.

NOTE: This is the trim for the Cruise condition.

(f) To find the aileron trim necessary for low speed cruise, and with the flaps extended, fly with these conditions:

1) Altitude: Between 10,000 to 17,000 feet.
2) Fuel load: Balanced in the limit of 150 pounds (68 kilograms).
3) Throttles: Balanced thrust in the limit of 1 percent N1 difference, with autothrottles OFF.
4) Autopilot OFF.
5) Rudder trim in the same position as the cruise condition.

(g) Fly at 250 kias, with the flaps retracted.

(h) Apply aileron trim to keep the wings level and maintain zero heading change.

(i) Write down the amount and direction of aileron trim necessary to maintain straight and level flight.

NOTE: This is the trim for the Low Speed.

(j) Change the airspeed to flaps 1 maneuvering speed, and extend the flaps to the 1-unit position.

(k) Apply aileron trim to keep the wings level and maintain zero heading change.

(l) Write down the amount and direction of aileron trim necessary to maintain straight and level flight.

NOTE: This is the trim for the flaps 1 unit.

(m) Change the airspeed to flaps 15 maneuvering speed, and extend the flaps to the 15-unit position, and extend the landing gear.

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(n) Apply aileron trim to keep the wings level and maintain zero heading change.

(o) Write down the amount and direction of aileron trim necessary to maintain straight and level flight.

NOTE: This is the trim for the flaps 15 units.

(p) Change the airspeed to Vref +5 knots, and extend the flaps to the 40-unit position.

(q) Apply aileron trim to keep the wings level and maintain zero heading change.

(r) Write down the amount and direction of aileron trim necessary to maintain straight and level flight.

NOTE: This is the trim for the flaps 40 units.

(4) Adjustment of the lateral trim is necessary when the trim is not in the limits shown in Table 202. To adjust the lateral trim, do this task: Trailing Edge Flap Adjustment for Lateral Trim, AMM TASK 27-09-71-820-801.

——————— END OF TASK ———————

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801. Rudder Trim Does Not Operate Left - Fault Isolation

A. Description

(1) The pilots trim out unwanted rudder pedal forces with the rudder trim switches and rudder trim actuator. When the pilots move the rudder trim switches on the aisle stand, the switches send a signal to the rudder trim actuator. The trim actuator moves the rudder feel and centering unit. This movement goes to the rudder PCU. Rudder PCU movement mechanically moves the rudder.

(2) The rudder trim knob mechanically connects to the two rudder trim switches. They are part of the aileron/rudder trim control module.

(3) The pilot controls the rudder trim with the rudder trim knob. The rudder trim switches directly control the rudder trim actuator to move left or right.

B. Possible Causes

(1) Wiring problem

(2) Aileron/rudder trim control module, M1126

(3) Rudder Trim Actuator, M1125

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	19	C00787	FLIGHT CONTROL TRIM CONT RUD

D. Related Data

(1) (SSM 27-21-11)

(2) (WDM 27-21-11)

E. Initial Evaluation

(1) Do a check of the rudder trim system:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic systems A and B. To pressurize them, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) Turn the rudder trim knob to the NOSE LEFT position.

(c) If the rudder does not move left, then do the Fault Isolation Procedure below.

(d) If the rudder moves left, then there was an intermittent fault. Do this step to complete the task:

1) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

F. Fault Isolation Procedure

(1) Do this check of the rudder trim actuator, M1125:

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(a) Disconnect connector D2932 from the rudder trim actuator, M1125.

(b) Turn and hold the rudder trim knob to the NOSE LEFT position.

(c) Do a check for 115v AC from pin 2 to pin 13 of connector D2932 (WDM 27-21-11).

(d) If there is 115v AC at pin 2 of connector D2932, then do these steps:

1) Release the rudder trim knob.

2) Replace the rudder trim actuator, M1125. These are the tasks:
- Rudder Trim Actuator Removal, AMM TASK 27-21-87-000-801
- Rudder Trim Actuator Installation, AMM TASK 27-21-87-400-801

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

(e) If there is not 115v AC at pin 2 of connector D2932, then continue.

1) Release the rudder trim knob.

(2) Do this wiring check:

(a) Remove the aileron/rudder trim control module, M1126. To remove it, do this task: Aileron and Rudder Trim Control Module Removal, AMM TASK 27-11-94-000-801.

(b) Do a wiring check between these pins of connector D3116 at the aileron/rudder trim panel, P8-43 and connector D2932 at the rudder trim actuator, M1125 (WDM 27-21-11):

D3116		D2932
pin 12	- - - - - - - - - - - - - - - - - -	pin 2

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D2932.

3) Re-install the aileron/rudder trim control module, M1126. To install it, do this task: Aileron and Rudder Trim Control Module Installation, AMM TASK 27-11-94-400-801.

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

(d) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D2932.

(3) Install a new aileron/rudder trim control module, M1126. To install it, do this task: Aileron and Rudder Trim Control Module Installation, AMM TASK 27-11-94-400-801.

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

G. Repair Confirmation

(1) Do a check of the rudder trim system:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic systems A and B. To pressurize them, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) Turn the rudder trim knob to the NOSE LEFT position.

(c) If the rudder moves left, then you corrected the fault. Do this step to complete the task:

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1) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

——————— END OF TASK ———————

802. Rudder Trim Does Not Operate Right - Fault Isolation

A. Description

(1) The pilots trim out unwanted rudder pedal forces with the rudder trim switches and rudder trim actuator. When the pilots move the rudder trim switches on the aisle stand, the switches send a signal to the rudder trim actuator. The trim actuator moves the rudder feel and centering unit. This movement goes to the rudder PCU. Rudder PCU movement mechanically moves the rudder.

(2) The rudder trim knob mechanically connects to the two rudder trim switches. They are part of the aileron/rudder trim control module.

(3) The pilot controls the rudder trim with the rudder trim knob. The rudder trim switches directly control the rudder trim actuator to move left or right.

B. Possible Causes

(1) Wiring problem

(2) Aileron/rudder trim control Module, M1126

(3) Rudder trim actuator, M1125

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	19	C00787	FLIGHT CONTROL TRIM CONT RUD

D. Related Data

(1) (SSM 27-21-11)

(2) (WDM 27-21-11)

E. Initial Evaluation

(1) Do a check of the rudder trim system:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic systems A and B. To pressurize them, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) Turn the rudder trim knob to the NOSE RIGHT position.

(c) If the rudder does not move right, then do the Fault Isolation Procedure below.

(d) If the rudder moves right, then there was an intermittent fault. Do this step to complete the task:

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1) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

F. Fault Isolation Procedure

(1) Do this check of the rudder trim actuator, M1125:

(a) Disconnect connector D2932 from the rudder trim actuator, M1125.

(b) Turn and hold the rudder trim knob to the NOSE RIGHT position.

(c) Do a check for 115v AC from pin 3 to pin 13 of connector D2932 (WDM 27-21-11).

(d) If there is 115v AC at pin 3 of connector D2932, then do these steps:

1) Release the rudder trim knob.

2) Replace the rudder trim actuator, M1125. These are the tasks:
- Rudder Trim Actuator Removal, AMM TASK 27-21-87-000-801
- Rudder Trim Actuator Installation, AMM TASK 27-21-87-400-801

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

(e) If there is not 115v AC at pin 3 of connector D2932, then continue.

1) Release the rudder trim knob.

(2) Do this wiring check:

(a) Remove the aileron/rudder trim control module, M1126. To remove it, do this task: Aileron and Rudder Trim Control Module Removal, AMM TASK 27-11-94-000-801.

(b) Do a wiring check between these pins of connector D3116 at the aileron/rudder trim panel, P8-43 and connector D2932 at the rudder trim actuator, M1125 (WDM 27-21-11):

D3116		D2932
pin 8	- - - - - - - - - - - - - - - - - -	pin 3

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D2932.

3) Re-install the aileron/rudder trim control module, M1126. To install it, do this task: Aileron and Rudder Trim Control Module Installation, AMM TASK 27-11-94-400-801.

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

(d) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D2932.

(3) Install a new aileron/rudder trim control module, M1126. To install it, do this task: Aileron and Rudder Trim Control Module Installation, AMM TASK 27-11-94-400-801.

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

G. Repair Confirmation

(1) Do a check of the rudder trim system:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic systems A and B. To pressurize them, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

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(b) Turn the rudder trim knob to the NOSE RIGHT position.

(c) If the rudder moves right, then you corrected the fault. Do this step to complete the task:

1) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

——————— END OF TASK ———————

803. Rudder Trim Does Not Operate - Fault Isolation

A. Description

(1) The pilots trim out unwanted rudder pedal forces with the rudder trim switches and rudder trim actuator. When the pilots move the rudder trim switches on the aisle stand, the switches send a signal to the rudder trim actuator. The trim actuator moves the rudder feel and centering unit. This movement goes to the rudder PCU. Rudder PCU movement mechanically moves the rudder.

(2) The rudder trim knob mechanically connects to the two rudder trim switches. They are part of the aileron/rudder trim control module.

(3) The pilot controls the rudder trim with the rudder trim knob. The rudder trim switches directly control the rudder trim actuator to move left or right.

B. Possible Causes

(1) Wiring problem

(2) Aileron/rudder trim control module, M1126

(3) Rudder trim actuator, M1125

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	19	C00787	FLIGHT CONTROL TRIM CONT RUD

D. Related Data

(1) (SSM 27-21-11)

(2) (WDM 27-21-11)

E. Initial Evaluation

(1) Do a check of the rudder trim system:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic systems A and B. To pressurize them, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) Turn the rudder trim knob to the NOSE LEFT and then to NOSE RIGHT position.

(c) If the rudder does not move, then do the Fault Isolation Procedure below.

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(d) If the rudder moves left and right, then there was an intermittent fault. Do this step to complete the task:

1) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

F. Fault Isolation Procedure

(1) Do this check of the rudder trim actuator, M1125:

(a) Disconnect connector D2932 from the rudder trim actuator, M1125.

(b) Turn and hold the rudder trim knob to the NOSE LEFT position.

(c) Make sure there is 115v AC from pin 2 to pin 13 of connector D2932 (WDM 27-21-11).

(d) Turn and hold the rudder trim knob to the NOSE RIGHT position.

(e) Make sure there is 115v AC from pin 3 to pin 13 of connector D2932 (WDM 27-21-11).

(f) If there is 115v AC at pins 2 and 3 of connector D2932, then do these steps:

1) Release the rudder trim knob.

2) Replace the rudder trim actuator, M1125. These are the tasks:
- Rudder Trim Actuator Removal, AMM TASK 27-21-87-000-801
- Rudder Trim Actuator Installation, AMM TASK 27-21-87-400-801

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

(g) If there is not 115v AC at pins 2 and 3 of connector D2932, then continue.

1) Release the rudder trim knob.

(2) Do this wiring check:

(a) Remove the aileron/rudder trim control module, M1126. To remove it, do this task: Aileron and Rudder Trim Control Module Removal, AMM TASK 27-11-94-000-801.

(b) Do a wiring check between these pins of connector D3116 at the aileron/rudder trim panel, P8-43 and connector D2932 at the rudder trim actuator, M1125 (WDM 27-21-11):

D3116		D2932
pin 10	- - - - - - - - - - - - - - - - - - -	pin 13

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D2932.

3) Re-install the aileron/rudder trim control module, M1126. To install it, do this task: Aileron and Rudder Trim Control Module Installation, AMM TASK 27-11-94-400-801.

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

(d) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D2932.

(3) Do this check of the aileron/rudder trim control module, M1126:

(a) Do a check for 115v AC from pin 1 to pin 5 of connector D3116 (WDM 27-21-11).

(b) If there is not 115v AC from pin 1 to pin 5 of connector D3116, then do these steps:

1) Do a check for 115v AC from pin 1 of connector D3116 to structure ground (WDM 27-21-11).

2) If there is 115v AC at pin 1 of connector D3116, then do these steps:

a) Repair the wiring between pin 5 of connector D3116 to AC ground (WDM 27-21-11).

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b) Re-install the aileron/rudder trim control module, M1126. To install it, do this task: Aileron and Rudder Trim Control Module Installation, AMM TASK 27-11-94-400-801.

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

3) If there is not 115v AC at pin 1 of connector D3116, then continue.

4) Do a check for 115v AC at load terminal of circuit breaker C787 (WDM 27-21-11).

5) If there is not 115v AC at the circuit breaker C787, then do these steps:

a) Replace this circuit breaker (WDM 27-21-11):

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	19	C00787	FLIGHT CONTROL TRIM CONT RUD

b) Re-install the aileron/rudder trim control module, M1126. To install it, do this task: Aileron and Rudder Trim Control Module Installation, AMM TASK 27-11-94-400-801.

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

6) If there is 115v AC at the circuit breaker C787, then continue.

7) Repair the wiring between pin 1 of connector D3116 at the aileron/rudder trim panel, P8-43 and the load terminal circuit breaker C787 (WDM 27-21-11).

a) Re-install the aileron/rudder trim control module, M1126. To install it, do this task: Aileron and Rudder Trim Control Module Installation, AMM TASK 27-11-94-400-801.

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

(c) If there is 115v AC between pins 1 and 5 of connector D3116, then continue.

(4) Install a new aileron/rudder trim control module, M1126. To install it, do this task: Aileron and Rudder Trim Control Module Installation, AMM TASK 27-11-94-400-801.

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

G. Repair Confirmation

(1) Do a check of the rudder trim system:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic systems A and B. To pressurize them, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) Turn the rudder trim knob to the NOSE RIGHT position then to NOSE LEFT position.

(c) If the rudder moves right then left, then you corrected the fault. Do this step to complete the task:

1) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

——————— END OF TASK ———————

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804. Rudder Trim Indicator Problems - Fault Isolation

A. Description

(1) The rudder trim indicator shows the amount of trim in units. The rudder trim indicator is on the aft end of the P8 aft electronics panel.

(2) If there is electric failure to the rudder trim indicator, an OFF flag tells the pilot to ignore the indicator and trim without it.

B. Possible Causes

(1) Rudder Trim Indicator, N159

(2) Rudder Trim Actuator, M1125

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	16	C00788	FLIGHT CONTROL TRIM IND RUD

D. Related Data

(1) (SSM 27-28-11)

(2) (WDM 27-28-11)

E. Initial Evaluation

(1) Do a check of the rudder trim system. To do it, do this task: Rudder Trim System Test, AMM TASK 27-21-00-700-819-001 or Rudder Trim System Test, AMM TASK 27-21-00-700-819-002.

(a) If the test fails, then do the Fault Isolation Procedure below.

(b) If the test passes, then you corrected the fault.

F. Fault Isolation Procedure

(1) Replace the rudder trim indicator, N159. These are the tasks:
- Rudder Trim Indicator Removal, AMM TASK 27-11-94-000-803
- Rudder Trim Indicator Installation, AMM TASK 27-11-94-400-803

(a) Do a check of the rudder trim system. To do it, do this task: Rudder Trim System Test, AMM TASK 27-21-00-700-819-001 or Rudder Trim System Test, AMM TASK 27-21-00-700-819-002.

(b) If the test passes, then you corrected the fault.

(c) If the test fails, then continue.

(2) Replace the rudder trim actuator, M1125. These are the tasks:
- Rudder Trim Actuator Removal, AMM TASK 27-21-87-000-801
- Rudder Trim Actuator Installation, AMM TASK 27-21-87-400-801

(a) Do a check of the rudder trim system. To do it, do this task: Rudder Trim System Test, AMM TASK 27-21-00-700-819-001 or Rudder Trim System Test, AMM TASK 27-21-00-700-819-002.

(b) If the test passes, then you corrected the fault.

END OF TASK

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805. Rudder Trim Indicator Light Problems - Fault Isolation

A. Description

(1) The rudder trim indicator and light are on the aft end of the P8 aft electronics panel.

B. Possible Causes

(1) Wiring problem

(2) Rudder trim indicator, N159

C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	10	C00284	PANEL & INSTR ELEX PANEL

D. Related Data

(1) (SSM 33-11-41)

(2) (WDM 33-11-41)

E. Initial Evaluation

(1) Open and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	10	C00284	PANEL & INSTR ELEX PANEL

(a) If the rudder trim indicator light is off, then do the Fault Isolation Procedure below.

(b) If the rudder trim indicator light is on, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check of the power wiring:

(a) Remove the rudder trim indicator, N159 from the aft aisle stand panel, P8. To remove it, do this task: Rudder Trim Indicator Removal, AMM TASK 27-11-94-000-803.

(b) Do a check for 5v AC from pin 1 to pin 2 of connector D2934 (WDM 33-11-41).

(c) If there is not 5V AC at pin 1 of connector D2934, then do these steps:

1) Repair the wiring between these pins of terminal block TB801 at panel P8 and connector D2934 at panel P8 (WDM 33-11-41):

TB801		**D2934**
term WB13	- - - - - - - - - - - - - -	pin 1

2) Re-install the rudder trim indicator. To install it, do this task: Rudder Trim Indicator Installation, AMM TASK 27-11-94-400-803.

3) If the rudder trim indicator light is on, then you corrected the fault.

(d) If there is 5v AC at pin 1 of connector D2934, then continue.

(2) Install a new rudder trim indicator, N159. To install it, do this task: Rudder Trim Indicator Installation, AMM TASK 27-11-94-400-803.

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(a) If the rudder trim indicator light is on, then you corrected the fault.

———————— END OF TASK ————————

806. Rudder Does Not Move Correctly - Fault Isolation

A. Description

(1) The rudder controls the flight attitude of the airplane about the vertical axis.

(2) The pilot uses the rudder pedals or the rudder trim knob to control the rudder. The yaw damper and wheel to rudder interconnect systems automatically control the rudder.

B. Possible Causes

(1) Rudder pedals

(2) Rudder control cables

(3) Rudder forward quadrant

(4) Rudder aft quadrant

(5) Rudder torque tube

(6) Rudder feel and centering unit

(7) Rudder power control unit (PCU)

(8) Standby rudder power control unit (PCU)

C. Initial Evaluation

(1) Do a check of the rudder travel:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic systems A and B. To pressurize them, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) Push and hold the captain's left pedal until it touches the forward quadrant stop.

1) Measure the rudder travel.

(c) If the rudder is not 26.97 +/- 0.91 inches from the rudder index mark, then do the Fault Isolation Procedure below.

(d) If the rudder is 26.97 +/- 0.91 inches from the rudder index mark, then continue.

(e) Release the captain's left pedal.

(f) Push and hold the captain's right pedal until it touches the forward quadrant stop.

1) Measure the rudder travel.

(g) If the rudder is not 26.97 +/- 0.91 inches from the rudder index mark, then do the Fault Isolation Procedure below.

(h) If the rudder is 26.97 +/- 0.91 inches from the rudder index mark, then there was an intermittent fault. Do these steps to complete the task:

1) Release the captain's right pedal.

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2) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

D. Fault Isolation Procedure

(1) Do this inspection check:

(a) Examine these components for damaged parts, loose parts, or for objects that prevent movement. Replace or repair those components that have damage.

1) Rudder pedals
2) Rudder control cables
3) Rudder forward quadrant
4) Rudder aft quadrant
5) Rudder torque tube
6) Rudder feel and centering unit
7) Rudder power control unit (PCU)
8) Standby rudder power control unit (PCU)

(b) Do the rudder travel test. To do it, do this task: Rudder Travel Test, AMM TASK 27-21-00-700-817-001 or Rudder Travel Test, AMM TASK 27-21-00-700-817-002.

(c) If the test passes, then you corrected the fault.

(d) If the test fails, then continue.

(2) Do a check of the rudder control cables, rudder pedals, and forward quadrant adjustment. To do it, do this task: Rudder Control Cables RA and RB Adjustment, AMM TASK 27-21-00-820-808-001 or Rudder Control Cables RA and RB Adjustment, AMM TASK 27-21-00-820-808-002.

(a) If you find a problem, then do these steps:

1) Adjust the rudder control cables, rudder pedals, and forward quadrant. To adjust them, do this task: Rudder Control Cables RA and RB Adjustment, AMM TASK 27-21-00-820-808-001 or Rudder Control Cables RA and RB Adjustment, AMM TASK 27-21-00-820-808-002.

2) Do the rudder travel test. To do it, do this task: Rudder Travel Test, AMM TASK 27-21-00-700-817-001 or Rudder Travel Test, AMM TASK 27-21-00-700-817-002.

3) If the test passes, then you corrected the fault.

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

(3) Do a check of the control rod for the main rudder power control unit (PCU) adjustment. To do it, do this task: Control Rod for Main Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-809-001 or Control Rod for Main Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-809-002.

(a) If you find a problem, then do these steps:

1) Adjust the control rod for main rudder PCU. To adjust them, do this task: Control Rod for Main Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-809-001 or Control Rod for Main Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-809-002.

2) Do the rudder travel test. To do it, do this task: Rudder Travel Test, AMM TASK 27-21-00-700-817-001 or Rudder Travel Test, AMM TASK 27-21-00-700-817-002.

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3) If the test passes, then you corrected the fault.

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

(4) Do a check of the control rod for the standby power control unit (PCU) adjustment. To do it, do this task: Control Rod for Standby Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-810-001 or Control Rod for Standby Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-810-002.

(a) If you find a problem, then do these steps:

1) Adjust the control rod for the standby rudder PCU. To adjust them, do this task: Control Rod for Standby Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-810-001 or Control Rod for Standby Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-810-002.

2) Do the rudder travel test. To do it, do this task: Rudder Travel Test, AMM TASK 27-21-00-700-817-001 or Rudder Travel Test, AMM TASK 27-21-00-700-817-002.

3) If the test passes, then you corrected the fault.

——————— END OF TASK ———————

807. Rudder Does Not Move Freely - Fault Isolation

A. Description

(1) The pilots use the rudder pedals to control the rudder through the cables and the hydraulic power control units (PCUs).

B. Possible Causes

(1) Rudder pedals

(2) Rudder control cables

(3) Rudder forward quadrant

(4) Rudder aft quadrant

(5) Rudder torque tube

(6) Rudder feel and centering unit

(7) Rudder power control unit (PCU)

(8) Standby rudder power control unit (PCU)

HAP 001-013, 015-026, 028-030; AIRPLANES WITH 65-44891-1 THRU -7 FCM

(9) Flight control module compensator cartridge

HAP ALL

C. Initial Evaluation

(1) Do a check of the rudder travel:

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WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic systems A and B. To pressurize them, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) Push and hold the captain's left pedal until it touches the forward quadrant stop.

(c) Return the captain's left pedal to the neutral position.

(d) Push and hold the captain's right pedal until it touches the forward quadrant stop.

(e) Return the captain's right pedal to the neutral position.

(f) If the rudder does not move freely, then do the Fault Isolation Procedure below.

(g) If the rudder moves freely, then do these additional checks:

1) Do a general visual inspection of the forward and aft rudder mechanical control paths for any sign of binding.

a) If the check is not satisfactory, then do the Fault Isolation Procedure below.

b) If the check is satisfactory, then there was an intermittent fault.

(h) Remove the hydraulic pressure. Do this task: AMM TASK 27-21-00-840-801.

D. Fault Isolation Procedure

(1) Do this inspection check:

(a) Examine these components for damaged parts, loose parts, or for objects that prevent movement. Replace or repair those components that have damage.

1) Rudder control cables

2) Rudder aft quadrant

3) Rudder torque tube

4) Rudder feel and centering unit

5) Rudder power control unit (PCU)

6) Standby rudder power control unit (PCU)

(b) Do the repair confirmation at the end of this task.

(c) If the above components are not damaged, then continue.

HAP 001-013, 015-026, 028-030; AIRPLANES WITH 65-44891-1 THRU -7 FCM

(2) Do a check of the flight control module compensator cartridge.

(a) On the pilot's overhead panel, make sure the FLT CONTROL A and FLT CONTROL B switches are ON.

(b) On the pilot's overhead panel, move the FLT CONTROL A switch to OFF.

(c) Make sure that the FLT CONTROL A LOW PRESSURE LIGHT comes on within 2 seconds.

1) If the FLT CONTROL A LOW PRESSURE LIGHT does not come on within 2 seconds, then do these steps:

a) These are the tasks:

- Compensator Cartridge Removal, AMM TASK 27-09-51-000-801
- Compensator Cartridge Installation, AMM TASK 27-09-51-400-801

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

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(d) On the pilot's overhead panel, move the FLT CONTROL B switch to OFF.

(e) Make sure the FLT CONTROL B LOW PRESSURE LIGHT comes on within 2 seconds.

1) If the FLT CONTROL B LOW PRESSURE LIGHT does not come on within 2 seconds, then do these steps:

a) These are the tasks:

- Compensator Cartridge Removal, AMM TASK 27-09-51-000-801
- Compensator Cartridge Installation, AMM TASK 27-09-51-400-801

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

HAP ALL

E. Repair Confirmation

(1) Do a check of the rudder movement:

(a) Push and hold the captain's left rudder pedal until it touches the forward quadrant stop.

(b) Push and hold the captain's right rudder pedal until it touches the forward quadrant stop.

(c) If the rudder moves freely, then you corrected the fault.

———————— END OF TASK ————————

808. Rudder Surface Has Excessive Play - Fault Isolation

A. Description

(1) The rudder supplies control of the airplane in the yaw direction.

(2) The rudder is attached at the trailing edge of the vertical stabilizer with hinges. Two power control units (PCUs) attach to the rudder and move it.

B. Possible Causes

(1) Rudder

C. Fault Isolation Procedure

(1) Do a check of the rudder hinge bearing and PCU freeplay. To do it, do this task: Rudder Hinge Bearing and PCU Bearing Freeplay, AMM TASK 27-21-00-700-814-001 or Rudder Hinge Bearing and PCU Bearing Freeplay, AMM TASK 27-21-00-700-814-002.

(a) If you find a problem, then do these steps:

1) Examine these components for damaged parts, loose parts, or for objects that prevent smooth movement. Replace or repair those components that have damage.

a) Rudder hinges

b) Rudder power control unit (PCU) attach point to rudder surface

c) Standby rudder power control unit (PCU) attach point to rudder surface

2) Do a test of the rudder hinge bearing and PCU freeplay. To do it, do this task: Rudder Hinge Bearing and PCU Bearing Freeplay, AMM TASK 27-21-00-700-814-001 or Rudder Hinge Bearing and PCU Bearing Freeplay, AMM TASK 27-21-00-700-814-002.

3) If the test passed, then you corrected the fault.

———————— END OF TASK ————————

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809. Rudder Pedal Adjustment Crank Does Not Move Freely - Fault Isolation

A. Description

(1) Each pilot uses the rudder pedals to command a yaw control through the forward rudder quadrants.

(2) The pedals of each pair move in opposite direction to each other. When the pedals move, they move the pushrods and the jackshaft yoke. This moves the jackshaft and the forward quadrant. This also move the bus rod and makes the other pair of pedals to move equally.

(3) When the rudder pedals adjustment crank rotates, causes the yoke to move. This will only move one pair of pedals and not affect the other.

B. Possible Causes

(1) Rudder Pedal Adjustment Cable

(2) Rudder Jackshaft

C. Initial Evaluation

(1) Turn the rudder pedal adjustment crank clockwise then counterclockwise.

(a) If the rudder pedal adjustment crank does not move freely, then do the Fault Isolation Procedure below.

(b) If the rudder pedal adjustment crank moves freely, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do this check of the rudder pedal adjustment cable:

(a) Remove this access panel:

Number	Name/Location
112A	Forward Access Door

(b) Examine the radius of the cable curvature for the rudder pedal adjustment cable.

(c) If the radius of the cable curvature is less than 5.0 inches, then do these steps:

1) Adjust the radius of curvature of the cable to greater than 5.0 inches.

2) Turn the rudder pedal adjustment crank clockwise then counterclockwise.

a) If the rudder pedal adjustment crank moves freely, then you corrected the fault.

<1> Install the following access panel:

Number	Name/Location
112A	Forward Access Door

(d) If the radius of the cable curvature is greater than 5.0 inches, then continue.

(2) Do this check of the rudder jackshaft:

(a) Examine the rudder jackshaft for unwanted materials.

(b) If there are unwanted materials in the rudder jackshaft, then do these steps:

1) Remove the unwanted materials from the rudder jackshaft.

2) Turn the rudder pedal adjustment crank clockwise then counterclockwise.

a) If the rudder pedal adjustment crank moves freely, then you corrected the fault.

<1> Install the following access panel:

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Number	Name/Location
112A	Forward Access Door

(c) If there is no unwanted materials in the rudder jackshaft, then continue.

(3) Replace the rudder pedal adjustment cable. These are the tasks:
- Rudder Pedal Adjustment Crank Removal, AMM TASK 27-21-41-000-801
- Rudder Pedal Adjustment Crank Installation, AMM TASK 27-21-41-400-801

(a) Turn the rudder pedal adjustment crank clockwise then counterclockwise.

1) If the rudder pedal adjustment crank moves freely, then you corrected the fault.

a) Install the following access panel:

Number	Name/Location
112A	Forward Access Door

(b) If the rudder pedal adjustment crank does not move freely, then continue.

(4) Replace the rudder jackshaft. These are the tasks:
- Rudder Forward Quadrant Removal, AMM TASK 27-21-51-000-801
- Rudder Forward Quadrant Installation, AMM TASK 27-21-51-400-801

(a) Turn the rudder pedal adjustment crank clockwise then counterclockwise.

1) If the rudder pedal adjustment crank moves freely, then you corrected the fault.

a) Install the following access panel:

Number	Name/Location
112A	Forward Access Door

——————— END OF TASK ———————

810. Rudder Pedal Problem - Fault Isolation

A. Description

(1) Each pilot uses the rudder pedals to command a yaw control through the forward rudder quadrants.

(2) The pedals of each pair move in opposite direction to each other. When the pedals move, they move the pushrods and the jackshaft yoke. This moves the jackshaft and the forward quadrant. This also move the bus rod and makes the other pair of pedals to move equally.

B. Possible Causes

(1) Rudder pedal adjustment cable

(2) Rudder jackshaft

C. Initial Evaluation

(1) Turn the rudder pedal adjustment crank clockwise then counterclockwise.

(a) If the rudder pedals do not move back and forward, then do the Fault Isolation Procedure below.

(b) If the rudder pedals move back and forward, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Replace the rudder pedal adjustment cable. These are the tasks:

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- Rudder Pedal Adjustment Crank Removal, AMM TASK 27-21-41-000-801
- Rudder Pedal Adjustment Crank Installation, AMM TASK 27-21-41-400-801

(a) Turn the rudder pedal adjustment crank clockwise then counterclockwise.

(b) If the rudder pedals move back and forward, then you corrected the fault.

(c) If the rudder pedals do not move back and forward, then continue.

(2) Replace the rudder jackshaft. These are the tasks:

- Rudder Forward Quadrant Removal, AMM TASK 27-21-51-000-801
- Rudder Forward Quadrant Installation, AMM TASK 27-21-51-400-801

(a) Turn the rudder pedal adjustment crank clockwise then counterclockwise.

(b) If the rudder pedals move back and forward, then you corrected the fault.

——————— END OF TASK ———————

811. Rudder Pedals Do Not Move Freely - Fault Isolation

A. Description

(1) Each pilot uses the rudder pedals to command a yaw control through the forward rudder quadrants.

(2) The pedals of each pair move in opposite direction to each other. When the pedals move, they move the pushrods and the jackshaft yoke. This moves the jackshaft and the forward quadrant. This also move the bus rod and makes the other pair of pedals to move equally.

(3) The rudder feel and centering unit gives artificial feel to the rudder pedals, centers the input to the PCU, and transmits trim inputs to the aft control components. The springs hold the roller in the center of the cam and suppplies feel force to the pilot. When the pilots release the rudder pedals, the spring force causes the roller to move to the cam detent.

B. Possible Causes

(1) Rudder pedals

(2) Rudder control cables

(3) Rudder pedal tension rods

(4) Rudder forward quadrant

(5) Rudder feel and centering unit.

C. Initial Evaluation

(1) Do this check of the rudder pedals:

(a) Operate the captain's rudder pedals several times.

(b) Operate the first officer's rudder pedals several times.

(c) If the rudder pedals do not move freely, then do the Fault Isolation Procedure below.

(d) If the rudder pedals move freely, then do these additional checks:

1) Do a general visual inspection of the forward and aft rudder mechanical control paths for any sign of binding.

a) If the check is not satisfactory, then do the Fault Isolation Procedure below.

b) If the check is satisfactory, then there was an intermittent fault.

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D. Fault Isolation Procedure

(1) Do a check of the rudder pedal adjustment and limit travel test. To do it, do this task: Rudder Pedal Adjustment and Limit Travel Test, AMM TASK 27-21-00-700-813-001 or Rudder Pedal Adjustment and Limit Travel Test, AMM TASK 27-21-00-700-813-002.

(a) If you find a problem, then do these steps:

1) Examine these components for damaged parts, loose parts, or for objects that prevent smooth movement. Replace or repair those components that have damage.

a) Rudder pedals

b) Rudder control cables

c) Rudder pedal tension rods

d) Rudder forward quadrant

e) Rudder feel and centering unit.

2) Do a check of the rudder pedals adjustment. To adjust it, do this task: Rudder Pedals Adjustment, AMM TASK 27-21-00-820-807-001 or Rudder Pedals Adjustment, AMM TASK 27-21-00-820-807-002.

3) Operate the captain's rudder pedals several times.

4) Operate the first officer's rudder pedals several times.

5) If the rudder pedals move freely, then you corrected the fault.

6) If the rudder pedals do not move freely, then continue.

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

(2) Do a check of the rudder pedals adjustment. To adjust it, do this task: Rudder Pedals Adjustment, AMM TASK 27-21-00-820-807-001 or Rudder Pedals Adjustment, AMM TASK 27-21-00-820-807-002.

(a) Operate the captain's rudder pedals several times.

(b) Operate the first officer's rudder pedals several times.

(c) If the rudder pedals move freely, then you corrected the fault.

(d) If the rudder pedals do not move freely, then continue.

(3) Do these steps to test the rudder feel and centering unit:

(a) Set the captain's rudder pedal adjustment crank to the middle position.

(b) Install adapter, adapter, SPL-1681 on the captain's left rudder pedal at 0 degrees from horizontal.

(c) Push on the adapter, adapter, SPL-1681 until the captain's left pedal is 3.60 +/- 0.10 inches forward from the neutral position.

(d) Make sure the pedal force is between 51.0 and 82.0 pounds (227 and 365 newtons).

(e) If the pedal force is within the ranges, then there was an intermittent fault.

(f) If the pedal force in not within the ranges, then replace the rudder feel and centering unit. These are the tasks:

- AMM TASK 27-21-82-000-801
- AMM TASK 27-21-82-400-801

END OF TASK

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812. Rudder Trim Knob Problem - Fault Isolation

A. Description

(1) The rudder trim knob controls the electrical trim actuator. The actuator moves the rudder and the rudder pedals to a new neutral position.

(2) The rudder trim knob and indicator are on the aft end of the P8 aft electronics panel.

B. Possible Causes

(1) Aileron/rudder trim control module, M1126

C. Fault Isolation Procedure

(1) Replace the aileron/rudder trim control module, M1126. These are the tasks:
- Aileron and Rudder Trim Control Module Removal, AMM TASK 27-11-94-000-801
- Aileron and Rudder Trim Control Module Installation, AMM TASK 27-11-94-400-801

(a) Operate the rudder trim knob.

(b) If the rudder trim knob operates correctly, then you corrected the fault.

——————— END OF TASK ———————

813. FLT CONTROL A LOW PRESSURE Light - Fault Isolation

A. Description

(1) The FLT CONTROL A LOW PRESSURE light monitors the pressure to ailerons, elevators, elevator feel, and rudder. It also monitors the position of the standby rudder PCU shutoff valve when the FLT CONTROL A switch is in the STBY RUD position.

(2) This is the normal operation of the FLT CONTROL A LOW PRESSURE light:

(a) When the FLT CONTROL A switch is in the A ON position and the pressure to the ailerons, elevators, elevator feel, and rudder is low, the FLT CONTROL A LOW PRESSURE light will come on.

(b) When the FLT CONTROL A switch is in the STBY RUD position and standby rudder PCU shutoff valve is closed, the FLT CONTROL A LOW PRESSURE light will come on.

B. Possible Causes

(1) FLT CONTROL A LOW PRESSURE light, L3

(2) Flight control module, P5-3

(3) Flight control system A pressure switch, S141

(4) Standby rudder valve position relay, K10

(5) FLT CONTROL A switch, S3

(6) Standby rudder PCU shutoff valve, V42

(7) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	11	C00362	FLIGHT CONTROL SHUTOFF VALVES STBY RUD

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D. Related Data

(1) (SSM 27-23-14)

(2) (WDM 27-23-14)

E. Initial Evaluation

(1) Do a check of the FLT CONTROL A LOW PRESSURE light:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic system A. To pressurize it, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) If the FLT CONTROL A LOW PRESSURE light is on, then do these steps:

1) Set the FLT CONTROL A switch on the forward overhead panel, P5, to the STBY RUD position.

2) If the FLT CONTROL A LOW PRESSURE light is on, then do the Fault Isolation Procedure I below.

3) If the FLT CONTROL A LOW PRESSURE light is off, then do the Fault Isolation Procedure II below.

(c) If the FLT CONTROL A LOW PRESSURE light is off, then do these steps:

1) Set the FLT CONTROL A switch on the forward overhead panel, P5-3, to the STBY RUD position.

2) If the FLT CONTROL A LOW PRESSURE light is on, then do the Fault Isolation Procedure III below.

3) If the FLT CONTROL A LOW PRESSURE light is off, then there was an intermittent fault. Do this step to complete the task:

a) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

F. Fault Isolation Procedure I

(1) Replace the FLT CONTROL A LOW PRESSURE light, L3.

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

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

(2) Replace the flight control module, P5-3. These are the tasks:

- Flight Controls Panel Removal, AMM TASK 27-09-45-000-801
- Flight Controls Panel Installation, AMM TASK 27-09-45-400-801

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

G. Fault Isolation Procedure II

(1) Do this check of the flight control system A pressure switch, S141:

(a) Disconnect connector D814 from the flight control system A pressure switch, S141.

(b) Set the FLT CONTROL A switch to the ON position.

(c) Do a check for 28V DC from pin 3 to pin 2 (DC ground) of connector D814.

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(d) If there is 28V DC at pin 3 of connector D814, then do these steps:

1) Replace the flight control system A pressure switch, S141. These are the tasks:
- Low Pressure Warning Switch Removal, AMM TASK 27-09-61-000-801
- Low Pressure Warning Switch Installation, AMM TASK 27-09-61-400-801

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

(e) If there is not 28V DC at pin 3 of connector D814, then continue.

(2) Do this wiring check:

(a) Remove the flight controls panel, P5-3. To remove it, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.

(b) Disconnect connector D624 from the flight controls panel, P5-3.

(c) Do a wiring check between these pins of connector D624 at the P5-3 and connector D814 at the flight control system A pressure switch, S141:

D624		D814
pin 24	- - - - - - - - - - - - - - - - - -	pin 3

(d) Do a check for ground at pin 2 of connector D814.

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D624.

3) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

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

(f) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D814.

(3) Install a new flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

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

H. Fault Isolation Procedure III

(1) Do this check of the standby rudder PCU shutoff valve, V42:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Set the FLT CONTROL A switch to the STBY RUD position.

(b) If the lever on the standby rudder PCU shutoff Valve, V42, moves to the open position, then do these steps:

1) Remove the flight controls panel, P5-3. To remove it, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.

2) Disconnect connector D624 from the flight controls panel, P5-3.

3) Do the wiring check between these pins of connector D624 at the P5-3 and connector D822 at the standby rudder PCU shutoff valve, V42:

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D624		D822
pin 18	- - - - - - - - - - - - - - - - - -	pin 4

4) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect connector D822.
   c) Re-connect connector D624.
   d) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.
   e) Do the Repair Confirmation at the end of this task.
5) If you do not find a problem with the wiring, then do these steps:
   a) Replace the standby rudder valve position relay, K10, on the flight controls panel, P5-3.
   b) Re-connect connector D822.
   c) Re-connect connector D624.
   d) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.
   e) Do the Repair Confirmation at the end of this task.
   f) If the Repair Confirmation is not OK, then continue.
6) Replace the flight controls panel, P5-3. These are the tasks:
   - Flight Controls Panel Removal, AMM TASK 27-09-45-000-801
   - Flight Controls Panel Installation, AMM TASK 27-09-45-400-801

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

(c) If the lever on the standby rudder PCU shutoff valve, V42, does not move to the open position, then continue.

(2) Do this check of the flight controls module, P5-3:
   (a) Set the FLT CONTROL A switch to the OFF position.
   (b) Set the FLT CONTROL B switch to the STBY RUD position.
   (c) If the lever on the standby rudder PCU shutoff valve, V42, moves to the open position, then do these steps:
      1) Set the FLT CONTROL B switch to the OFF position.
      2) Replace the FLT CONTROL system A switch, S3.
         a) Do the Repair Confirmation at the end of this task.
         b) If the repair confirmation is not OK, then continue.
      3) Replace the flight controls panel, P5-3. These are the tasks:
         - Flight Controls Panel Removal, AMM TASK 27-09-45-000-801
         - Flight Controls Panel Installation, AMM TASK 27-09-45-400-801
      4) Do the Repair Confirmation at the end of this task.
   (d) If the lever on the standby rudder PCU shutoff valve, V42, does not move to the open position, then continue.

(3) Do this voltage check at the standby rudder PCU shutoff valve, V42:
   (a) Disconnect connector D822 from the standby rudder PCU shutoff valve, V42.

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(b) Set the FLT CONTROL A switch to the STBY RUD position.

(c) Do a check for 28v DC from pin 2 at connector D822 to structure ground.

(d) If there is 28v DC at pin 2 of connector D822, then do these steps:

1) Set the FLT CONTROL A switch to the OFF position.

2) Replace the standby rudder PCU shutoff valve, V42.

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

(e) If there is not 28v DC at pin 2 of connector D822, then continue.

(4) Do this wiring check:

(a) Set the FLT CONTROL A switch to the OFF position.

(b) Remove the flight controls panel, P5-3. To remove it, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.

(c) Disconnect connector D624 from the flight controls panel, P5-3.

(d) Do the wiring check between these pins of connector D624 at the P5-3 and connector D822 at the standby rudder PCU shutoff valve, V42:

D624		D822
pin 25	- - - - - - - - - - - - - - - - - -	pin 2

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D624.

3) Re-connect connector D822.

4) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

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

(f) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D822.

(5) Do this check of the flight controls panel, P5-3:

(a) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	11	C00362	FLIGHT CONTROL SHUTOFF VALVES STBY RUD

(b) Do a check for 28V DC from pin 11 of connector D624 to structure ground.

(c) If there is 28V DC at pin 11 of connector D624, then do these steps:

1) Install a new flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

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

(d) If there is not 28V DC at pin 11 of connector D624, then continue.

(6) Do this check of the circuit breaker, C362:

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(a) Do a check for 28V DC from load terminal of the following circuit breaker to structure ground:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	11	C00362	FLIGHT CONTROL SHUTOFF VALVES STBY RUD

(b) If there is not 28V DC at load terminal of circuit breaker C362, then do these steps:

1) Replace the following circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	11	C00362	FLIGHT CONTROL SHUTOFF VALVES STBY RUD

2) Re-connect connector D624.

3) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

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

(c) If there is 28V DC at load terminal of circuit breaker C362, then do these steps:

1) Repair the wiring between pin 11 of connector D624 at panel P5-3 to the load terminal of circuit breaker C362 at the panel P6.

2) Re-connect connector D624.

3) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801

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

I. Repair Confirmation

(1) Do a check of the FLT CONTROL A LOW PRESSURE light:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic system A. To pressurize it, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) Make sure the FLT CONTROL A LOW PRESSURE light is off.

(c) Set the FLT CONTROL A switch on the forward overhead panel, P5, to the STBY RUD position.

(d) Make sure the FLT CONTROL A LOW PRESSURE light is off.

(e) If the FLT CONTROL A LOW PRESSURE light operates correctly, then you corrected the fault. Do this step to complete the task:

1) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

——————— END OF TASK ———————

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814. FLT CONTROL B LOW PRESSURE Light - Fault Isolation

A. Description

(1) The FLT CONTROL B LOW PRESSURE light monitors the pressure to ailerons, elevators, elevator feel, and rudder. It also monitors the position of the standby rudder PCU shutoff valve when the FLT CONTROL B switch is in the STBY RUD position.

(2) This is the normal operation of the FLT CONTROL B LOW PRESSURE light:

(a) When the FLT CONTROL B switch is in the B ON position and the pressure to the ailerons, elevators, elevator feel, and rudder is low, the FLT CONTROL B LOW PRESSURE light will come on.

(b) When the FLT CONTROL B switch is in the STBY RUD position and standby rudder PCU shutoff valve is closed, the FLT CONTROL B LOW PRESSURE light will come on.

B. Possible Causes

(1) FLT CONTROL B LOW PRESSURE light, L5

(2) Flight control panel, P5-3

(3) Flight control system B pressure switch, S142

(4) Standby rudder valve position relay, K10

(5) FLT CONTROL B switch, S4

(6) Standby rudder PCU shutoff valve, V42

(7) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	11	C00362	FLIGHT CONTROL SHUTOFF VALVES STBY RUD

D. Related Data

(1) (SSM 27-23-14)

(2) (WDM 27-23-14)

E. Initial Evaluation

(1) Do a check of the FLT CONTROL B LOW PRESSURE light:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic system B. To pressurize it, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) If the FLT CONTROL B LOW PRESSURE light is on, then do these steps:

1) Set the FLT CONTROL B switch on the forward overhead panel, P5, to the STBY RUD position.

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2) If the FLT CONTROL B LOW PRESSURE light is on, then do the Fault Isolation Procedure I below.

3) If the FLT CONTROL B LOW PRESSURE light is off, then do the Fault Isolation Procedure II below.

(c) If the FLT CONTROL B LOW PRESSURE light is off, then do these steps:

1) Set the FLT CONTROL B switch on the forward overhead panel, P5-3, to the STBY RUD position.

2) If the FLT CONTROL B LOW PRESSURE light is on, then do the Fault Isolation Procedure III below.

3) If the FLT CONTROL B LOW PRESSURE light is off, then there was an intermittent fault. Do this step to complete the task:

a) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

F. Fault Isolation Procedure I

(1) Replace the FLT CONTROL B LOW PRESSURE light, L5.

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

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

(2) Replace the flight control module, P5-3. These are the tasks:

- Flight Controls Panel Removal, AMM TASK 27-09-45-000-801
- Flight Controls Panel Installation, AMM TASK 27-09-45-400-801

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

G. Fault Isolation Procedure II

(1) Do this check of the flight control system B pressure switch, S142:

(a) Disconnect connector D816 from the flight control system B pressure switch, S142.

(b) Set the FLT CONTROL B switch to the ON position.

(c) Do a check for 28V DC from pin 3 to pin 2 (DC ground) of connector D814.

(d) If there is 28V DC at pin 3 of connector D816, then do these steps:

1) Replace the flight control system B pressure switch, S142. These are the tasks:

- Low Pressure Warning Switch Removal, AMM TASK 27-09-61-000-801
- Low Pressure Warning Switch Installation, AMM TASK 27-09-61-400-801

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

(e) If there is not 28V DC at pin 3 of connector D816, then continue.

(2) Do this wiring check:

(a) Remove the flight controls panel, P5-3. To remove it, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.

(b) Disconnect connector D630 from the flight controls panel, P5-3.

(c) Do a wiring check between these pins of connector D630 at the P5-3 and connector D816 at the flight control system B pressure switch, S142:

D630		D816
pin 10	- - - - - - - - - - - - - - - - - -	pin 3

(d) Do a check for ground at pin 2 of connector D816.

(e) If you find a problem with the wiring, then do these steps:

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1) Repair the wiring.
2) Re-connect connector D630.
3) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.
4) Do the Repair Confirmation at the end of this task.

(f) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D816.

(3) Install a new flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

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

H. Fault Isolation Procedure III

(1) Do this check of the standby rudder PCU shutoff valve, V42:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Set the FLT CONTROL B switch to the STBY RUD position.

(b) If the lever on the standby rudder PCU shutoff valve, V42, moves to the open position, then do these steps:

1) Set the FLT CONTROL A switch to the OFF position.
2) Remove the flight controls panel, P5-3. To remove it, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.
3) Disconnect connector D624 from the flight controls panel, P5-3.
4) Do the wiring check between these pins of connector D624 at the P5-3 and connector D822 at the standby rudder PCU shutoff valve, V42:

D624		D822
pin 18	- - - - - - - - - - - - - - - - - -	pin 4

5) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.
b) Re-connect connector D822.
c) Re-connect connector D624.
d) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.
e) Do the Repair Confirmation at the end of this task.

6) If you do not find a problem with the wiring, then do these steps:

a) Replace the standby rudder valve position relay, K10, on the flight controls panel, P5-3.
b) Re-connect connector D822.
c) Re-connect connector D624.
d) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

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

f) If the Repair Confirmation is not OK, then continue.

7) Replace the flight controls panel, P5-3. These are the tasks:
- Flight Controls Panel Removal, AMM TASK 27-09-45-000-801
- Flight Controls Panel Installation, AMM TASK 27-09-45-400-801

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

(c) If the lever on the standby rudder PCU shutoff Valve, V42, does not move to the open position, then continue.

(2) Do this check of the flight controls module, P5-3:

(a) Set the FLT CONTROL B switch to the OFF position.

(b) Set the FLT CONTROL A switch to the STBY RUD position.

(c) If the lever on the standby rudder PCU shutoff valve, V42, moves to the open position, then do these steps:

1) Set the FLT CONTROL A switch to the OFF position.

2) Replace the FLT CONTROL system B switch, S4.

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

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

3) Replace the flight controls panel, P5-3. These are the tasks:
- Flight Controls Panel Removal, AMM TASK 27-09-45-000-801
- Flight Controls Panel Installation, AMM TASK 27-09-45-400-801

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

(d) If the lever on the standby rudder PCU shutoff valve, V42, does not move to the open position, then continue.

(3) Do this voltage check at the standby rudder PCU shutoff valve, V42:

(a) Disconnect connector D822 from the standby rudder PCU shutoff valve, V42.

(b) Set the FLT CONTROL B switch to the STBY RUD position.

(c) Do a check for 28v DC from pin 2 at connector D822 to structure ground.

(d) If there is 28v DC at pin 2 of connector D822, then do these steps:

1) Set the FLT CONTROL B switch to the OFF position.

2) Replace the standby rudder PCU shutoff valve, V42. These are the tasks:
- Standby Rudder PCU Shutoff Valve Removal, AMM TASK 27-21-94-000-802
- Standby Rudder PCU Shutoff Valve Installation, AMM TASK 27-21-94-400-802

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

(e) If there is not 28v DC at pin 2 of connector D822, then continue.

(4) Do this wiring check:

(a) Set the FLT CONTROL B switch to the OFF position.

(b) Remove the flight controls panel, P5-3. To remove it, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.

(c) Disconnect connector D624 from the flight controls panel, P5-3.

(d) Do the wiring check between these pins of connector D624 at the P5-3 and connector D822 at the standby rudder PCU shutoff valve, V42:

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D624		D822
pin 25	- - - - - - - - - - - - - - - - - -	pin 2

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D624.

3) Re-connect connector D822.

4) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801

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

(f) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D822.

(5) Do this check of the flight controls panel, P5-3:

(a) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	11	C00362	FLIGHT CONTROL SHUTOFF VALVES STBY RUD

(b) Do a check for 28V DC from pin 11 of connector D624 to structure ground.

(c) If there is 28V DC at pin 11 of connector D624, then do these steps:

1) Install a new flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

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

(d) If there is not 28V DC at pin 11 of connector D624, then continue.

(6) Do this check of the circuit breaker, C362:

(a) Do a check for 28V DC from load terminal of circuit breaker C362 to structure ground.

1) This is the circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	11	C00362	FLIGHT CONTROL SHUTOFF VALVES STBY RUD

(b) If there is not 28V DC at load terminal of circuit breaker C362, then do these steps:

1) Replace the circuit breaker C362.

a) This is the circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	11	C00362	FLIGHT CONTROL SHUTOFF VALVES STBY RUD

2) Re-connect connector D624.

3) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801

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

(c) If there is 28V DC at load terminal of circuit breaker C362, then do these steps:

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1) Repair the wiring between pin 11 of connector D624 at panel P5-3 to the load terminal of circuit breaker C362 at the panel P6.

2) Re-connect connector D624.

3) Re-install the flight controls panel, P5-3. To install it, do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801.

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

I. Repair Confirmation

(1) Do a check of the FLT CONTROL B LOW PRESSURE light:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic system B. To pressurize it, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) Make sure the FLT CONTROL B LOW PRESSURE light is off.

(c) Set the FLT CONTROL B switch on the forward overhead panel, P5, to the STBY RUD position.

(d) Make sure the FLT CONTROL B LOW PRESSURE light is off.

(e) If the FLT CONTROL B LOW PRESSURE light operates correctly, then you corrected the fault. Do this step to complete the task:

1) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

———————— END OF TASK ————————

816. Rudder Pedal Kickback During Flight Problem - Fault Isolation

A. Description

(1) Each pilot uses the rudder pedals to command a yaw control through the forward rudder quadrants.

(2) The pedals of each pair move in opposite direction to each other. When the pedals move, they move the pushrods and the jackshaft yoke. This moves the jackshaft and the forward quadrant. Rudder pedal input through cables actuates the aft control quadrant which rotates the torque tube via an input rod. This results in a simultaneous input to the main power control unit, standby power control unit, and the feel and centering unit.

B. Possible Causes

(1) Binding in the control linkage to the standby actuator.

(2) Binding in the control linkage to the main PCU.

C. Initial Evaluation

(1) Remove all hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(a) Disconnect the input control rod from the standby input lever.

1) Measure the force, applied tangentially at the bolt/clevis centerline, that is required to move the lever through its total range of motion.

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2) If the measured force is more than one pound, then do the Fault Isolation Procedure below.

(b) Disconnect the input rod from the main PCU lever.

1) Measure the force, applied tangentially at the bolt/clevis centerline, that is required to move the input crank through its total range of motion.

2) If the measured force is more than 20 pounds just prior to the input crank bottoming on the manifold stops, then do the Fault Isolation Procedure below.

3) If the both measured forces were within the limits, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do these steps to troubleshoot the binding in the control linkage to the standby actuator:

(a) Replace the standby actuator, These are the tasks:

- Standby Rudder Power Control Unit Removal, AMM TASK 27-21-24-000-801
- Standby Rudder Power Control Unit Installation, AMM TASK 27-21-24-400-801

(b) With the input rod still disconnected from the standby input lever, measure the force applied tangentially at the bolt/clevis centerline, that is required to move the lever through its total range of motion.

1) If this force is less than one pound, then you fixed the problem.

2) Connect the input control rod that you disconnected from the standby input lever.

(2) Do these steps to troubleshoot the binding in the control linkage to the Main PCU:

(a) Replace the main PCU, These are the tasks:

- Main Rudder Power Control Unit Removal, AMM TASK 27-21-91-000-804-001 or Main Rudder Power Control Unit Removal, AMM TASK 27-21-91-000-803-002
- Main Rudder Power Control Unit Installation, AMM TASK 27-21-91-400-804-001 or Main Rudder Power Control Unit Installation, AMM TASK 27-21-91-400-803-002

(b) With the input rod still disconnected from the PCU, measure the force applied tangentially at the bolt/clevis centerline, that is required to move the lever through its total range of motion.

1) If this force is less than 20 pounds prior to the input crank bottoming on the manifold stops, then you fixed the problem.

2) Connect the input rod that you disconnected from the main PCU lever.

———————— END OF TASK ————————

817. STBY RUD ON Light Problems - Fault Isolation

A. Description

(1) The STBY RUD ON light is on the P5-3 panel.

(2) There are three different ways that the STBY RUD ON light will be illuminated:

(a) the flight crew selects STBY RUD on, using system A or B flight control switch on the P5-3 panel

(b) auto standby logic detects low pressure on either the A or B hydraulic systems, flaps are not up and either in-air or wheel speed greater than 60 knots.

(c) force fight monitor (FFM) detects force fight in the main rudder PCU.

B. Possible Causes

(1) Wiring problems

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(2) Force Fight Monitor problem

(3) Flap Position Switch (S1051)

(4) Auto Standby Circuitry

(5) P5-3 Flight Control Module

(6) Rudder Main PCU.

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
HAP 030-054, 101-999; HAP 001-013, 015-026, 028, 029 POST SB 737-27-1253			
D	15	C01628	FLIGHT CONTROL FORCE FIGHT MON
HAP ALL			

D. Related Data

(1) (SSM 27-25-11)

(2) (WDM 27-25-11)

(3) (SSM 27-23-11)

(4) (WDM 27-25-11)

E. Initial Evaluation

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Pressurize the rudder hydraulic system. To pressurize it, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(a) Set the FLT CONTROL A and B switches on the P5-3 panel to the ON positions.

(b) Push the left rudder pedal forward until it reachs the stop, hold for 10 seconds, then return the left rudder pedal to the neutral position.

(c) Push the right rudder pedal forward until it reachs the stop, hold for 10 seconds, then return the right rudder pedal to the neutral position.

(d) If the STBY RUD ON light is illuminated, do the Fault Isolation Procedure below (subtask 810-031).

(e) If the STBY RUD ON light is not illuminated, do the Fault Isolation Procedure below (subtask 810-026).

F. Fault Isolation Procedure

(1) If the STBY RUD ON light is not illuminated in the Initial Condition check, do these steps:

(a) Do this task: System Test of the Standby Hydraulic System, AMM TASK 29-21-00-700-802.

1) If you find a problem, do the steps to repair the problem, then do the steps for Repair Confirmation at the end of this task.

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2) If you do not find a problem, continue with the next step.

(b) Do a check of the linkages between the Torque Tube and the Main PCU for binding or being disconnected.

1) If you find a problem, do the steps to repair the problem, then do the steps for Repair Confirmation at the end of this task.

2) If you do not find a problem, continue with the next step.

(c) Make sure that the FLT CONTROL A and B switches on the P5-3 panel are in the ON positions. Measure the voltage between pin 18 and pin 20 of connector D10064 on the E1-1 shelf in the EE bay.

1) If the voltage measured is not between 2.75 Vdc to 7.25 Vdc, adjust the rudder main PCU. Do this task: Control Rod for Main Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-809-001 or Control Rod for Main Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-809-002.

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

3) If the voltage measured is between 2.75 Vdc to 7.25 Vdc, then continue with the next step.

(d) Do this task: Rudder Override Operational Test, AMM TASK 27-21-00-700-823-002.

1) If you find a problem, do the steps to repair the problem, then do the steps for Repair Confirmation at the end of this task.

2) If you do not find a problem, continue with the next step.

(e) Do this task: Main Rudder PCU Internal Hydraulic Leakage Test, AMM TASK 27-21-00-700-822-001 or Main Rudder PCU Internal Hydraulic Leakage Test, AMM TASK 27-21-00-700-822-002.

1) If you find a problem, do the steps to repair the problem, then do the steps for Repair Confirmation at the end of this task.

2) If you do not find a problem, there was an intermittent fault.

(2) If the STBY RUD ON light is illuminated in the Initial Condition check, do these steps:

(a) If the LOW PRESSURE A or B light is illuminated on the P5-3 panel, do these steps:

1) If the LOW PRESSURE A light is illuminated, do this task, do this task: FLT CONTROL A LOW PRESSURE Light - Fault Isolation, 27-21 TASK 813

a) If you find a problem, do the steps to repair the problem, then do the steps for Repair Confirmation at the end of this task.

2) If the LOW PRESSURE B light is illuminated, do this task, do this task: FLT CONTROL B LOW PRESSURE Light - Fault Isolation, 27-21 TASK 814

a) If you find a problem, do the steps to repair the problem, then do the steps for Repair Confirmation at the end of this task.

(b) If the LOW PRESSURE A or B light is not illuminated on the P5-3 panel, continue with the next step.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
HAP 030-054, 101-999; HAP 001-013, 015-026, 028, 029 POST SB 737-27-1253			
D	15	C01628	FLIGHT CONTROL FORCE FIGHT MON

HAP ALL

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(d) If the STBY RUD ON light is illuminated, do these steps:

1) Remove the P5-3 overhead panel, do this task: Flight Controls Panel Removal, AMM TASK 27-09-45-000-801.

2) Do a check of the connector pins and sockets for damage.

a) If you find a pins that are damaged or bended, do the steps to repair the problem, install the P5-3 panel, then do the steps for Repair Confirmation at the end of this task.

b) If you do not find a problem, continue with the next step.

3) Do a check between pin 52 and pin 37 on connector D624 of the P5-3 module for open circuit.

a) If it is not open, do a check of the wiring for damage and repair the wiring. If no damage is found, replace the K1 AUTO STBY RELAY (SSM 27-23-11), then do the steps for Repair Confirmation at the end of this task.

b) If it is open, continue with the next step.

4) Do a check between pin 52 and pin 37 on connector D630 of the P5-3 module for open circuit.

a) If it is not open, do a check of the wiring for damage and repair the wiring. If no damage is found, replace the K21 STBY RUDDER ANNUN RELAY (SSM 27-23-11), then do the steps for Repair Confirmation at the end of this task.

b) If it is open, continue with the next step.

5) Do a check between pin 11 on connector D624 and pin 37 on connector D630 of the P5-3 module for open circuit.

a) If it is not open, do a check of the wiring for damage and repair the wiring. If no damage is found, check the operation of the switches listed in the following table on the P5-3 module (Table 201). If a fault is found on the switch, replace the faulty switch, then do the steps for Repair Confirmation at the end of this task.

Table 201 SWITCH OPERATION

S3 FLT CONTROL SYS A SWITCH - CONTACT GROUP 5
S4 FLT CONTROL SYS B SWITCH - CONTACT GROUP 5
S4 FLT CONTROL SYS B SWITCH - CONTACT GROUP 6

b) If it is open, install the P5-3 panel. Do this task: Flight Controls Panel Installation, AMM TASK 27-09-45-400-801, then continue with the next step.

6) Disconnect the connector D10197 from the Rudder Main PCU.

7) Do a check of the connector pins and sockets for damage.

a) If you find a pins that are damaged or bended, do the steps to repair the problem, then do the steps for Repair Confirmation at the end of this task.

b) If you do not find a problem, continue with the next step.

8) Do a check between pin 2 to pin 8 on connector D10197 of the cable for open circuit (SSM 27-23-11).

a) If it is not open, do a check of the wiring for damage and repair the wiring, then do the steps for Repair Confirmation at the end of this task.

<1> If you do not find any wiring damage, then do a check of the wiring between pin 12 of connector D40262 and pin 5 of connector D46040.

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<a> If you find any damage, repair the wiring, then do the steps for Repair Confirmation at the end of this task.

<b> If you do not find any wiring damage, replace the Flap Position Switch (S1051). These are the tasks:

Flap Limit Switch Removal, AMM TASK 27-51-63-000-801

Flap Limit Switch Installation, AMM TASK 27-51-63-400-801

Do the steps for Repair Confirmation at the end of this task.

b) If it is open, continue with the next step.

9) Do a check between pin 2 to pin 8 on connector D10197 of the Rudder Main PCU for open circuit (SSM 27-23-11).

a) If it is not open, replace the Main Rudder Power Control Unit. These are the tasks:

- Main Rudder Power Control Unit Removal, AMM TASK 27-21-91-000-804-001 or Main Rudder Power Control Unit Removal, AMM TASK 27-21-91-000-803-002
- Main Rudder Power Control Unit Installation, AMM TASK 27-21-91-400-804-001 or Main Rudder Power Control Unit Installation, AMM TASK 27-21-91-400-803-002

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

c) If it is open, connect D10197 on the Rudder Main PCU, then do the steps for Repair Confirmation at the end of this task.

(e) If the STBY RUD ON light is not illuminated, do these steps:

1) Do a check of the linkages between the Torque Tube and the Main PCU for binding or damage.

a) If you find a problem, do the steps to repair the problem, then do the steps for Repair Confirmation at the end of this task.

b) If you do not find a problem, continue with the next step.

2) Measure the voltage between pin 18 and pin 20 of connector D10064 on the E1-1 shelf in the EE bay.

a) If the voltage measured is not between 2.75 Vdc to 7.25 Vdc, adjust the rudder main PCU. Do this task: Control Rod for Main Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-809-001 or Control Rod for Main Rudder Power Control Unit Adjustment, AMM TASK 27-21-00-820-809-002.

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

c) If the voltage measured is between 2.75 Vdc to 7.25 Vdc, then continue with the next step.

3) Do this task: Rudder Override Operational Test, AMM TASK 27-21-00-700-823-002.

a) If you find a problem, do the steps to repair the problem, then do the steps for Repair Confirmation at the end of this task.

b) If you do not find a problem, continue with the next step.

4) Do this task: Main Rudder PCU Internal Hydraulic Leakage Test, AMM TASK 27-21-00-700-822-001 or Main Rudder PCU Internal Hydraulic Leakage Test, AMM TASK 27-21-00-700-822-002.

a) If you find a problem, do the steps to repair the problem, then do the steps for Repair Confirmation at the end of this task.

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b) If you do not find a problem, replace the Main Rudder Power Control Unit. These are the tasks:
- Main Rudder Power Control Unit Removal, AMM TASK 27-21-91-000-804-001 or Main Rudder Power Control Unit Removal, AMM TASK 27-21-91-000-803-002
- Main Rudder Power Control Unit Installation, AMM TASK 27-21-91-400-804-001 or Main Rudder Power Control Unit Installation, AMM TASK 27-21-91-400-803-002

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

G. Repair Confirmation

(1) Do a check of the STBY RUD ON light:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the rudder hydraulic system. To pressurize it, do this task: Rudder Hydraulic System A, B, or Standby Pressurization, AMM TASK 27-21-00-800-801.

(b) Set the FLT CONTROL A and B switches on the P5-3 panel to the ON positions.

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

(d) Move the flap control lever to the 1-unit detent position.

(e) Make sure that the STBY RUD ON light is not illuminated.

(f) Set the FLT CONTROL A switch on the P5-3 panel to the STDBY RUD position.

(g) Make sure that the STBY RUD ON light is illuminated.

(h) Set the FLT CONTROL A switch on the P5-3 panel to the OFF position.

(i) Make sure that the STBY RUD ON light is illuminated.

(j) Set the FLT CONTROL B switch on the P5-3 panel to the STDBY RUD position.

(k) Make sure that the STBY RUD ON light is illuminated.

(l) Set the FLT CONTROL B switch on the P5-3 panel to the OFF position.

(m) Make sure that the STBY RUD ON light is not illuminated.

(n) Set the FLT CONTROL A and B switches on the P5-3 panel to the ON positions.

(o) Push the left rudder pedal forward until it reachs the stop, hold for 10 seconds, then return the left rudder pedal to the neutral position.

(p) Push the right rudder pedal forward until it reachs the stop, hold for 10 seconds, then return the right rudder pedal to the neutral position.

(q) Make sure that the STBY RUD ON light is not illuminated.

(r) Move the flap control lever to the UP detent position.

(s) Put the airplane in the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

(t) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, AMM TASK 27-21-00-840-801.

END OF TASK

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801. Control Column Does Not Move Freely - Fault Isolation

A. Description

(1) The pilots manually control the position of the elevators with forward and aft movement of the control column. The control column gives mechanical input to the elevator power control units (PCUs) through cables and linkages. The elevator PCUs use hydraulic pressure to mechanically move the elevator through the output torque tube.

B. Possible Causes

(1) Control column

(2) Elevator forward control quadrant assembly

C. Initial Evaluation

(1) Move the applicable control column fully aft and fully forward.

(a) If the control column does not move freely, then do the Fault Isolation Procedure below.

(b) If the control column moves freely, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do a check of the control column force. To do it, do this task: AMM TASK 27-31-00-700-809.

(a) If you find a problem, then do these steps:

1) Examine these components for damaged parts, loose parts, or for objects that prevent smooth movement. Replace or repair those components that have damage.

a) To replace the control column, these are the tasks:
- Control Column - Removal, AMM TASK 27-31-51-000-801
- Control Column - Installation, AMM TASK 27-31-51-400-801

b) To replace the elevator forward control quadrant assembly, these are the tasks:
- Elevator Forward Control Quadrant Assembly Removal, AMM TASK 27-31-61-000-801
- Elevator Forward Control Quadrant Assembly Installation, AMM TASK 27-31-61-400-801

2) Move the applicable control column fully aft and fully forward.

3) If the control column moves freely, then you corrected the fault.

——————— END OF TASK ———————

802. Elevator Control Cable Tension Repeatedly Checks Low - Fault Isolation

A. Description

(1) The elevator control cables attach in the grooves at the lower surface of the quadrants. Each cable attaches to the quadrant. The elevator up cables (EB) run directly aft. The elevator down cables (EA) run forward around the turnaround pulley and proceed aft.

B. Possible Causes

(1) Elevator control cables

C. Initial Evaluation

(1) Do a tension check of the elevator control cables. To do it, do this task: Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801.

(a) If the tension of the elevator control cables is low, then do the Fault Isolation Procedure below.

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(b) If the tension of the elevator control cables is OK, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Re-rig the elevator control cables:

(a) Re-stretch the elevator control cables. To stretch them, do this task: Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801.

(b) Re-adjust the elevator control cables. To adjust them, do this task: Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801.

(c) Move the control column 25 times through full travel.

(d) If the tension of the elevator control cables is satisfactory, then you corrected the fault.

(e) If the tension of the elevator control cable remains low, then continue.

(2) Do a check of the elevator control cables. To do it, do this task: Inspection of the Control Cable Wire Rope, AMM TASK 20-20-31-200-801.

(a) If you find a problem, then do these steps:

1) Replace the elevator control cables. These are the tasks:
- Control Cables Removal, AMM TASK 20-10-91-000-801
- Control Cables Installation, AMM TASK 20-10-91-400-801

2) Do a tension check of the elevator control cables. To do it, do this task: Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801.

3) If the tension of the elevator control cables is satisfactory, then you corrected the fault.

——————— END OF TASK ———————

803. FEEL DIFF PRESS Light is ON - Fault Isolation

A. Do the steps in this task for the Fault Isolation of ''FEEL DIFF PRESS'' Light is ON

B. Circuit Breakers

HAP ALL; AIRPLANES WITH FEEL SHIFT MODULE STALL IDENTIFICATION

C. Description

(1) The FEEL DIFF PRESS light comes on when the differential pressure sensing switch on the elevator feel computer detects a hydraulic pressure difference of 25 percent between system A and system B hydraulic output pressure.

(2) This is the normal operation of the FEEL DIFF PRESS light:

(a) When hydraulic systems A and B are pressurized, the FEEL DIFF PRESS light is off.

(b) When either hydraulic system A or B pressure is too low or too high, the FEEL DIFF PRESS light will come on after a 30 second delay.

(c) Activation of Elevator Feel Shift (EFS) for 30 seconds or longer, the FEEL DIFF PRESS light will come on.

D. Possible Causes

(1) Wiring Problems

(2) FEEL DIFF PRESS light, L1

(3) Return hydraulic filter elements clogged

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(4) Blocked pitot and static lines to the Elevator Feel Computer.

(5) Flexible hoses trapping moisture and freezing

(6) Visco Jet Drain clogged

(7) Elevator Feel Computer

(8) Relay, R813

(9) Excessive hydraulic differential pressure can be caused by erroneous activation of the Elevator Feel Shift Module.

E. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	14	C00316	INDICATOR MASTER DIM SECT 4

F. Related Data

(1) (SSM 27-31-37)

(2) (WDM 27-31-37)

G. Initial Evaluation

(1) Do the following checks for causes of illumination of the FEEL DIFF PRESS light L1:

(a) If the FEEL DIFF PRESS light L1 is to be replaced, then do the repair confirmation at the end of this task.

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(b) Pressurize elevator hydraulic systems A and B. To pressurize them, do this task: Elevator Hydraulic System A and B - Pressurization, AMM TASK 27-31-00-800-801.

1) If the FEEL DIFF PRESS light comes on, then do Fault Isolation Procedure I below.

NOTE: A possible cause is the wiring between the FEEL DIFF PRESS light and Elevator Feel Computer or pressure switch, S126 in the Elevator Feel Computer.

(c) If the FEEL DIFF PRESS light does not come on, then continue.

(d) Set the FLT CONTROL A switch to the OFF position.

1) If the FEEL DIFF PRESS light does not come on after 30 seconds, then do the Fault Isolation Procedure II below.

NOTE: The possible cause is the wiring between the FEEL DIFF PRESS light and Elevator Feel Computer relay R813 or the pressure switch, S126 in the Elevator Feel Computer.

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2) If the FEEL DIFF PRESS light comes on after 30 seconds, then there is an intermittent fault. Do the fault isolation procedure III below.

NOTE: The possible cause is the return filter element, the pitot lines, static lines, or the Elevator Feel Computer.

3) Do this task: Put the Elevator Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-31-00-840-801.

(e) Do the following test of the EFSM: (Elevator Feel Shift Module - Test, AMM TASK 27-31-20-740-801).

H. Fault Isolation Procedure I

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

(1) Do this check of the wiring between the FEEL DIFF PRESS light and the Elevator Feel Computer:

(a) Open the P5-3 on the pilots overhead panel.

(b) Disconnect connector D630 from the P5-3 overhead panel.

(c) Do a continuity wiring check between these pins of the connector D11179 at the J11 panel and connector D630 at the pilots overhead panel P5-3:

D11179		D630
pin 2	- - - - - - - - - - - - - - - - - -	pin 20

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D630.

3) Re-connect connector D11179.

4) Close the P5-3 on the pilots overhead control panel.

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

(f) If the repair confirmation is not satisfactory, then do the following:

1) Replace relay, R813 on junction box, J11.

(g) Do the repair confirmation at the end of this task.

(h) If you did not find a problem with the wiring, then do these steps:

1) Check the operation of S126 in the Elevator Feel Computer.

a) Disconnect connector D756 from the Elevator Feel Computer.

b) Remove system A hydraulic pressure and verify continuity between pins 1 and 2 on connector D756.

c) Remove system B hydraulic pressure and verify continuity between pins 3 and 4 on connector D756.

2) Re-connect connector D756.

I. Fault Isolation Procedure II

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

(1) Do this wiring check.

(a) Make sure the FLT CONTROL A switch is in the OFF position.

(b) Make sure the FLT CONTROL B switch is in the ON position.

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(c) Do a continuity wiring check between these pins of connector D756 at the Elevator Feel Computer and connector, D11179 in the J11 panel:

D756		D11179
pin 3	- - - - - - - - - - - - - - - - - -	pin 3
pin 1	- - - - - - - - - - - - - - - - - -	pin 3
pin 2	- - - - - - - - - - - - - - - - - -	pin 5
pin 4	- - - - - - - - - - - - - - - - - -	pin 5

1) Verify ground at pin 5 of D11179.
2) Verify 28 VDC at pin 7 of D11179.

(d) If you find a problem with the wiring, then do these steps:
1) Repair the wiring.
2) Re-connect connector D756.
3) Re-connect connector D11179.

(e) Do the repair confirmation at the end of this task.

(f) If the repair confirmation does not fix the problem, then do these steps:
1) Replace relay, R813 on the junction box J11.

(g) Do the repair confirmation at the end of this task.

(h) If you do not find a problem with the wiring, then do these steps:
1) Check the operation of S126 in the Elevator Feel Computer.
a) Disconnect connector, D756 at the Elevator Feel Computer.
b) Remove system A hydraulic pressure and verify continuity between pins 1 and 2 on connector D756.
c) Remove system B hydraulic pressure and verify continuity betwen pins 3 and 4 on connector D756.
2) Re-connect connector D756.

J. Fault Isolation Procedure III

(1) Do a check of the pitot and static system for leakage or contamination, do this task: Elevator Pitot System Leak - Test, AMM TASK 27-31-17-790-801

(a) Open this access panel:

Number	Name/Location
323FL	Vertical Fin, Access

(b) Flush the pitot-static system to clear contamination or debris, do this task: Elevator Pitot-Static System Flushing, AMM TASK 27-31-17-170-801.

(c) Make sure the pitot probe passages and drain holes are open, do this task: Elevator Pitot Probe - Inspection, AMM TASK 27-31-17-200-802.

(d) Check the two Visco Jet-Drains and lower metal tubing from the pitot probe. The two drains are located behind the following access panel, below the Elevator Feel Computer:

1) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

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2) If the drains are clogged, clean or replace them, as necessary. To clean or flush the drains, do the following: Elevator Pitot-Static System Drainage - Inspection, AMM TASK 27-31-17-200-801.

3) Ensure the flexible hose has an outside diameter (O.D.) of approximately 0.7 inches (18 millimeters).

a) If not, replace the hose.

4) Check the pitot-static system for leaks.

(e) Make sure the flexible hose between the elevator feel system pitot probes and associated rigid metal tubing loops upward to avoid trapping water.

NOTE: If there is water in the flexible hose, it can freeze in flight and cause the system to not work properly.

(f) Do the repair confirmation at the end of this task.

(g) If there is no leakage or contamination, then continue with this test.

(h) Close this access panel:

Number	Name/Location
323FL	Vertical Fin, Access

(2) Do this check of the return filter elements for the hydraulic systems A and B, do this task: Inspection of the Differential Pressure Indicator of the A and B System Return Filter Modules, AMM TASK 29-11-61-210-801.

(a) Look at the differential pressure indicators (red) on the hydraulic systems A and B return filter module.

(b) If the differential pressure indicators (red) are in view, then do these steps:

1) Replace the applicable return filter element, do this task: Return Filter Element Removal, AMM TASK 29-11-61-000-801.

(c) Do the repair confirmation at the end of this task.

(d) If the differential pressure indicators (red) are out of view, then continue.

(3) Replace the Elevator Feel Computer, do this task: Elevator Feel Computer - Removal, AMM TASK 27-31-37-000-801.

NOTE: After replacement of the Elevator Feel Computer, make sure you bleed all of the air out of the system, per the AMM. If air is still in the system after replacing the Feel Computer, it may cause intermittent illumination of the Feel light. It may be necessary to pressurize the pitot system and exercise the control column several times to completely bleed the air from the elevator control system.

(a) Do the repair confirmation at the end of this task.

K. Repair Confirmation

(1) Do a test of the FEEL DIFF PRESS light:

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(a) Pressurize elevator hydraulic systems A and B. To pressurize them, do this task: Elevator Hydraulic System A and B - Pressurization, AMM TASK 27-31-00-800-801.

(b) Set the FLT CONTROL B switch on the forward overhead panel, P5, to the OFF position.

1) Wait for 35 seconds.

(c) Set the FLIGHT CONTROL A switch on the forward overhead panel, P5, to the ON position.

1) Make sure the FEEL DIFF PRESS light on the forward overhead panel, P5, illuminates after a minimum of 35 seconds.

NOTE: It may take up to 120 seconds for the light to illuminate.

(d) Set the FLT CONTROL A switch to the OFF position.

1) Make sure that the FEEL DIFF PRESS light goes out.

(e) Set the FLIGHT CONTROL B switch on the forward overhead panel, P5, to the ON position.

1) Wait for a minimum of 35 seconds.

2) Make sure the FEEL DIFF PRESS light on the forward overhead panel, P5, illuminates.

NOTE: It may take up to 120 seconds for the light to illuminate.

(f) Set the FLT CONTROL A switch to the ON position.

1) Wait for a minimum of 35 seconds.

2) Make sure that the FEEL DIFF PRESS light goes out.

(g) If all of the steps above pass, then you have corrected the problem.

(h) Do this task: Put the Elevator Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-31-00-840-801.

HAP ALL

——————— END OF TASK ———————

804. Elevator Surface Has Too Much Freeplay - Fault Isolation

A. Description

(1) The elevators connect with hinges to the aft right and left sections of the horizontal stabilizer. Each elevator has a tab and four balance panels. The elevator control pushrod connects the output torque tube to the elevator. When the output torque tube rotates, it moves the elevator control pushrod fore and aft, which then moves the elevator up and down.

B. Possible Causes

(1) Elevator control pushrod

(2) Elevator output torque tube

(3) Elevator hinges

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C. Initial Evaluation

(1) Do a check of the elevator freeplay. This is the task: Elevator Output Torque Tube Buss Linkage Freeplay - Check, AMM TASK 27-31-32-200-804.

(a) If the check is not satisfactory, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Do a check of the elevator output torque tube and control pushrod wear. Worn output torque tube crank and control pushrod bearings can cause too much freeplay.

(a) If you find a problem, then do these steps:

1) Repair or replace the parts that have damage.

2) Do a check of the elevator freeplay. This is the task: Elevator Output Torque Tube Buss Linkage Freeplay - Check, AMM TASK 27-31-32-200-804.

3) If the check is satisfactory, then you corrected the fault.

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

(2) Do a check of the elevator hinge wear. Worn bearings and bushings can cause too much freeplay.

(a) If you find a problem, then do these steps:

1) Repair or replace the parts that have too much wear or damage.

2) Do a check of the elevator freeplay. This is the task: Elevator Output Torque Tube Buss Linkage Freeplay - Check, AMM TASK 27-31-32-200-804.

3) If the check is satisfactory, then you corrected the fault.

—————— END OF TASK ——————

805. Elevator Tab Surface Has Too Much Freeplay - Fault Isolation

A. Description

(1) The elevator tab attaches to the aft edge of each elevator. When the output torque tube moves, it moves the elevators and elevator tab pushrods. The elevator tab pushrods move the elevator tab on a direction that is opposite to the elevator.

B. Possible Causes

(1) Elevator tab hinges

(2) Elevator tab rods

C. Initial Evaluation

(1) Do a check of the elevator tab.

These are the tasks:

Elevator Tab Freeplay - Check, AMM TASK 27-31-32-200-803.

Elevator Output Torque Tube Buss Linkage Freeplay - Check, AMM TASK 27-31-32-200-804.

(a) If the check is not satisfactory, then do the Fault Isolation Procedure below.

(b) If the check is satisfactory, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do a check of the elevator tab wear limits. Contact the Boeing Company for the wear limits.

(2) Do a check of the elevator tab wear limits. Contact the Boeing Company for the wear limits.

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(a) If you find a problem, then do these steps:

1) Repair or replace the parts that have damage.

2) Do a check of the elevator tab.

These are the tasks:

Elevator Tab Freeplay - Check, AMM TASK 27-31-32-200-803.

Elevator Output Torque Tube Buss Linkage Freeplay - Check, AMM TASK 27-31-32-200-804.

3) If the check is satisfactory, then you corrected the fault.

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

(3) Do a check of the elevator tab rod wear limits. Contact the Boeing Company for the wear limits.

(a) If you find a problem, then do these steps:

1) Repair or replace the parts that have damage.

2) Do a check of the elevator tab.

These are the tasks:

Elevator Tab Freeplay - Check, AMM TASK 27-31-32-200-803.

Elevator Output Torque Tube Buss Linkage Freeplay - Check, AMM TASK 27-31-32-200-804.

3) If the check is satisfactory, then you corrected the fault.

——————— END OF TASK ———————

806. Elevator Vibration Problem - Fault Isolation

A. Description

(1) Elevator vibration occurs in aft and forward fuselage (usually above 250 knots indicated airspeed).

B. Fault Isolation Procedure

(1) Do the airframe vibration condition. Do the elevator check portion of the following task: Conditional Inspection, AMM TASK 05-51-67-280-801.

NOTE: Do Check 8 in the table at the end of the task, as well.

(a) If there is no vibration in the aft and forward fuselage, then you corrected the fault.

——————— END OF TASK ———————

807. Neutral Shift Mechanism Does Not Operate Correctly - Fault Isolation

A. Description

(1) The neutral shift function causes the elevators to move when the stabilizer moves. When the stabilizer moves, it gives a mechanical input to the elevator power control units (PCUs).

B. Possible Causes

(1) Elevator neutral shift mechanism

(2) Elevator feel and centering unit

C. Initial Evaluation

(1) Do the neutral shift test. To do it, do this task: Neutral Shift - Test, AMM TASK 27-31-00-700-810.

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(a) If the test fails, then do the Fault Isolation Procedure below.

(b) If the test passes, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Adjust the input rod of the elevator neutral shift mechanism and output rod of the feel and centering unit. To adjust them, do this task: Input Rods of the Elevator Neutral Shift Mechanism and Output Rod of the Feel and Centering Unit - Adjustment, AMM TASK 27-31-00-820-804.

(a) Do the neutral shift test. To do it, do this task: Neutral Shift - Test, AMM TASK 27-31-00-700-810.

(b) If the test passes, then you corrected the fault.

(c) If the test fails, then continue.

(2) Examine the elevator neutral shift mechanism for unwanted objects and damaged components.

(a) If you find a problem with the elevator neutral shift mechanism, then do these steps:

1) Repair or replace the elevator neutral shift mechanism. These are the tasks:
- Elevator Neutral Shift Mechanism Removal, AMM TASK 27-31-91-000-801
- Elevator Neutral Shift Mechanism Installation, AMM TASK 27-31-91-400-801

2) Do the neutral shift test. To do it, do this task: Neutral Shift - Test, AMM TASK 27-31-00-700-810.

3) If the test passes, then you corrected the fault.

(b) If you do not find a problem with the elevator neutral shift mechanism, then continue.

(3) Do a check of the elevator feel and centering unit:

(a) Disconnect the elevator neutral shift mechanism from the mach trim actuator (AMM TASK 27-31-91-000-801).

(b) Disconnect the output rod from the elevator feel and centering unit (AMM TASK 27-31-64-000-801).

(c) Rotate the crank of the elevator feel and centering unit by hand.

(d) If the movement is not smooth, then do these steps:

1) Remove interference, repair, or replace the elevator feel and centering unit. These are the tasks:
- Elevator Feel and Centering Unit Removal, AMM TASK 27-31-64-000-801
- Elevator Feel and Centering Unit Installation, AMM TASK 27-31-64-400-801

2) Connect the elevator neutral shift mechanism to the mach trim actuator (AMM TASK 27-31-91-400-801).

3) Connect the output rod to the elevator feel and centering unit (AMM TASK 27-31-64-400-801).

4) Do the neutral shift test. To do it, do this task: Neutral Shift - Test, AMM TASK 27-31-00-700-810.

5) If the test passes, then you corrected the fault.

——————— END OF TASK ———————

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808. Airplane Pitch Up or Pitch Down Too Much - Fault Isolation

A. Description

(1) The elevator tab attaches to the aft edge of each elevator. When the output torque tube moves, it moves the elevators and elevator tab pushrods. The elevator tab pushrods move the elevator tab on a direction that is opposite to the elevator.

B. Possible Causes

(1) Elevator tab pushrods

C. Fault Isolation Procedure

(1) Adjust the elevator tab pushrods. To adjust them, do this task: Elevator Tab Pushrods - Adjustment, AMM TASK 27-31-00-820-805.

(a) Do the test of the elevator power off trim. Do this task: Elevator Power Off Trim Test AMM PAGEBLOCK 27-31-00/501.

(b) If the test passes, then you corrected the fault.

——————— END OF TASK ———————

809. Elevator Travel Problems with Autopilot Engaged - Fault Isolation

A. Description

(1) The elevator control system is also activated by the autopilot (SDS SUBJECT 22-11-00).

B. Possible Causes

(1) Digital flight control system

(2) Elevator balance panels

C. Fault Isolation Procedure

(1) Do a check of the digital flight control system (DFCS):

(a) Do this task: Elevator Rigging Test, AMM TASK 22-11-00-820-802.

(b) If the test is not satisfactory, re-rig the components to the limit as shown on the control display unit (CDU) (AMM TASK 22-11-00-820-802).

(c) If the test is satisfactory, then continue.

(2) Do a check of the elevator balance panels. To do it, do this task: Elevator Surface Friction and Balance - Test, AMM TASK 27-31-00-700-802.

(a) If you find a problem, then do these steps:

1) Examine the balance panels for damaged parts, loose parts, or for objects that prevent smooth movement.

a) To replace the elevator balance panels, these are the tasks:

- Elevator Balance Panel - Removal, AMM TASK 27-31-41-000-801
- Elevator Balance Panel - Installation, AMM TASK 27-31-41-400-801

——————— END OF TASK ———————

810. Elevator Does Not Move Correctly - Fault Isolation

A. Description

(1) (SDS SUBJECT 27-31-00)

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B. Possible Causes

(1) Elevator control pushrods adjustment

(2) Elevator control cables adjustment

(3) Input rods of the elevator power control unit (PCU) adjustment

(4) Damaged parts, loose parts, or objects that prevent smooth movement

(5) Forward quadrant stops

(6) High or low system feel forces

C. Initial Evaluation

(1) Do a check of the elevator limit travel test. To do it, do this task: Elevator Travel Limit - Test, AMM TASK 27-31-00-700-804.

(a) If the check is not satisfactory, then do the Fault Isolation Procedure below.

(b) If the check is satisfactory, then do these additional checks:

1) Do a general visual inspection of the forward and aft elevator mechanical control paths for any sign of binding.

a) If the check is not satisfactory, then do the Fault Isolation Procedure below.

b) If the check is satisfactory, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do a check of the elevator control pushrods adjustment:

(a) Do this task: Elevator Control Pushrods - Adjustment, AMM TASK 27-31-00-820-802.

(b) If the adjustment check is not satisfactory, then do these steps:

1) Re-adjust the applicable elevator control pushrod (Elevator Control Pushrods - Adjustment, AMM TASK 27-31-00-820-802).

2) Do this task: Elevator Travel Limit - Test, AMM TASK 27-31-00-700-804.

3) If the test is satisfactory, then you corrected the fault.

(2) Do a check of the elevator control cables:

(a) Do this task: Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801.

(b) If the adjustment check is not satisfactory, then do these steps:

1) Re-adjust the applicable elevator control cable (AMM TASK 27-31-00-820-801).

2) Do this task: Elevator Travel Limit - Test, AMM TASK 27-31-00-700-804.

3) If the test is satisfactory, then you corrected the fault.

(3) Do a check of the input rods of the elevator power control units (PCUs):

(a) Do this task: Input Rods of the Elevator Power Control Unit - Adjustment, AMM TASK 27-31-00-820-803.

(b) If the adjustment check is not satisfactory, then do these steps:

1) Re-adjust the input rod of the applicable elevator PCU (AMM TASK 27-31-00-820-803).

2) Do this task: Elevator Travel Limit - Test, AMM TASK 27-31-00-700-804.

3) If the test is satisfactory, then you corrected the fault.

(4) Do this inspection check:

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(a) Examine these components for damaged parts, loose parts, or for objects that prevent smooth movement. Replace or repair those components that have damage.

1) Control column
2) Elevator forward control quadrants
3) Elevator aft quadrants
4) Output torque tube

(b) If you find a problem, then do these steps:

1) Replace or repair the components that have damage.

a) To replace the control column, these are the tasks:
- Control Column - Removal, AMM TASK 27-31-51-000-801
- Control Column - Installation, AMM TASK 27-31-51-400-801

b) To replace the elevator forward control quadrant, these are the tasks:
- Elevator Forward Control Quadrant Assembly Removal, AMM TASK 27-31-61-000-801
- Elevator Forward Control Quadrant Assembly Installation, AMM TASK 27-31-61-400-801

c) To replace the elevator aft quadrant, these are the tasks:
- Elevator Input Torque Tube - Removal, AMM TASK 27-31-71-000-801
- Elevator Input Torque Tube - Installation, AMM TASK 27-31-71-400-801

d) To replace the output torque tube, these are the tasks:
- Elevator Output Torque Tube Removal, AMM TASK 27-31-74-000-801
- Elevator Output Torque Tube Installation, AMM TASK 27-31-74-400-801

2) Do this task: Elevator Travel Limit - Test, AMM TASK 27-31-00-700-804.
3) If the test is satisfactory, then you corrected the fault.

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

(5) Do a check of the elevator feel and centering unit:

(a) Disconnect the output rod from the elevator feel and centering unit (AMM TASK 27-31-64-000-801).

(b) Rotate the crank of the elevator feel and centering unit by hand.

(c) If the movement is not smooth, then do these steps:

1) Remove interference, repair, or replace the elevator feel and centering unit. These are the tasks:
- Elevator Feel and Centering Unit Removal, AMM TASK 27-31-64-000-801
- Elevator Feel and Centering Unit Installation, AMM TASK 27-31-64-400-801

2) Connect the output rod to the elevator feel and centering unit (AMM TASK 27-31-64-400-801).
3) Do this task: Elevator Travel Limit - Test, AMM TASK 27-31-00-700-804.
4) If the test is satisfactory, then you corrected the fault.

(d) If the movement is smooth, then continue.

1) Connect the output rod to the elevator feel and centering unit (AMM TASK 27-31-64-400-801).

(6) Do this check of the elevator forward quadrant stops:

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(a) Do the control column test. To do it, do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

(b) If the elevator does not move to the specified position before the control column touches the quadrant stops, then do these steps:

1) Re-install the applicable quadrant stop correctly.

2) Do this task: Elevator Travel Limit - Test, AMM TASK 27-31-00-700-804.

3) If the test is satisfactory, then you corrected the fault.

(c) If the elevator moves to the specified position before the control column touches the quadrant stop, then continue.

(7) Do this check of the system feel forces:

(a) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

(b) If the system feel forces are high with hydraulic power on, then do this task: High Control Column Force With Hydraulic Power On - Fault Isolation, 27-31 TASK 813.

(c) If the system feel forces are low with hydraulic power on, then do this task: Low Control Column Force With Hydraulic Power On - Fault Isolation, 27-31 TASK 812.

(d) If the system feel forces are high with hydraulic power off, then do this task: High Control Column Force With Hydraulic Power Off - Fault Isolation, 27-31 TASK 814.

———————— END OF TASK ————————

811. Airplane Overreacts to Control Column Input - Fault Isolation

A. Description

(1) The elevator control cables attach in the grooves at the lower surface of the quadrants. Each cable attaches to the quadrant. The elevator up cables (EB) run directly aft. The elevator down cables (EA) run forward around the turnaround pulley and proceed aft.

B. Possible Causes

(1) Control cables

(2) Air pressure seals

(3) Cable guard, pulleys, or brackets

(4) Elevator forward control quadrant and bearings

(5) Pitch force transducer

(6) Elevator aft quadrant support

(7) Elevator power control unit

C. Initial Evaluation

(1) Do a check of the control column travel. To do it, do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

(a) If the check is not satisfactory, then do the Fault Isolation Procedure below.

(b) If the check is satisfactory, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do a check of the elevator feel and centering unit:

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(a) Disconnect the output rod of the elevator feel and centering unit from the aft quadrant crank (AMM TASK 27-31-64-000-801).

(b) Stretch the elevator control cables. To stretch and then adjust them after they are stretched, do this task: Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801.

NOTE: This task stretches and then adjusts the Elevator Control Cables EA and EB.

(c) Move the control column 25 times through full travel.

(d) If the tension of the elevator control cables is satisfactory, then you corrected the fault.

(e) If the tension of the elevator control cable remains low, then continue.

(2) Do a tension check of the elevator control cables. To do it, do this task: Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801.

(a) If you find a problem, then do these steps:

1) Re-rig the elevator control cables. To rig them, do this task: Elevator Control Cables EA and EB and Pitch Force Transducers - Adjustment, AMM TASK 27-31-00-820-801.

2) Do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

3) If the test is satisfactory, then you corrected the fault.

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

(3) Do a check to verify that the elevator control cable moves freely through its travel:

(a) Disconnect the output rod of the elevator feel and centering unit from the input torque tube (AMM TASK 27-31-64-000-801).

(b) Disconnect the input rods of the elevator power control units (PCUs) from the input torque tube (AMM TASK 27-31-14-000-801).

(c) Do an inspection to check for free movement of the elevator control cable during its travel.

1) If you find a problem, then do these steps:

a) Remove the components that prevent the control cable from moving freely.

b) Connect the output rod of the elevator feel and centering unit to the input torque tube (AMM TASK 27-31-64-400-801).

c) Connect the input rods of the elevator power control units (PCUs) to the input torque tube (AMM TASK 27-31-14-400-801).

d) Do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

2) If the test is satisfactory, then you corrected the fault.

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

(4) Do a check of the air pressure seals:

(a) Examine the air pressure seals for unwanted objects and damaged components (AMM TASK 27-09-17-860-801).

(b) If you find a problem, then do these steps:

1) Remove the unwanted objects or replace the air pressure seals. These are the tasks:
- Control Cable Air Seal Removal, AMM TASK 20-10-04-000-801
- Control Cable Air Seal Installation, AMM TASK 20-10-04-400-801

2) Connect the output rod of the elevator feel and centering unit to the input torque tube (AMM TASK 27-31-64-400-801).

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3) Connect the input rods of the elevator power control units (PCUs) to the input torque tube (AMM TASK 27-31-14-400-801).

4) Do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

5) If the test is satisfactory, then you corrected the fault.

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

(5) Do a check of the cable guards, control cable pulleys, and brackets on the control cable pulleys:

(a) Examine the cable guards, control cable pulleys, and brackets on the control cable pulleys. To examine the control cable pulleys, do this task: Inspection of Pulleys, AMM TASK 20-20-31-200-805.

(b) If you find a problem, then do these steps:

1) Remove the unwanted objects or replace the control guards.

2) Remove the unwanted objects or replace the control cable pulleys. These are the tasks:

- Control Cable Pulleys Removal, AMM TASK 20-10-09-000-801
- Control Cable Pulleys Installation, AMM TASK 20-10-09-400-801

3) Remove the unwanted objects or replace the brackets on the control cable pulleys.

4) Connect the output rod of the elevator feel and centering unit to the input torque tube (AMM TASK 27-31-64-400-801).

5) Connect the input rods of the elevator power control units (PCUs) to the input torque tube (AMM TASK 27-31-14-400-801).

6) Do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

7) If the test is satisfactory, then you corrected the fault.

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

1) Connect the output rod of the elevator feel and centering unit to the input torque tube (AMM TASK 27-31-64-400-801).

2) Connect the input rods of the elevator power control units (PCUs) to the input torque tube (AMM TASK 27-31-14-400-801).

(6) Do a check of the elevator forward control quadrant and bearings:

(a) Release tension in the elevator control cables.

(b) Examine the elevator forward control quadrant and bearings for unwanted objects and damaged components (AMM TASK 27-31-61-000-801).

(c) If you find a problem, then do these steps:

1) Remove the unwanted objects or replace the elevator forward control quadrant. These are the tasks:

- Elevator Forward Control Quadrant Assembly Removal, AMM TASK 27-31-61-000-801
- Elevator Forward Control Quadrant Assembly Installation, AMM TASK 27-31-61-400-801

2) Remove the unwanted objects or replace the brackets on the control cable pulleys.

3) If it is necessary, re-rig the elevator control cables (AMM TASK 27-31-00-820-801).

4) Do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

5) If the test is satisfactory, then you corrected the fault.

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

1) If it is necessary, re-rig the elevator control cables (AMM TASK 27-31-00-820-801).

(7) Do a check of the pitch force transducer:

(a) Do this task: Pitch Force Transducer Adjustment (DFCS BITE Test), AMM TASK 22-11-92-820-801.

(b) If you find a problem, then do these steps:

1) Re-rig the pitch force transducer (AMM TASK 22-11-92-820-801).

2) Do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

3) If the test is satisfactory, then you corrected the fault.

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

(8) Examine the pivot of the pitch force transducer for unwanted objects and damaged components (AMM TASK 22-11-92-000-801).

(a) If you find a problem, then do these steps:

1) Remove the unwanted objects or replace the pivot (AMM TASK 22-11-92-000-801).

2) Do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

3) If the test is satisfactory, then you corrected the fault.

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

(9) Do a check of the elevator aft quadrant:

(a) Release tension in the elevator control cables.

(b) Examine the elevator aft quadrant for unwanted objects and damaged components.

(c) If you find a problem, then do these steps:

1) Remove the unwanted objects.

2) If it is necessary, re-rig the elevator control cables (AMM TASK 27-31-00-820-801).

3) Do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

4) If the test is satisfactory, then you corrected the fault.

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

(10) Do a check of the input rods of the elevator power control units (PCUs):

(a) Examine the input rods of the elevator power control units for unwanted objects and damaged components.

(b) If you find a problem, then do these steps:

1) Remove the unwanted objects or replace the elevator PCU. These are the tasks:

- Elevator Power Control Unit - Removal, AMM TASK 27-31-14-000-801
- Elevator Power Control Unit Installation, AMM TASK 27-31-14-400-801

2) If it is necessary, re-rig the elevator control cables (AMM TASK 27-31-00-820-801).

3) Do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

4) If the test is satisfactory, then you corrected the fault.

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

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1) If it is necessary, re-rig the elevator control cables (AMM TASK 27-31-00-820-801).

(11) Do a check of the input crank of the elevator feel and centering unit:

(a) Examine the input crank of the elevator feel and centering unit for unwanted objects and damaged components.

(b) If you find a problem, then do these steps:

1) Remove the unwanted objects or replace the elevator feel and centering unit. hese are the tasks:
- Elevator Feel and Centering Unit Removal, AMM TASK 27-31-64-000-801
- Elevator Feel and Centering Unit Installation, AMM TASK 27-31-64-400-801

2) Do this task: Control Column Travel and Centering - Test, AMM TASK 27-31-00-700-808.

3) If the test is satisfactory, then you corrected the fault.

—————— END OF TASK ——————

812. Low Control Column Force With Hydraulic Power On - Fault Isolation

A. Description

(1) (SDS SUBJECT 27-31-00)

B. Possible Causes

(1) Air pressure leakage in pitot system

(2) Elevator feel computer

(3) Elevator feel actuator

(4) Elevator feel and centering unit

C. Initial Evaluation

(1) Do a check of the system feel forces. To do it, do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

(a) If the system feel forces is low with hydraulic power on, then do the Fault Isolation Procedure below.

(b) If the system feel forces is in the specified limit with hydraulic power on, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do this leakage check:

(a) Do this task: Elevator Pitot System Leak - Test, AMM TASK 27-31-17-790-801.

(b) If there is leakage, then do these steps:

1) Repair the leakage.

2) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

3) If the test is satisfactory, then you corrected the fault.

(c) If there is no leakage, then continue.

(2) Do this check of the elevator feel computer:

(a) Disconnect the flexible hydraulic pressure and return lines from the elevator feel actuator (AMM TASK 27-31-67-000-801).

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(b) Attach a 0 to 2100 psi (0 to 14479 kPa) hydraulic pressure gauge, STD-3914 to each of the four hydraulic lines.

(c) Install plugs on the open ports of the elevator feel actuator.

(d) Move the stabilizer to set the "B" dimension at 39.89 +/- 0.05 inches (4 units of trim).

(e) Do this check of the pressure of the hydraulic lines:

1) Pressurize the pitot system to 0.56 +/- 0.05 psi. To pressurize it, do this task: AMM TASK 27-31-17-780-801.

2) Make sure the pressure at the pressure lines is 290 +/- 35 psi greater than the return lines.

3) Pressurize the pitot system 3.50 +/- 0.05 psi.

4) Make sure the pressure at the pressure lines is 1375 +/- 150 psi greater than the return lines.

5) Remove the pressure from the pitot system. To remove it, do this task: AMM TASK 27-31-17-780-801.

6) Make sure the pressure at the pressure lines is 180 +/- 25 psi greater than the return lines.

7) Remove the 0 to 2100 psi (0 to 14479 kPa) hydraulic pressure gauge, STD-3914.

8) Remove the plugs from the elevator feel actuator.

9) Re-connect the hydraulic lines to the elevator feel actuator.

(f) If the pressure check is not satisfactory, then do these steps:

1) Replace the elevator feel computer. These are the tasks:
- Elevator Feel Computer - Removal, AMM TASK 27-31-37-000-801
- Elevator Feel Computer - Installation, AMM TASK 27-31-37-400-801

2) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

3) If the test is satisfactory, then you corrected the fault.

(g) If the pressure check is satisfactory, then continue.

(3) Replace the elevator feel actuator. These are the tasks:
- Elevator Feel Actuator Removal, AMM TASK 27-31-67-000-801
- Elevator Feel Actuator Installation, AMM TASK 27-31-67-400-801

(a) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

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

2) If the test is not satisfactory, then continue.

(4) Replace the elevator feel and centering unit. These are the tasks:
- Elevator Feel and Centering Unit Removal, AMM TASK 27-31-64-000-801
- Elevator Feel and Centering Unit Installation, AMM TASK 27-31-64-400-801

(a) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

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

——————— END OF TASK ———————

813. High Control Column Force With Hydraulic Power On - Fault Isolation

A. Description

(1) (SDS SUBJECT 27-31-00)

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B. Possible Causes

(1) Control cables

(2) Cable guard, pulleys, or brackets

(3) Elevator feel computer

(4) Elevator feel actuator

(5) Elevator feel and centering unit

(6) Elevator input torque tube

(7) Main PCU input rod

(8) Control column bearing

(9) Hydraulic system.

HAP 001-013, 015-026, 028-030; AIRPLANES WITH 65-44891-1 THRU -7 FCM

(10) Flight control module compensator cartridge

HAP ALL

C. Initial Evaluation

(1) Do a check of the system feel forces. To do it, do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

(a) If the system feel forces is high with hydraulic power on, then do the Fault Isolation Procedure below.

(b) If the system feel forces is in the specified limit with hydraulic power on, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do this check of the elevator control cable travel:

(a) Disconnect the output rod of the elevator feel and centering unit from the input torque tube (AMM TASK 27-31-64-000-801).

(b) Disconnect the input rods of the elevator power control units (PCUs) from the input torque tube (AMM TASK 27-31-14-000-801).

(c) Do an inspection check of the elevator control cable travel.

(d) If you find a problem, then do these steps:

1) Remove the components that prevent the control cable movement.

2) Connect the output rod of the elevator feel and centering unit to the input torque tube (AMM TASK 27-31-64-400-801).

3) Connect the input rods of the elevator power control units (PCUs) to the input torque tube (AMM TASK 27-31-14-400-801).

4) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

5) If the test is satisfactory, then you corrected the fault.

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

(2) Do this check of the cable guards, control cable pulleys, and brackets on the control cable pulleys:

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(a) Examine the cable guards, control cable pulleys, and brackets on the control cable pulleys. To examine the control cable pulleys, do this task: Inspection of Pulleys, AMM TASK 20-20-31-200-805.

(b) If you find a problem, then do these steps:

1) Remove the unwanted objects or replace the control cable guards.

2) Remove the unwanted objects or replace the control cable pulleys. These are the tasks:
- Control Cable Pulleys Removal, AMM TASK 20-10-09-000-801
- Control Cable Pulleys Installation, AMM TASK 20-10-09-400-801

3) Remove the unwanted objects or replace the brackets on the control cable pulleys.

4) Re-connect the output rod of the elevator feel and centering unit to the input torque tube (AMM TASK 27-31-64-000-801).

5) Re-connect the input rods of the elevator power control units (PCUs) to the input torque tube (AMM TASK 27-31-14-000-801).

6) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

7) If the test is satisfactory, then you corrected the fault.

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

1) Re-connect the output rod of the elevator feel and centering unit to the input torque tube (AMM TASK 27-31-64-000-801).

2) Re-connect the input rods of the elevator power control units (PCUs) to the input torque tube (AMM TASK 27-31-14-000-801).

(3) Do this check of the elevator feel and centering unit:

(a) Make sure that hydraulic power is off.

1) If necessary, do these tasks: Remove Pressure from the Elevator Hydraulic Systems A and B, AMM TASK 27-31-00-800-802

(b) Make sure that the feel actuator is extended.

1) If the feel actuator is not extended, do these steps to extend the actuator:

a) Manually turn the input (lower) torque tube quadrants or

b) Cycle the control column a few times.

(c) Disconnect the centering output rod from the elevator input torque tube crank.

(d) Make sure that the breakout force for the centering unit is between 12 ±2 lbf (53 ±9 N) at the output crank attachment bolt.

1) If the breakout force is more than 14 lbf (62 N), do these checks:

a) Examine the bearings within the feel and centering unit for signs of wears or damage.

b) Examine the feel and centering unit output rod for signs of wears or binding at the rod end bearings.

2) If the breakout force is between 12 ±2 lbf (53 ±9 N), then continue with the next step.

(4) Do this check of the torque tube support bearings:

(a) Disconnect the cables EA and EB from the elevator aft quadrants.

(b) Disconnect the following rods from the torque tube crank (see AMM PAGEBLOCK 27-31-71/401):

1) feel and centering rod,

2) PCU actuators input rods,

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3) autopilot actuator rod.

(c) Manually rotate the torque tube and check if there are any binding.

NOTE: Slight ratcheting when the torque tube turns may indicate binding.

(d) Check the bearings in each end of the connecting rods that were disconnected from the torque tube.

NOTE: Each bearing should turn smoothly by hand.

(e) Check the autopilot actuator control rod for binding.

1) Verify that the force to move each rod to rotate the actuator output crank is less than 0.5 lbf (2.2 N)

(f) If you do not find any problems, connect the rods that you disconnected and continue with the next step.

(5) Do this check of the elevator cable pulleys:

(a) Disconnect the cables EA and EB from the elevator aft quadrants.

(b) Manually turn the cable pulleys and check for binding.

NOTE: A degraded pulley will exhibit some racheting and possible resistance.

(c) Check for intermittent binding or interference of the cable pulleys at the aft pressure bulkhead.

(d) Check for cable hangups, deflecting fairleads, or grommet and bent pulley brackets.

(e) If you do not find any problems, continue with the next step.

(6) Do this check of the control column:

(a) With the elevator body cables slack, disconnect the cables from the forward quadrants.

(b) Move the control column forward and aft.

1) Verify that the force to move the control column is less than 0.5 lbf (2.2 N)

a) If the force to move the control column is more than 0.5 lbf (2.2 N), check the adjustable seals at the base of the columns, or check for degraded forward torque tube support bearings.

b) If the force to move the control column is less than 0.5 lbf (2.2 N), connect the cables that you disconnected and continue with the next step.

(7) Do this check of the elevator feel computer:

(a) Disconnect the flexible hydraulic pressure and return lines from the elevator feel actuator (AMM TASK 27-31-67-000-801).

(b) Attach a hydraulic pressure gage (range 0-1500 psi) to each of the four hydraulic lines.

(c) Install plugs on the open ports of the elevator feel actuator.

(d) Move the stabilizer to set the "B" dimension at 39.89 +/- 0.05 inches (4 units of trim).

(e) Do this check of the pressure of the hydraulic lines:

1) Pressurize the pitot system to 0.56 +/- 0.05 psi. To pressurize it, do this task: Static and Total Air Pressure System - Pressurization, AMM TASK 34-11-00-790-802.

2) Make sure the pressure at the pressure lines is 290 +/- 35 psi greater than the return lines.

3) Pressurize the pitot system 3.5 +/- 0.05 psi.

4) Make sure the pressure at the pressure lines is 1375 +/- 150 psi greater than the return lines.

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5) Remove the pressure from the pitot system. To remove it, do this task: Static and Total Air Pressure System - Pressurization, AMM TASK 34-11-00-790-802.

6) Make sure the pressure at the pressure lines is 180 +/- 25 psi greater than the return lines.

7) Remove the hydraulic pressure gages.

8) Remove the plugs from the elevator feel actuator.

9) Re-connect the hydraulic lines to the elevator feel actuator.

(f) If the pressure check is not satisfactory, then do these steps:

1) Replace the elevator feel computer. These are the tasks:
- Elevator Feel Computer - Removal, AMM TASK 27-31-37-000-801
- Elevator Feel Computer - Installation, AMM TASK 27-31-37-400-801

2) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

3) If the test is satisfactory, then you corrected the fault.

(g) If the pressure check is satisfactory, then continue.

(8) Replace the elevator feel actuator. These are the tasks:
- Elevator Feel Actuator Removal, AMM TASK 27-31-67-000-801
- Elevator Feel Actuator Installation, AMM TASK 27-31-67-400-801

(a) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

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

2) If the test is not satisfactory, then continue.

(9) Replace the elevator feel and centering unit. These are the tasks:
- Elevator Feel and Centering Unit Removal, AMM TASK 27-31-64-000-801
- Elevator Feel and Centering Unit Installation, AMM TASK 27-31-64-400-801

(a) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

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

2) If the test is not satisfactory, then continue.

(10) Replace the elevator input torque tube. These are the tasks:
- Elevator Input Torque Tube - Removal, AMM TASK 27-31-71-000-801
- Elevator Input Torque Tube - Installation, AMM TASK 27-31-71-400-801

(a) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

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

HAP 001-013, 015-026, 028-030; AIRPLANES WITH 65-44891-1 THRU -7 FCM

(11) Do a check of the flight control module compensator cartridge.

(a) On the pilot's overhead panel, make sure the FLT CONTROL A and FLT CONTROL B switches are ON.

(b) On the pilot's overhead panel, move the FLT CONTROL A switch to OFF.

(c) Make sure that the FLT CONTROL A LOW PRESSURE LIGHT comes on within 2 seconds.

1) If the FLT CONTROL A LOW PRESSURE LIGHT does not come on within 2 seconds, then do these steps:

a) These are the tasks:
- Compensator Cartridge Removal, AMM TASK 27-09-51-000-801
- Compensator Cartridge Installation, AMM TASK 27-09-51-400-801

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b) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

c) If the test is satisfactory, then you corrected the fault.

(d) On the pilot's overhead panel, move the FLT CONTROL B switch to OFF.

(e) Make sure the FLT CONTROL B LOW PRESSURE LIGHT comes on within 2 seconds.

1) If the FLT CONTROL B LOW PRESSURE LIGHT does not come on within 2 seconds, then do these steps:

a) These are the tasks:

- Compensator Cartridge Removal, AMM TASK 27-09-51-000-801
- Compensator Cartridge Installation, AMM TASK 27-09-51-400-801

b) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

c) If the test is satisfactory, then you corrected the fault.

HAP ALL

———————— END OF TASK ————————

814. High Control Column Force With Hydraulic Power Off - Fault Isolation

A. Description

(1) (SDS SUBJECT 27-31-00)

B. Possible Causes

(1) Elevator tab pushrods

C. Initial Evaluation

(1) Do a check of the control column input forces with the hydraulics unpressurized. To do it, do the ''with hydraulics unpressurized'' portion of the following task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

(a) If the system feel forces are high with hydraulic power off, then do the Fault Isolation Procedure below.

(b) If the system feel forces are in the specified limit with hydraulic power off, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do this check of the elevator tab pushrods:

(a) Examine the elevator tab pushrods for wear and damage.

(b) If you find a problem, then do these steps:

1) Repair or replace the applicable elevator tab pushrod (AMM TASK 27-31-34-000-803, AMM TASK 27-31-34-400-803).

NOTE: Always use new elevator tab rod nuts when you repair or replace the elevator tab rods.

2) Do this task: Control Column Power Force - Test, AMM TASK 27-31-00-700-809.

3) If the test is satisfactory, then you corrected the fault.

———————— END OF TASK ————————

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801. Stall Management Yaw Damper BITE Procedure

A. General

(1) You do the stall management yaw damper (SMYD) BITE test at the front of the SMYD module. The SMYD is on the E3-2 shelf in the electronic equipment bay. These are the menu items in the SMYD BITE that you will use in this task:

(a) EXISTING FAULTS

(b) FAULT HISTORY

(2) For EXISTING FAULTS, the SMYD does internal tests, discrete output checks, sensor interface checks, and checks of inputs to the SMYD. The faults that are found during the EXISTING FAULTS ARE ACTIVE. A maintenance message identifies a specific failure which is found by the SMYD. The maintenance messages have English text and a seven digit number.

(3) The SMYD requires data from multiple airplane systems to operate. These systems included the IRU and the FMC. The IRU (AMM PAGEBLOCK 34-21-03/401) and FMC (AMM PAGEBLOCK 22-11-00/201) need valid setup data to provide good data to the SMYD. The FMC must have good weight data for the SMYD to pass some ground tests.

(4) The SMYD keeps a record of faults in FAULT HISTORY. The faults (AMM PAGEBLOCK 22-11-00/201) are grouped by flight leg. Flight leg 0 (LEG 0) is the most recent flight and includes faults that occurred on the ground after the most recent flight.

B. BITE Procedure

(1) Supply electrical power to the airplane. To do this, do this task: Supply External Power, AMM TASK 24-22-00-860-813.

(2) Do this task: AMM TASK 34-21-00-820-802 or AMM TASK 34-21-00-820-801

(3) Make sure the FMC is powered and has good weight data entered. To do this, do these tasks:

(a) Push the INIT REF button on the CDU..

(b) On the PERF INIT page, enter the following:

1) 3L: ZFW prompt, the airplane zero fuel weight.

2) 4L: RES prompt, enter 4.0

3) 5L: CI prompt, enter 30

(4) Do the BITE procedure for both SMYDs (Figure 201).

(a) Push the ON/OFF switch.

NOTE: The display will show EXISTING FAULTS?.

(b) Push the YES switch.

NOTE: The display will show the fault message or NO FAULTS.

(c) If there are existing faults, then do these steps:

1) Push the down arrow switch.

NOTE: The display will show MORE DETAILS?.

2) Push the YES switch to see the maintenance message number.

3) Write the maintenance message.

4) Push the MENU switch to go back to the fault message.

5) Push the down arrow switch two times to see the next fault.

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6) Do the previous steps again as necessary to write the maintenance message numbers for all faults in the BITE memory.

NOTE: END OF LIST will display when done.

7) Push the down arrow switch.

NOTE: RESET LATCHES? will display.

8) Push the YES switch to reset the latches.

9) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

(d) If the test shows NO FAULTS, then do these steps to look for faults in fault history:

1) Push the down arrow switch until the display shows FAULT HISTORY?.

2) Push the YES switch.

NOTE: The display will show FLIGHT LEG 0?

3) Push the YES switch.

4) Push the down arrow switch.

NOTE: The display will show FAULT DETAILS?

5) Push the YES switch to see the maintenance message number.

6) Write the maintenance message.

7) Push the MENU switch to go back to the fault message.

8) Push the down arrow switch two times to see the next fault:

9) Do the previous steps again as necessary to write the maintenance message numbers for all faults in the BITE memory.

NOTE: END OF LIST will display when done.

10) Push the MENU switch.

NOTE: The display will go back to FLIGHT LEG 0?

11) Push the down arrow switch to look for faults in other flight legs.

12) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

——————— END OF TASK ———————

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
SMYD - 1	27-31000 SMYD fault	27-32 TASK 832
SMYD - 1	27-31001 SMYD SW fault	27-32 TASK 832
SMYD - 1	27-31002 S/S no power	27-32 TASK 805
SMYD - 1	27-31003 SM 28VAC invalid	27-32 TASK 807
SMYD - 1	27-31004 AOA sig error	27-32 TASK 809
SMYD - 1	27-31005 FLAP sig error	27-32 TASK 811
SMYD - 1	27-31006 LE shows asymetry	27-32 TASK 813

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
SMYD - 1	27-31007 air/gnd in air	27-32 TASK 814
SMYD - 1	27-31009 SW tst sw short	27-32 TASK 815
SMYD - 1	27-31010 prgm pin error	27-32 TASK 816
SMYD - 1	27-31011 no AD data	27-32 TASK 803
SMYD - 1	27-31012 AD data invalid	27-32 TASK 817
SMYD - 1	27-31013 AD out of range	27-32 TASK 817
SMYD - 1	27-31014 no IR1 data	27-32 TASK 803
SMYD - 1	27-31015 IR1 data invalid	27-32 TASK 818
SMYD - 1	27-31016 IR1 out of range	27-32 TASK 818
SMYD - 1	27-31017 no IR2 data	27-32 TASK 803
SMYD - 1	27-31018 IR2 data invalid	27-32 TASK 818
SMYD - 1	27-31019 IR2 out of range	27-32 TASK 818
SMYD - 1	27-31020 no DEU data	27-32 TASK 819
SMYD - 1	27-31021 DEU data invalid	27-32 TASK 821
SMYD - 1	27-31022 DEU out of range	27-32 TASK 821
SMYD - 1	27-31023 no MCP data	27-32 TASK 825
SMYD - 1	27-31024 MCP data invalid	27-32 TASK 826
SMYD - 1	27-31025 no FMC data	27-32 TASK 822
SMYD - 1	27-31026 FMC data invalid	27-32 TASK 824
SMYD - 1	27-31027 FMC out of range	27-32 TASK 824
SMYD - 1	27-31028 AOA sig inactive	27-32 TASK 809
SMYD - 1	27-31029 FLAP sig inactive	27-32 TASK 811
SMYD - 1	27-31030 air/gnd inactive	27-32 TASK 830
SMYD - 1	27-31031 AOA vane bent	27-32 TASK 809
SMYD - 1	27-31032 AOA sel invalid	27-32 TASK 809
SMYD - 1	27-81001 SMYD A/S fault	27-32 TASK 832
SMYD - 1	27-81002 A/S no power	27-83 TASK 801

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
SMYD - 1	27-81003 A/S vlv ckt open	27-83 TASK 802
SMYD - 1	27-81004 A/S flt tst fail	27-83 TASK 803
SMYD - 2	27-22001 whl sig error	31-31 TASK 806
SMYD - 2	27-32000 SMYD fault	27-32 TASK 802
SMYD - 2	27-32001 SMYD SW fault	27-32 TASK 802
SMYD - 2	27-32002 S/S no power	27-32 TASK 806
SMYD - 2	27-32003 SM 28VAC no power	27-32 TASK 808
SMYD - 2	27-32004 AOA sig error	27-32 TASK 810
SMYD - 2	27-32005 FLAP sig error	27-32 TASK 812
SMYD - 2	27-32006 LE shows asymetry	27-32 TASK 813
SMYD - 2	27-32007 air/gnd in air	27-32 TASK 814
SMYD - 2	27-32009 SW test sw short	27-32 TASK 815
SMYD - 2	27-32010 prgm pin error	27-32 TASK 816
SMYD - 2	27-32011 no AD data	27-32 TASK 804
SMYD - 2	27-32012 AD data invalid	27-32 TASK 817
SMYD - 2	27-32013 AD out of range	27-32 TASK 817
SMYD - 2	27-32014 no IR2 data	27-32 TASK 804
SMYD - 2	27-32015 IR2 data invalid	27-32 TASK 818
SMYD - 2	27-32016 IR2 out of range	27-32 TASK 818
SMYD - 2	27-32017 no IR1 data	27-32 TASK 804
SMYD - 2	27-32018 IR1 data invalid	27-32 TASK 818
SMYD - 2	27-32019 IR1 out of range	27-32 TASK 818
SMYD - 2	27-32020 no DEU data	27-32 TASK 820
SMYD - 2	27-32021 DEU data invalid	27-32 TASK 821
SMYD - 2	27-32022 DEU out of range	27-32 TASK 821
SMYD - 2	27-32023 no MCP data	27-32 TASK 828
SMYD - 2	27-32024 MCP data invalid	27-32 TASK 826

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
SMYD - 2	27-32025 no FMC data	27-32 TASK 823
SMYD - 2	27-32026 FMC data invalid	27-32 TASK 824
SMYD - 2	27-32027 FMC out of range	27-32 TASK 824
SMYD - 2	27-32028 AOA sig error	27-32 TASK 810
SMYD - 2	27-32029 FLAP sig error	27-32 TASK 812
SMYD - 2	27-32030 air/gnd inactive	27-32 TASK 830
SMYD - 2	27-32031 AOA vane bent	27-32 TASK 810
SMYD - 2	27-32032 AOA sel invalid	27-32 TASK 810
SMYD - 2	27-62001 AUTOSTOW FAULT	27-62 TASK 811
SMYD - 2	27-62002 INTERNAL AUTOSTOW	27-62 TASK 811
SMYD - 2	27-82001 SMYD A/S fault	27-32 TASK 802
SMYD - 2	27-82002 A/S no power	27-83 TASK 801
SMYD - 2	27-82003 A/S vlv ckt open	27-83 TASK 802
SMYD - 2	27-82004 A/S flt tst fail	27-83 TASK 803

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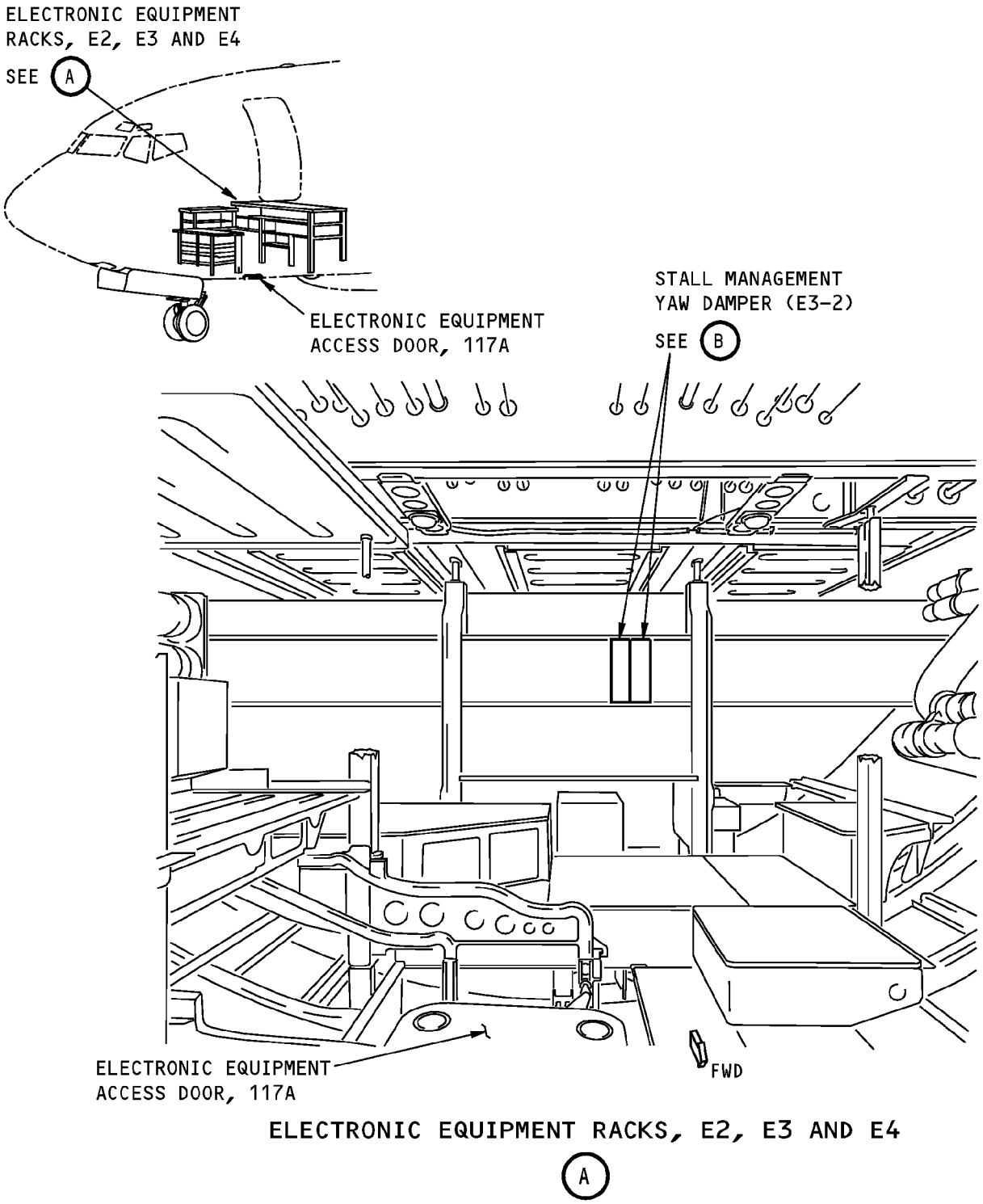

Stall Management Yaw Damper BITE
Figure 201 (Sheet 1 of 2)/ 27-32-00-990-802

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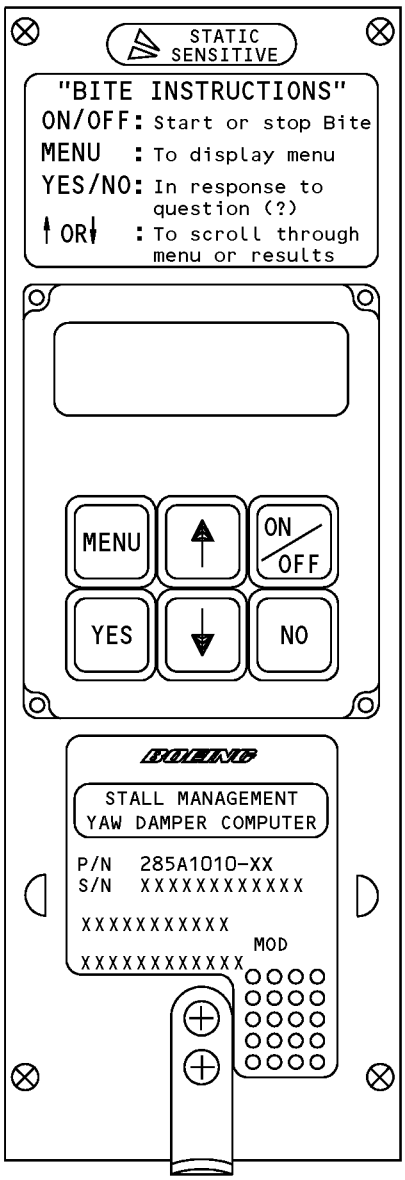

STALL MANAGEMENT YAW DAMPER
(EXAMPLE)

B

Stall Management Yaw Damper BITE
Figure 201 (Sheet 2 of 2)/ 27-32-00-990-802

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802. Stall Management Yaw Damper (SMYD) 2 Internal Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-32000 SMYD FAULT

(b) 27-32001 SMYD SW FAULT

(c) 27-82001 SMYD A/S FAULT

(2) There is a fault internal to the SMYD 2.

B. Possible Causes

(1) Stall management yaw damper, M1748 (SMYD 2)

(a) If electrical power to the Yaw Damper is not turned on at the same time as electrical power to the SMYD this fault message may appear

C. Fault Isolation Procedure

(1) Replace the SMYD 2, M1748. These are the tasks:

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(a) Do the post installation test in the SMYD installation procedure.

(b) If the test operates correctly, then you corrected the fault.

——————— END OF TASK ———————

803. No AD or IR Data Problem (SMYD 1) - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31011 NO AD DATA

(b) 27-31014 NO IR1 DATA

(c) 27-31017 NO IR2 DATA

(2) There is no data from the air data bus or there is no data from the inertial reference bus.

(3) The stall warning test failed.

B. Possible Causes

(1) ADIRU, M1749 (left) or M1752 (right)

(2) Wiring problem

(3) Stall management yaw damper, M1747 (SMYD 1)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

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F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-12)

(2) (WDM 27-32-12)

E. Initial Evaluation

(1) For M1747 (SMYD 1), do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do these steps to make sure that the ADIRU operates correctly:

(a) look at the CDS to see if the ATT flag shows.

(b) If the ATT flag shows, then do the EXISTING FAULTS BITE test on the ADIRU, M1749. To do the test, do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(c) If the ATT flag does not show, then continue.

(2) Do this exchange check of SMYD 1, M1747:

(a) Put a tag that reads "SUSPECT" on SMYD 1, M1747.

(b) Put a tag that reads "OK" on SMYD 2, M1748.

(c) Exchange the locations of SMYD 1, M1747 and SMYD 2, M1748. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: Make sure you do the installation test for each SMYD.

(d) If the maintenance message does not show in EXISTING FAULTS during the installation test and the related maintenance message for SMYD 2 does show, then do these steps:

1) Replace the SMYD tagged "SUSPECT". These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: If it is your airline's policy, you must return the SMYD tagged "OK" to its original location.

2) If the maintenance message does not show in EXISTING FAULTS during the installation test, then you corrected the fault. Remove the tags from the SMYDs.

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(e) If the maintenance message does not show in EXISTING FAULTS during the installation test and the related maintenance message for SMYD 2 does not show, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the SMYD 1, M1747 location or in the SMYD tagged "SUSPECT".

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

   NOTE: The SMYD tagged "OK" goes in the SMYD 2, M1748 rack location. The SMYD tagged "SUSPECT" goes in the SMYD 1, M1747 rack location.

2) Remove the tags from the SMYDs.

(f) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

   NOTE: The SMYD tagged "OK" goes in the SMYD 2, M1748 rack location. The SMYD tagged "SUSPECT" goes in the SMYD 1, M1747 rack location.

2) Remove the tags from the SMYDs.

(3) Do this exchange check of the left ADIRU, M1749:

(a) Put a tag that reads "SUSPECT" on the left ADIRU, M1749.

(b) Put a tag that reads "OK" on the right ADIRU, M1752.

(c) Exchange the locations of the left ADIRU, M1749 and the right ADIRU, M1752. These are the tasks:
   - Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801
   - Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801

   NOTE: Make sure you do the installation test for each ADIRU.

(d) For each SMYD, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(e) If the maintenance message does not show in EXISTING FAULTS and the related maintenance message for SMYD 2 does show, then do these steps:

1) Replace the ADIRU tagged "SUSPECT". These are the tasks:
   - Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801
   - Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801

   NOTE: If it is your airline's policy, you must return the ADIRU tagged "OK" to its original location.

2) If the maintenance message does not show in EXISTING FAULTS, then you corrected the fault. Remove the tags from the ADIRUs.

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(f) If the maintenance message does not show in EXISTING FAULTS and the related maintenance message for SMYD 2 does not show, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the left ADIRU, M1749 location or in the ADIRU tagged "SUSPECT".

1) If it is your airline's policy, return the ADIRUs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

   NOTE: The ADIRU tagged "OK" goes in the right ADIRU, M1752 rack location. The ADIRU tagged "SUSPECT" goes in the left ADIRU, M1749 rack location.

2) Remove the tags from the ADIRUs.

(g) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the ADIRUs to their original locations. These are the tasks:
   - Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801
   - Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801

   NOTE: The ADIRU tagged "OK" goes in the right ADIRU, M1752 rack location. The ADIRU tagged "SUSPECT" goes in the left ADIRU, M1749 rack location.

2) Remove the tags from the ADIRUs.

(4) Do this check of the wiring:

(a) Remove SMYD 1. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Remove the left ADIRU. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Examine the connector pins and sockets for damage and unwanted objects.

(d) Do a check for an open circuit between these pins:

Table 201

MAINTENANCE MESSAGE NUMBER	SMYD 1 CONNECTOR		L ADIRU CONNECTOR
27-31011	D3683B		D3687A
	pin 93	–	pin A9
	pin 106	–	pin B9
27-31014	D3683B		D3687A
	pin 104	–	pin E5
	pin 91	–	pin E6
27-31017	D3683A		D3693B
	pin 55	–	pin C10
	pin 68	–	pin C11

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(e) If there is an open circuit, then do these steps:

1) Repair the wiring.

2) Re-install SMYD 1. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the left ADIRU. To install the ADIRU, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

4) For SMYD 1, M1747, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

a) If the maintenance message does not show in EXISTING FAULTS, then you corrected the fault.

——————— END OF TASK ———————

804. No AD or IR Data Problem (SMYD 2) - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-32011 NO AD DATA

(b) 27-32014 NO IR1 DATA

(c) 27-32017 NO IR2 DATA

(2) There is no data from the air data bus.

(3) There is no data from the inertial reference bus.

(4) The stall warning test failed.

B. Possible Causes

(1) ADIRU, M1749 (left) or M1752 (right)

(2) Wiring problem

(3) Stall management yaw damper, M1748 (SMYD 2)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-22)

(2) (WDM 27-32-22)

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E. Initial Evaluation

(1) For SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do these steps to make sure that the ADIRU operates correctly.

(a) Look at the CDS to see if the ATT flag shows.

(b) If the attitude flag shows, then do the EXISTING FAULTS BITE test on the ADIRU, M1752. To do the test, do this task: ADIRS BITE Procedure, 34-21 TASK 801

(c) If the ATT flag does not show, then continue.

(2) Do this exchange check of SMYD 2, M1748:

(a) Put a tag that reads "SUSPECT" on SMYD 2, M1748.

(b) Put a tag that reads "OK" on SMYD 1, M1747.

(c) Exchange the locations of SMYD 1, M1747 and SMYD 2, M1748. To remove and install the SMYD, These are the tasks:

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: Make sure you do the installation test for each SMYD.

(d) If the maintenance message does not show in EXISTING FAULTS during the installation test and the related maintenance message for SMYD 2 does show, then do these steps:

1) Replace the SMYD tagged "SUSPECT". To remove and install the SMYD, These are the tasks:

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: If it is your airline's policy, you must return the SMYD tagged "OK" to its original location.

2) If the maintenance message does not show in EXISTING FAULTS during the installation test, then you corrected the fault. Remove the tags from the SMYDs.

(e) If the maintenance message does not show in EXISTING FAULTS during the installation test and the related maintenance message for SMYD 1 does not show, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the SMYD 2, M1748 location or in the SMYD tagged "SUSPECT".

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: The SMYD tagged "OK" goes in the SMYD 1, M1747 rack location. The SMYD tagged "SUSPECT" goes in the SMYD 2, M1748 rack location.

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2) Remove the tags from the SMYDs.

(f) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: The SMYD tagged "OK" goes in the SMYD 1, M1747 rack location. The SMYD tagged "SUSPECT" goes in the SMYD 2, M1748 rack location.

2) Remove the tags from the SMYDs.

(3) Do this exchange check of the right ADIRU, M1752:

(a) Put a tag that reads "SUSPECT" on the right ADIRU, M1752.

(b) Put a tag that reads "OK" on the left ADIRU, M1749.

(c) Exchange the locations of the left ADIRU, M1749 and the right ADIRU, M1752. These are the tasks:
- Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801
- Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801

NOTE: Make sure you do the installation test for each ADIRU.

(d) For each SMYD, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(e) If the maintenance message does not show in EXISTING FAULTS and the related maintenance message for SMYD 1 does show, then do these steps:

1) Replace the ADIRU tagged "SUSPECT". These are the tasks:
- Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801
- Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801

NOTE: If it is your airline's policy, you must return the ADIRU tagged "OK" to its original location.

2) If the maintenance message does not show in EXISTING FAULTS, then you corrected the fault. Remove the tags from the ADIRUs.

(f) If the maintenance message does not show in EXISTING FAULTS and the related maintenance message for SMYD 1 does not show, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the right ADIRU, M1752 location or in the ADIRU tagged "SUSPECT".

1) If it is your airline's policy, return the ADIRUs to their original locations. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: The ADIRU tagged "OK" goes in the left ADIRU, M1749 rack location. The ADIRU tagged "SUSPECT" goes in the right ADIRU, M1752 rack location.

2) Remove the tags from the ADIRUs.

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(g) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the ADIRUs to their original locations. These are the tasks:
- Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801
- Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801

NOTE: The ADIRU tagged "OK" goes in the left ADIRU, M1749 rack location. The ADIRU tagged "SUSPECT" goes in the right ADIRU, M1752 rack location.

2) Remove the tags from the ADIRUs.

(4) Do this check of the wiring:

(a) Remove SMYD 2. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Remove the right ADIRU. To remove the ADIRU, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.

(c) Examine the connector pins and sockets for damage and unwanted material.

(d) Do a check for an open circuit between these pins:

Table 202

MAINTENANCE MESSAGE NUMBER	SMYD 2 CONNECTOR		R ADIRU CONNECTOR
27-32011	D3685B		D3693A
	pin 93	————	pin A9
	pin 106	————	pin B9
27-32014	D3685A		D3687B
	pin 55	————	pin C10
	pin 68	————	pin C11
27-32017	D3685B		D3693B
	pin 104	————	pin E5
	pin 91	————	pin E6

(e) If there is an open circuit, then do these steps:

1) Repair the wiring.

2) Re-install SMYD 2. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the right ADIRU. To install the ADIRU, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

4) For SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

5) If the maintenance message does not show in EXISTING FAULTS, then you corrected the fault.

———— END OF TASK ————

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805. Captain's Stick Shaker Has No Power - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-31002 S/S NO PWR

(2) The SMYD does not detect 28 VDC from the standby bus.

(3) The stall warning test will fail if the fault is present.

B. Possible Causes

(1) Circuit breaker

(2) Wiring problem

(3) Stall management yaw damper, M1747 (SMYD 1)

C. Circuit Breaker

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-11)

(2) (WDM 27-32-11)

E. Initial Evaluation

(1) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT

(2) For M1747 (SMYD 1), do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check for power to the SMYD:

(a) Remove the SMYD 1. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Examine the connector and sockets for damage and unwanted material.

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(c) Measure the voltage between pin 10 on the SMYD connector D3683A and structure ground.

(d) If you measure 28 VDC at the pin, then do these steps:

1) Replace the SMYD. To replace the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

2) Do the post installation test in the procedure.

3) If the test operates correctly, you corrected the fault.

(e) If you do not measure 28 VDC at the pin, then continue.

(2) Do these steps to repair the circuit breaker:

(a) Replace this circuit breaker:

1) This is the circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT

(b) Do the EXISTING FAULTS test on the SMYD 1 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(d) If the maintenance message shows, then continue.

(3) Do this wiring check:

(a) Remove the SMYD 1. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Do a wiring check between pin 10 on the SMYD connector D3683A and this circuit breaker:

1) This is the circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

3) Do the EXISTING FAULTS test on the SMYD 1 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

——————— END OF TASK ———————

806. First Officer's Stick Shaker Has No Power - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-32002 S/S No PWR

(2) The SMYD does not detect 28 VDC from the number 2 bus.

(3) The stall warning test will fail if the problem is present.

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B. Possible Causes

(1) Circuit breaker

(2) Wiring problem

(3) Stall management yaw damper, M1748 (SMYD 2)

C. Circuit Breaker

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-21)

(2) (WDM 27-32-21)

E. Initial Evaluation

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	6	C01393	STICK SHAKER RIGHT

(2) For M1748 (SMYD 2), do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check for power to the SMYD:

(a) Remove the SMYD 2. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Examine the connector and sockets for damage and unwanted material.

(c) Measure the voltage between pin 10 on the SMYD connector D3685A and structure ground.

(d) If you measure 28 VDC at the pin, then do these steps:

1) Replace the SMYD. To replace the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

2) Do the post installation test in the installation procedure.

3) If the test operates correctly, you corrected the fault.

(e) If you do not measure 28 VDC at the pin, then continue.

(2) Do these steps to repair the circuit breaker:

(a) Replace this circuit breaker:

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1) This is the circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	6	C01393	STICK SHAKER RIGHT

(b) Do the EXISTING FAULTS test on the SMYD 1 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(d) If the maintenance message shows, then continue.

(3) Do this wiring check:

(a) Remove the SMYD 2. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Do a wiring check between pin 10 on the SMYD connector D3685A and this circuit breaker:

1) This is the circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	6	C01393	STICK SHAKER RIGHT

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

3) Do the EXISTING FAULTS test on the SMYD 2 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

——————— END OF TASK ———————

807. 28 VAC SNSR EXC Input Not Present to SMYD 1 - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-31003 SM 28VAC INVALID

(2) There is no 28 VAC Power from the SNSR EXC circuit breaker.

(3) The stall warning test failed.

(4) The autoslat fail light came on.

B. Possible Causes

(1) Circuit breaker

(2) Wiring problem

(3) Stall management yaw damper, M1747 (SMYD 1)

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C. Circuit Breaker

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	6	C01205	SMYD-1 SNSR EXC AC

D. Related Data

(1) (SSM 27-32-11)

(2) (WDM 27-32-11)

E. Initial Evaluation

(1) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	6	C01205	SMYD-1 SNSR EXC AC

(2) For SMYD 1, M1747, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check for power to the SMYD 1:

(a) Remove the SMYD 1. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Examine the connector and sockets for damage and unwanted material.

(c) Measure the voltage between pins 55 and 56 on the SMYD connector D3683B.

(d) If you measure 28 VAC at the pin, then do these steps:

1) Replace the SMYD. To replace the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

2) Do the post installation test in the procedure.

3) If the test operates correctly, then you corrected the fault.

(e) If you do not measure 28 VAC at the pin, then continue.

(2) Do these steps to repair the circuit breaker:

(a) Replace this circuit breaker:

1) This is the circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	6	C01205	SMYD-1 SNSR EXC AC

(b) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

(d) If the maintenance message shows, then continue.

(3) Do this wiring check:

(a) Remove the SMYD 1. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Do a wiring check between pin 55 on the SMYD 1 connector D3683B and this circuit breaker:

1) This is the circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	6	C01205	SMYD-1 SNSR EXC AC

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install it, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

END OF TASK

808. 28 VAC SNSR EXC Input Not Present to SMYD 2 - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-32003 SM 28VAC No PWR

(2) There is no 28 VAC Power from SNSR EXC circuit breaker.

(3) The stall warning test failed.

(4) The autoslat fail light came on.

B. Possible Causes

(1) Circuit breaker

(2) Wiring problem

(3) Stall management yaw damper, M1748 (SMYD 2)

C. Circuit Breakers

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC

D. Related Data

(1) (SSM 27-32-21)

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(2) (WDM 27-32-21)

E. Initial Evaluation

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC

(2) For SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check for power to the SMYD 2:

(a) Remove the SMYD 2. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Examine the connector and sockets for damage and unwanted material.

(c) Measure the voltage between pins 55 and 56 on the SMYD connector D3685B.

(d) If you measure 28 VAC at the pin, then do these steps:

1) Replace the SMYD. To replace the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

2) Do the post installation test in the procedure.

3) If the test operates correctly, then you corrected the fault.

(e) If you do not measure 28 VAC at the pin, then continue.

(2) Do these steps to repair the circuit breaker:

(a) Replace this circuit breaker:

1) This is the circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC

(b) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(d) If the maintenance message shows, then continue.

(3) Do this wiring check:

(a) Remove the SMYD 2. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Do a wiring check between pin 55 on the SMYD 2 connector D3685B and this circuit breaker:

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1) This is the circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Do the EXISTING FAULTS test on the SMYD 2 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

——————— END OF TASK ———————

809. Left Angle Of Attack Sensor Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

HAP 001-013, 015-026, 028-036, 101-999

(a) 27-31004 AOA SIG ERROR

HAP ALL

(b) 27-31028 AOA SIG INACTIVE

(c) 27-31031 AOA VANE BENT

(d) 27-31032 AOA SEL INVALID

(2) There is an angle of attack (AOA) signal error.

(3) The stall warning test failed.

(4) The AUTOSLAT FAIL light came on.

B. Possible Causes

(1) AOA sensor, T433

(2) Wiring problem

(3) Stall management yaw damper, M1747 (SMYD 1)

C. Circuit Breaker

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	6	C01205	SMYD-1 SNSR EXC AC

D. Related Data

(1) (WDM 27-32-11)

(2) (SSM 27-32-11)

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E. Initial Evaluation

(1) For SMYD 1, M1747, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

NOTE: The system is OK if the maintenance message is not in EXISTING FAULTS. If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault. If the maintenance message shows in FAULT HISTORY but the stick shaker did not operate, you can ignore the message.

F. Fault Isolation Procedure

(1) Do this test to determine if a related fault exists for SMYD 1, M1747.

(a) If the SMYD 1 BITE is not in the EXISTING FAULTS mode, then do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(b) If this maintenance message: 27-31003 SM 28 VAC POWER, shows in EXISTING FAULTS, then, do this task: 28 VAC SNSR EXC Input Not Present to SMYD 1 - Fault Isolation, 27-32 TASK 807.

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

(2) Replace the left AOA sensor:

(a) These are the tasks:
- Angle of Attack Sensor Removal, AMM TASK 34-21-05-000-801
- Angle of Attack Sensor Installation, AMM TASK 34-21-05-400-801

(b) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

(d) If the maintenance message shows, then continue.

(3) Do this wiring check between the left AOA sensor and the number 1 SMYD:

(a) Remove the SMYD 1. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Remove the left AOA sensor. To remove the sensor, do this task: Angle of Attack Sensor Removal, AMM TASK 34-21-05-000-801.

(c) Examine the connector pins and sockets for damage and unwanted objects.

(d) Do a wiring check between these pins:

(SMYD 1) D3683B	**(L AOA SENSOR) D365**
pin 55	pin 1
ground	pin 2
pin 72	pin 3
pin 71	pin 4
pin 58	pin 5

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install SMYD 1. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

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3) Re-install the AOA sensor. To install the sensor, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

4) Do the EXISTING FAULTS test on the SMYD 1 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

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

(4) Replace the SMYD 1. To replace the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(a) Do the post installation test in the SMYD installation procedure.

(b) If the test operates correctly, then you corrected the fault.

——————— END OF TASK ———————

810. Right Angle Of Attack Sensor Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

HAP 001-013, 015-026, 028-036, 101-999

(a) 27-32004 AOA SIG ERROR

HAP ALL

(b) 27-32028 AOA SIG INACTIVE

(c) 27-32031 AOA VANE BENT

HAP 037-054

(d) 27-32022 AOA SEL INVALID

HAP ALL

(2) There is an angle of attack (AOA) signal error.

(3) The stall warning test failed.

(4) The AUTOSLAT FAIL light came on.

B. Possible Causes

(1) AOA sensor, T437

(2) Wiring problem

(3) Stall management yaw damper, M1748 (SMYD 2)

C. Circuit Breakers

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC

D. Related Data

(1) (SSM 27-32-21)

(2) (WDM 27-32-21)

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E. Initial Evaluation

(1) For SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

NOTE: The system is OK if the maintenance message is not in EXISTING FAULTS. If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault. If the maintenance message shows in FAULT HISTORY but the stick shaker did not operate, you can ignore the message.

F. Fault Isolation Procedure

(1) Do this test to determine if a related fault exists for SMYD 2, M1748.

(a) If the SMYD 1 BITE is not in the EXISTING FAULTS mode, then do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(b) If this maintenance message: 27-32003 SM 28 VAC POWER, shows in EXISTING FAULTS, then, do this task: 28 VAC SNSR EXC Input Not Present to SMYD 2 - Fault Isolation, 27-32 TASK 808.

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

(2) Replace the right AOA sensor:

(a) These are the tasks:
- Angle of Attack Sensor Removal, AMM TASK 34-21-05-000-801
- Angle of Attack Sensor Installation, AMM TASK 34-21-05-400-801

(b) Do the EXISTING FAULTS test on the SMYD 2 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(d) If the maintenance message does show, then continue.

(3) Do this wiring check between the right AOA sensor and the number 2 SMYD:

(a) Remove the SMYD 2. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Remove the right AOA sensor. To remove the sensor, do this task: Angle of Attack Sensor Removal, AMM TASK 34-21-05-000-801

(c) Examine the connector pins and sockets for damage and unwanted objects.

(d) Do a wiring check between these pins:

SMYD 2	**R AOA SENSOR**
D3685B	**D287**
pin 55	pin 1
ground	pin 2
pin 71	pin 3
pin 72	pin 4
pin 58	pin 5

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install SMYD 2. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

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3) Re-install the AOA sensor. To install the sensor, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.

4) Do the EXISTING FAULTS test on the SMYD 2 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

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

(4) Replace the SMYD 2. To replace the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(a) Do the post installation test in the procedure.

(b) If the test operates correctly, then you corrected the fault.

——————— END OF TASK ———————

811. Right Flap Position Transmitter Signal Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31005 Flap sig error

(b) 27-31029 Flap sig inactive

(2) There is a flap signal error.

(3) The stall warning test failed.

B. Possible Causes

(1) Flap position transmitter, T428

(2) Wiring problem

(3) Stall management yaw damper, M1747 (SMYD 1)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	6	C01205	SMYD-1 SNSR EXC AC

D. Related Data

(1) (SSM 27-32-11)

(2) (WDM 27-32-11)

E. Initial Evaluation

(1) For SMYD 1, M1747, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

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F. Fault Isolation Procedure

(1) Replace the right flap position transmitter:

(a) These are the tasks:

- Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801
- Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801

(b) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(d) If the maintenance message does show, then continue.

(2) Do a wiring check between the right flap position transmitter and the number 1 SMYD.

(a) Remove the number 1 SMYD. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Remove the connector from the right flap position transmitter. To remove the connector, do this task: Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801.

(c) Examine the connector pins and sockets for damage and unwanted objects.

(d) Do a wiring check between these pins:

SMYD 1 D3683B		RIGHT FLAP POSITION TRANSMITTER D428
pin 55	- - - - - - - - - - - - - - - - - -	pin 4
pin 56	- - - - - - - - - - - - - - - - - -	ground
ground	- - - - - - - - - - - - - - - - - -	pin 5
pin 99	- - - - - - - - - - - - - - - - - -	pin 6
pin 98	- - - - - - - - - - - - - - - - - -	pin 7
pin 97	- - - - - - - - - - - - - - - - - -	pin 8

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the flap position transmitter connector. To install the connector, do this task: Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801.

4) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

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

(3) Replace the SMYD 1. To replace the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(a) Do the post installation test in the SMYD installation procedure.

(b) If the test operates correctly, then you corrected the fault.

END OF TASK

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812. Left Flap Position Transmitter Signal Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-32005 Flap sig error

(b) 27-32029 Flap sig inactive

(2) There is a flap signal error.

(3) The stall warning test failed.

B. Possible Causes

(1) Flap position transmitter, T427

(2) Wiring problem

(3) Stall management yaw damper, M1748 (SMYD 2)

C. Circuit Breakers

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC

D. Related Data

(1) (SSM 27-32-21)

(2) (WDM 27-32-21)

E. Initial Evaluation

(1) For SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Replace the left flap position transmitter:

(a) These are the tasks:

- Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801
- Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801

(b) Do the EXISTING FAULTS test on the SMYD 2 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(d) If the maintenance message does show, then continue.

(2) Do this wiring check between the left flap position transmitter and the number 2 SMYD:

(a) Remove the number 2 SMYD. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

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(b) Remove the connector from the left flap position transmitter. To remove the connector, do this task: Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801

(c) Examine the pins and sockets for damage and unwanted material.

(d) Do a wiring check between these pins:

SMYD 2 D3685B		LEFT FLAP POSITION TRANSMITTER D275
pin 55	- - - - - - - - - - - - - - - - - -	pin 4
ground	- - - - - - - - - - - - - - - - - -	pin 5
pin 99	- - - - - - - - - - - - - - - - - -	pin 6
pin 98	- - - - - - - - - - - - - - - - - -	pin 7
pin 97	- - - - - - - - - - - - - - - - - -	pin 8

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the flap position transmitter connector. To install the connector, do this task: Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801.

4) Do the EXISTING FAULTS test on the SMYD 2 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

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

(3) Replace the SMYD 2. To replace the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(a) Do the post installation test in the SMYD installation procedure.

(b) If the test operates correctly, then you corrected the fault.

———————— END OF TASK ————————

813. Asymmetry Signal Present - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31006 LE shows asymetry

(b) 27-32006 LE shows asymetry

(2) The leading edge (LE) shows asymmetry.

B. Possible Causes

(1) Flap slat electronics unit (FSEU), M1746

(a) There is a nuisance fault when the flaps go from flaps up to flaps 1. This fault message may appear but does not effect stall warning operation.

(2) Wiring problem

(3) Stall management yaw damper, M1747 (SMYD 1) or M1748 (SMYD 2)

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (WDM 27-32-11)

(2) (SSM 27-32-11)

(3) (WDM 27-32-21)

(4) (SSM 27-32-21)

E. Initial Evaluation

(1) For both SMYD 1, M1747 and SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If both maintenance messages do not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If both maintenance messages show in EXISTING FAULTS, do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) Repair any problems that you find.

(c) If only one maintenance message (27-31006 or 27-32006) shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this wiring check:

(a) Remove the applicable SMYD. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Remove the FSEU. To remove the FSEU, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(c) Examine the connector pins and sockets for damage and unwanted objects.

(d) Do a wiring check between these pins:

Table 203

MAINTENANCE MESSAGE NUMBER	SMYD CONNECTOR	FSEU CONNECTOR
27-31006	SMYD 1 D3683A	D728A

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(Continued)

MAINTENANCE MESSAGE NUMBER	SMYD CONNECTOR		FSEU CONNECTOR
27-32006	pin 79 SMYD 2 D3685A pin 79	—— ——	pin D11 D728A pin D11

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the FSEU. To install the FSEU, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) For maintenance message 27-31006, do the EXISTING FAULTS test on the SMYD 1 BITE display:

5) For maintenance message 27-32006, do the EXISTING FAULTS test on the SMYD 2 BITE display:

a) To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

b) If the maintenance message does not show, you corrected the fault.

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

(2) Replace the applicable SMYD:

(a) For maintenance message 27-31006, replace the SMYD 1.

(b) For maintenance message 27-32006, replace the SMYD 2.

(c) To replace the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(d) Do the post installation test in the SMYD installation procedure.

(e) If the test operates correctly, then you corrected the fault.

—————— END OF TASK ——————

814. Air/Ground in Air - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31007 AIR/GND IN AIR (SMYD 1)

(b) 27-32007 AIR/GND IN AIR (SMYD 2)

(2) Both main and nose air/ground signals indicate "In Air".

B. Possible Causes

(1) Proximity switch electronics unit (PSEU), M2061

(2) Wiring problem

(3) Stall management yaw damper, M1747 (SMYD 1), M1748 (SMYD 2)

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-11)

(2) (SSM 27-32-21)

(3) (WDM 27-32-11)

(4) (WDM 27-32-21)

E. Initial Evaluation

(1) For SMYD 1, M1747 or SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

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

(a) Do the fault isolation tasks for the maintenance messages that you find.

———————— END OF TASK ————————

815. Stall Warning Test Switch Short - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31009 SW TST SW SHORT (SMYD 1)

(b) 27-32009 SW TST SW SHORT (SMYD 2)

(2) The stall warning (SW) test switch is shorted.

B. Possible Causes

(1) Stall warning test switch, (P5-18)

(2) Wiring problem

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(3) Stall management yaw damper, M1747 (SMYD 1), or M1748 (SMYD 2)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-11)

(2) (SSM 27-32-21)

(3) (WDM 27-32-11)

(4) (WDM 27-32-21)

E. Initial Evaluation

(1) Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the stall warning module:

(a) Remove the stall warning test module. To remove the module, do this task: Stall Warning Test Module Removal, AMM TASK 27-32-21-000-801.

(b) Examine the connector pins and sockets for damage and unwanted objects.

(c) For maintenance message 27-31009, measure for continuity between pins 4 and 5 on the stall warning module connector D2349.

(d) For maintenance message 27-32009, measure for continuity between pins 4 and 5 on the stall warning module connector D2351.

(e) If there is continuity, do these steps:

1) Replace the stall warning module. To replace the module, do this task: Stall Warning Test Module Installation, AMM TASK 27-32-21-400-801.

2) For maintenance message 27-31009, do these steps to test the module:

3) For maintenance message 27-31009, push and hold the STALL WARNING TEST NO. 1 switch on the stall warning test module.

4) For maintenance message 27-32009, push and hold the STALL WARNING TEST NO. 2 switch on the stall warning test module.

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5) For maintenance message 27-31009, make sure the captain's control column shaker operates.

6) For maintenance message 27-32009, make sure the first officer's control column shaker operates.

7) Release the test switch.

8) Make sure the shaker stops.

9) If the stick shaker test operates correctly, then you corrected the fault.

(f) If there is no continuity, then continue.

(2) Do this wiring check:

(a) Remove the applicable SMYD. Do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Examine the connector pins and sockets for damage and unwanted material.

(c) For maintenance message 27-31009, do a wiring check between pin 47 on the SMYD 1 connector D3683A and structure ground.

(d) For maintenance message 27-32009, do a wiring check between pin 47 on the SMYD 2 connector D3685A and structure ground.

(e) If the pin is not grounded, then do these steps:

1) Replace the applicable SMYD. To replace the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

2) Do the post installation test in the SMYD installation procedure.

3) If the test operates correctly, then you corrected the fault.

(f) If the pin is grounded, then continue.

(3) Do this wiring check between the SMYD and stall warning module:

(a) Do a check of the wiring between these pins:

Table 204

MAINTENANCE MESSAGE NUMBER	SMYD CONNECTOR		STALL WARNING MODULE
27-31009	SMYD 1		
	D3683A		D2349
	pin 47	——	pin 5
27-32009	SMYD 2		
	D3685A		D2351
	pin 47	——	pin 5

(b) If you find a problem with the wiring, do these steps:

1) Repair the wiring.

2) Re-install the stall warning module. To install the module, do this task: Stall Warning Test Module Installation, AMM TASK 27-32-21-400-801.

3) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

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4) For maintenance message 27-31009, do the EXISTING FAULTS test on the SMYD 1 BITE display:

5) For maintenance message 27-32009, do the EXISTING FAULTS test on the SMYD 2 BITE display:

a) To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

——————— END OF TASK ———————

816. Program Pin Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31010 PRGM PIN (SMYD 1)

(b) 27-32010 PRGM PIN (SMYD 2)

(2) There is a program pin fault.

(a) A program pin on the SMYD is set high by grounding the pin.

(b) The number of grounded program pins on a SMYD must be even.

1) The parity pin is grounded or left open to make sure the number of grounded pins is even.

2) A fault will display if the number of grounded pins is not even.

(c) These are the functions of the program pins:

Table 205

PROGRAM PIN	HIGH (GROUND)	LOW (OPEN)
0	NUMBER 1 POSITION	NOT NO. 1 POSITION
1	NUMBER 2 POSITION	NOT NO. 2 POSITION
2	ALT FLAP	NOT ALT FLAP
3	CAA CERTIFICATION	FAA CERTIFICATION
4	737-600	NOT 737-600
5 *[1]	737-800	NOT 737-800
6 *[1]	737-700	NOT 737-700
7	WINGLETS	NOT WINGLETS
PARITY	PINS 0 - 7 IS ODD	PINS 0 - 7 IS EVEN

*[1] 737-900: Pins 5 and 6 are grounded for model identifier.

B. Possible Causes

(1) Wiring problem

(2) Stall management yaw damper, M1747 (SMYD 1) or M1748 (SMYD 2)

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-11)

(2) (SSM 27-32-21)

(3) (WDM 27-32-11)

(4) (WDM 27-32-21)

E. Initial Evaluation

(1) For SMYD 1, M1747, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this exchange check of the SMYD:

(a) For maintenance message 27-31010, do these steps:

1) Put a tag that reads "SUSPECT" on SMYD 1, M1747.

2) Put a tag that reads "OK" on SMYD 2, M1748.

(b) For maintenance message 27-32010, do these steps:

1) Put a tag that reads "SUSPECT" on SMYD 2, M1748.

2) Put a tag that reads "OK" on SMYD 1, M1747.

(c) Exchange the locations of SMYD 1, M1747 and SMYD 2, M1748. These are the tasks:

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: Make sure you do the installation test for each SMYD.

(d) If the original maintenance message does not show in EXISTING FAULTS during the installation test and the related maintenance message for the other SMYD does show, then do these steps:

1) Replace the SMYD tagged "SUSPECT". These are the tasks:

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

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- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: If it is your airline's policy, you must return the SMYD tagged "OK" to its original location.

2) If the maintenance message does not show in EXISTING FAULTS during the installation test, then you corrected the fault. Remove the tags from the SMYDs.

(e) If neither the original maintenance message nor the related maintenance message for the other SMYD shows, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the SMYD or in the SMYD tagged "SUSPECT".

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801
2) Remove the tags from the SMYDs.

(f) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801
2) Remove the tags from the SMYDs.

(2) Do this wiring check:

(a) For maintenance message 27-31010, remove the number 1 SMYD:

(b) For maintenance message 27-32010, remove the number 2 SMYD:

1) To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(c) Examine the connector pins and sockets for damage and contamination.

(d) Compare these pins to (WDM 27-32-11) or (WDM 27-32-21):

Table 206

PROGRAM PIN	FAULT 27-31010	FAULT 27-32010
0	D3683B PIN 34	D3685B PIN 34
1	D3683B PIN 76	D3685B PIN 76
2	D3683B PIN 74	D3685B PIN 74
3	D3683B PIN 78	D3685B PIN 78
4	D3683A PIN 84	D3685A PIN 84
5	D3683A PIN 100	D3685A PIN 100
6	D3683B PIN 48	D3685B PIN 48
7	D3683B PIN 75	D3685B PIN 75

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(Continued)

PROGRAM PIN	FAULT 27-31010	FAULT 27-32010
PARITY	D3683B PIN 49	D3685B PIN 49

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) For maintenance message 27-31010, do the EXISTING FAULTS test on the SMYD 1 BITE display:

4) For maintenance message 27-32010, do the EXISTING FAULTS test on the SMYD 2 BITE display:

a) To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

—————— END OF TASK ——————

817. Air Data Input Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31012 AD DATA INVALID (SMYD 1)

(b) 27-31013 AD OUT OF RANGE (SMYD 1)

(c) 27-32012 AD DATA INVALID (SMYD 2)

(d) 27-32013 AD OUT OF RANGE (SMYD 2)

(2) The air data inputs are in error.

B. Possible Causes

(1) Air data inertial reference unit, M1749 (ADIRU 1) or M1752 (ADIRU 2)

(2) Stall management yaw damper, M1747 (SMYD 1) or M1748 (SMYD 2)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

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D. Related Data

(1) (SSM 27-32-11)

(2) (SSM 27-32-21)

(3) (WDM 27-32-11)

(4) (WDM 27-32-21)

E. Initial Evaluation

(1) For SMYD 1, M1747 or SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) Do the fault isolation tasks for the maintenance messages that you find.

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

(2) Do these steps to replace the applicable SMYD:

(a) For maintenance message 27-31012 or 27-31013, replace the SMYD 1.

(b) For maintenance message 27-32012 or 27-32013, replace the SMYD 2.

(c) To replace the SMYD, these are the tasks:

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(d) Do the post installation test in the SMYD installation procedure.

(e) If the test operates correctly, then you corrected the fault.

——————— END OF TASK ———————

818. IRU Input Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31015 IR1 DATA INVALID (SMYD 1)

(b) 27-31016 IR1 OUT OF RANGE (SMYD 1)

(c) 27-31018 IR2 DATA INVALID (SMYD 1)

(d) 27-31019 IR2 OUT OF RANGE (SMYD 1)

(e) 27-32015 IR1 DATA INVALID (SMYD 2)

(f) 27-32016 IR1 OUT OF RANGE (SMYD 2)

(g) 27-32018 IR2 DATA INVALID (SMYD 2)

(h) 27-32019 IR2 OUT OF RANGE (SMYD 2)

(2) The inertial reference unit inputs are in error.

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B. Possible Causes

(1) Air data inertial reference unit, M1749 (ADIRU 1) or M1752 (ADIRU 2)

(2) Stall management yaw damper, M1747 (SMYD 1) or M1748 (SMYD 2)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-11)

(2) (SSM 27-32-21)

(3) (WDM 27-32-11)

(4) (WDM 27-32-21)

E. Initial Evaluation

(1) For SMYD 1, M1747 or SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do the BITE procedure for the ADIRU. To do the BITE test, do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) Do the fault isolation tasks for the maintenance messages that you find.

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

(2) Do these steps to replace the applicable SMYD:

(a) For maintenance message 27-31015, 27-31016, 27-31018 or 27-31019, replace the SMYD 1. To replace the SMYD, these are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(b) For maintenance message 27-32015, 27-32016, 27-32018 or 27-32019, replace the SMYD 2. To replace the SMYD, these are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

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(c) Do the post installation test in the SMYD installation procedure.

(d) If the test operates correctly, then you corrected the fault.

——————— END OF TASK ———————

819. No DEU Data to SMYD 1 - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-31020 NO DEU DATA

(2) There is no data from the display electronics unit (DEU) to the number 1 stall management yaw damper (SMYD).

(3) The stall warning test failed.

B. Possible Causes

(1) Display electronics unit (DEU), M1808

(2) Wiring problem

(3) Stall management yaw damper (SMYD) 1, M1747

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-12)

(2) (WDM 27-32-12)

E. Initial Evaluation

(1) For SMYD 1, M1747, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Do these steps to make sure that the DEU operates properly:

(a) Do this task: DEU Self-Test Procedure, 31-62 TASK 802.

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(b) Repair any problems that you find.

(c) If you do not find any problems, then continue.

(2) Do this wiring check:

(a) Remove the number 1 SMYD. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Remove the DEU. To remove the DEU, do this task: Display Electronic Unit Removal, AMM TASK 31-62-21-000-801

(c) Examine the connector pins and sockets for damage and contamination.

(d) Do a wiring test between these pins:

(SMYD 1) D3683B	(CDS DEU) D3973D
pin 65	pin A15
pin 64	pin B15

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the DEU. To install the DEU, do this task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801.

4) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(f) If you do not find a problem with the wiring, then continue.

(3) Do these steps to replace the DEU:

(a) These are the tasks:
- Display Electronic Unit Removal, AMM TASK 31-62-21-000-801
- Display Electronic Unit Installation, AMM TASK 31-62-21-400-801

(b) Do the EXISTING FAULTS test on the SMYD 1 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(d) If the maintenance message shows, then continue.

(4) Do these steps to replace the SMYD 1:

(a) Replace the SMYD 1. To replace the SMYD, these are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(b) Do the post installation test in the SMYD installation procedure.

(c) If the test operates correctly, then you corrected the fault.

——————— END OF TASK ———————

820. No DEU Data to SMYD 2 - Fault Isolation

A. Description

(1) This task is for this maintenance message:

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(a) 27-32020 NO DEU DATA

(2) There is no data from the display electronics unit (DEU) to the number 2 SMYD.

(3) The stall warning test failed.

B. Possible Causes

(1) Display electronics unit (DEU), M1809

(2) Wiring problem

(3) Stall management yaw damper (SMYD) 2, M1748

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-22)

(2) (WDM 27-32-22)

E. Initial Evaluation

(1) For SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do these steps to make sure that the DEU operates properly:

(a) Do this task: DEU Self-Test Procedure, 31-62 TASK 802.

(b) Repair any problems that you find.

(c) If you do not find any problems, then continue.

(2) Do this wiring check:

(a) Remove the number 2 SMYD. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Remove the DEU. To remove the DEU, do this task: Display Unit Removal, AMM TASK 31-62-11-000-801

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(c) Examine the connector pins and sockets for damage and contamination.

(d) Do a wiring test between these pins:

SMYD 1 D3685B	CDS DEU D3975D
pin 65	pin A15
pin 64	pin B15

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the DEU. To install the DEU, do this task: Display Unit Installation, AMM TASK 31-62-11-400-801

4) Do the EXISTING FAULTS test on the SMYD 2 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(f) If you do not find a problem with the wiring, then continue.

(3) Do these steps to replace the DEU:

(a) These are the tasks:
- Display Unit Removal, AMM TASK 31-62-11-000-801
- Display Unit Installation, AMM TASK 31-62-11-400-801

(b) Do the EXISTING FAULTS test on the SMYD 2 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(d) If the maintenance message shows, then continue.

(4) Do these steps to replace the SMYD 2:

(a) Replace the SMYD 2. To replace the SMYD, these are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(b) Do the post installation test in the SMYD installation procedure.

(c) If the test operates correctly, then you corrected the fault.

——————— END OF TASK ———————

821. DEU Input Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31021 DEU DATA INVALID (SMYD 1)

(b) 27-31022 DEU OUT OF RANGE (SMYD 1)

(c) 27-32021 DEU DATA INVALID (SMYD 2)

(d) 27-32022 DEU OUT OF RANGE (SMYD 2)

(2) The display electronics unit (DEU) inputs are in error.

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B. Possible Causes

(1) Display electronics unit (DEU), M1809

(2) Stall management yaw damper, M1747 (SMYD 1) or M1748 (SMYD 2)

HAP 001-007, 028-054, 101-999

(3) Speedbrake handle position transmitter, M1439

HAP ALL

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-12)

(2) (SSM 27-32-22)

(3) (WDM 27-32-12)

(4) (WDM 27-32-22)

E. Initial Evaluation

(1) For SMYD 1, M1747 or SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) The DEU out of range problem most likely occurs when the radio altitude range in the original SMYD lists faults with RA signals above 2500 feet. This nuisance fault can be erased.

HAP 001-007, 028-054, 101-999

1) The DEU OUT OF RANGE fault may also occur if the speedbrake handle position transmitter is not properly adjusted. If the fault continues, do one of theses tasks:

a) Speed Brake Lever Position Sensor Adjustment, AMM TASK 27-62-37-400-802

b) Speed Brake Lever Position Sensor Adjustment (Alternate Method), AMM TASK 27-62-37-400-803

HAP ALL

(b) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(c) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

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F. Fault Isolation Procedure

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

(a) Do the fault isolation tasks for the maintenance messages that you find.

(b) If you did not find any problems, then replace the applicable SMYD:

1) These are the tasks:

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

END OF TASK

822. No FMC Data to SMYD 1 - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-31025 NO FMC DATA

(2) There is no data from the flight management computer (FMC) to the number 1 SMYD.

(3) The stall warning test failed.

B. Possible Causes

HAP 037-054, 101-999

(1) Flight management computer (FMC), M1175 or M1632

HAP 001-013, 015-026, 028-036

(2) Flight management computer (FMC), M1175.

HAP ALL

(3) FMCS transfer relay, R475

(4) Wiring problem

(5) Stall management yaw damper (SMYD) 1, M1747

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-12)

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(2) (WDM 27-32-12)

E. Initial Evaluation

(1) Do these steps to get details on the fault:

(a) Put the FMC mode select switch to the NORMAL/BOTH ON L position.

1) For SMYD 1, M1747, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(b) Put the FMC mode select switch to the BOTH ON R position.

1) For SMYD 1, M1747, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(c) If the maintenance message shows at both switch positions, then the fault is one of the these:

1) FMCS transfer relay
2) Wiring between the FMCS transfer relay and SMYD 1
3) SMYD 1

(d) If the maintenance message shows when the select switch is in the NORMAL/BOTH ON L position, then do the Fault Isolation Procedure below. The problem is one of these:

1) FMC 1
2) FMCS transfer relay
3) Wiring between the FMC 1 and FMCS transfer relay

(e) If the maintenance message shows when the select switch is in the BOTH ON R position, then do the Fault Isolation Procedure below. The problem is one of these:

1) FMC 2
2) FMCS transfer relay
3) Wiring between the FMC 2 and FMCS transfer relay

(f) If the maintenance message does not show, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this test of the FMC:

(a) Do this task: Flight Management Computer System BITE Procedure, 34-61 TASK 801.

(b) Repair any problems that you find.

(c) If you do not find any problems, then continue.

(2) Do this exchange check of the FMCS transfer relay:

(a) Put a tag that reads "SUSPECT" on the FMCS transfer relay 1, R475.

(b) Put a tag that reads "OK" on the FMCS transfer relay 2, R476.

(c) Exchange the locations of the two transfer relays.

(d) Do the EXISTING FAULTS test on both SMYD BITE panels. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

(e) If the original maintenance message does not show in EXISTING FAULTS during the test and the related maintenance message for the other SMYD does show, then do these steps:

1) Replace the FMCS transfer relay tagged "SUSPECT".

NOTE: If it is your airline's policy, you must return the relay tagged "OK" to its original location.

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2) If the maintenance message does not show in EXISTING FAULTS during the test, then you corrected the fault. Remove the tags from the relays.

(f) If neither the original maintenance message nor the related maintenance message for the other relay shows, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the relay or in the relay tagged "SUSPECT".

1) If it is your airline's policy, return the relays to their original locations.

2) Remove the tags from the relays.

(g) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the relays to their original locations.

2) Remove the tags from the relays.

(3) Do this wiring check between the FMCS transfer relay and the number 1 SMYD:

(a) Remove the SMYD 1. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Remove the FMCS transfer relay.

(c) Examine the connector pins and sockets for damage and unwanted material.

(d) Do a continuity test between these pins:

SMYD 1 D3683A		**FMCS XFR RELAY D3263**
pin 29	- - - - - - - - - - - - - - - - - -	pin E
pin 42	- - - - - - - - - - - - - - - - - -	pin F

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the FMCS transfer relay.

4) Do the EXISTING FAULTS test on the SMYD 1 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(f) If you do not find a problem with the wiring, then continue.

(4) Do a wiring check between the FMCS transfer relay and the FMCs:

(a) Remove the FMC 1 and FMC 2. To remove the FMC, do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801.

(b) Remove the FMCS transfer relay.

(c) Examine the connector pins and sockets for damage and unwanted material.

(d) For the FMC 1, do a wiring check between these pins:

FMC 1 D2179A		**FMCS XFR RELAY D3267**
pin G9	- - - - - - - - - - - - - - - - - -	pin E
pin H9	- - - - - - - - - - - - - - - - - -	pin F

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(e) For the FMC 2, do a wiring check between these pins:

FMC 2 D3261A		FMCS XFR RELAY D3265
pin G9	- - - - - - - - - - - - - - - - - -	pin E
pin H9	- - - - - - - - - - - - - - - - - -	pin F

HAP ALL

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-install the FMC. To install the FMC, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.
3) Re-install the FMCS transfer relay.
4) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801
5) If the maintenance message does not show, then you corrected the fault.

(g) If you do not find a problem with the wiring, then continue.

(5) Do this exchange check of the SMYD:

(a) Put a tag that reads "SUSPECT" on SMYD 1, M1747.

(b) Put a tag that reads "OK" on SMYD 2, M1748.

(c) Exchange the locations of SMYD 1, M1747 and SMYD 2, M1748. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: Make sure you do the installation test for each SMYD.

(d) If the original maintenance message does not show in EXISTING FAULTS during the installation test and the related maintenance message for the other SMYD does show, then do these steps:

1) Replace the SMYD tagged "SUSPECT". These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: If it is your airline's policy, you must return the SMYD tagged "OK" to its original location.

2) If the maintenance message does not show in EXISTING FAULTS during the installation test, then you corrected the fault. Remove the tags from the SMYDs.

(e) If neither the original maintenance message nor the related maintenance message for the other SMYD shows, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the SMYD or in the SMYD tagged "SUSPECT".

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

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- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Remove the tags from the SMYDs.

(f) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Remove the tags from the SMYDs.

(6) Do these steps to replace the applicable FMC:

HAP 037-054, 101-999; AIRPLANES WITH DUAL FMC

(a) If the maintenance message occurred with the FMC selector switch in the NORMAL/BOTH ON LEFT position, replace the number 1 FMC.

(b) If the maintenance message occurred with the FMC selector switch in the BOTH ON RIGHT position, replace the number 2 FMC.

HAP ALL

(c) To replace the FMC, These are the tasks:
- FMCS Computer Removal, AMM TASK 34-61-02-000-801
- FMCS Computer Installation, AMM TASK 34-61-02-400-801

(d) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

——————— END OF TASK ———————

823. No FMC Data to SMYD 2 - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-32025 NO FMC DATA

(2) There is no data from the flight management computer (FMC) to the number 2 stall management yaw damper (SMYD).

(3) The stall warning test failed.

B. Possible Causes

HAP 037-054, 101-999

(1) Flight management computer, M1175 (FMC 1) or M1632 (FMC 2)

HAP 001-013, 015-026, 028-036

(2) Flight management computer (FMC), M1175.

HAP ALL

(3) FMCS transfer relay, R476

(4) Wiring problem

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(5) Stall management yaw damper (SMYD) 2, M1748

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-22)

(2) (WDM 27-32-22)

HAP 037-054, 101-999

E. Initial Evaluation

(1) Do these steps to get details on the fault:

(a) Put the FMC mode select switch to the NORMAL/BOTH ON R position.

1) For SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(b) Put the FMC mode select switch to the BOTH ON L position.

1) For SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(c) If the maintenance message shows at both switch positions, then do the Fault Isolation Procedure below. The fault is one of the these:

1) FMCS transfer relay

2) Wiring between the FMCS transfer relay and SMYD 2

3) SMYD 2

(d) If the maintenance message shows when the select switch is in the NORMAL/BOTH ON R position, then do the Fault Isolation Procedure below. The problem is one of these:

1) FMC 2

2) FMCS transfer relay

3) Wiring between the FMC 2 and FMCS transfer relay

(e) If the maintenance message shows when the select switch is in the BOTH ON L position, then do the Fault Isolation Procedure below. The fault is one of these:

1) FMC 1

2) FMCS transfer relay

3) Wiring between the FMC 1 and FMCS transfer relay

(f) If the maintenance message does not show, then there was an intermittent fault.

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HAP 037-054, 101-999 (Continued)

HAP ALL

F. Fault Isolation Procedure

(1) Do this test of the FMC:

(a) Do this task: Flight Management Computer System BITE Procedure, 34-61 TASK 801.

(b) Repair any problems that you find.

(c) If do not find any problems, then continue.

(2) Do this exchange check of the FMCS transfer relay:

(a) Put a tag that reads "OK" on the FMCS transfer relay 1, R475.

(b) Put a tag that reads "SUSPECT" on the FMCS transfer relay 2, R476.

(c) Exchange the locations of the two transfer relays.

(d) Do the EXISTING FAULTS test on both SMYD BITE panels. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(e) If the original maintenance message does not show in EXISTING FAULTS during the test and the related maintenance message for the other SMYD does show, then do these steps:

1) Replace the FMCS transfer relay tagged "SUSPECT".

NOTE: If it is your airline's policy, you must return the relay tagged "OK" to its original location.

2) If the maintenance message does not show in EXISTING FAULTS during the test, then you corrected the fault. Remove the tags from the relays.

(f) If neither the original maintenance message nor the related maintenance message for the other relay shows, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the relay or in the relay tagged "SUSPECT".

1) If it is your airline's policy, return the relays to their original locations.

2) Remove the tags from the relays.

(g) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the relays to their original locations.

2) Remove the tags from the relays.

(3) Do this wiring check between the FMCS transfer relay and the number 2 SMYD:

(a) Remove the SMYD 2. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Remove the FMCS transfer relay.

(c) Examine the connector pins and sockets for damage and unwanted material.

(d) Do a continuity test between these pins:

SMYD 2 D3685A	**FMCS XFR RELAY D3423**
pin 29	pin C
pin 42	pin D

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(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the FMCS transfer relay.

4) Do the EXISTING FAULTS test on the SMYD 2 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(f) If you do not find a problem with the wiring, then continue.

(4) Do a wiring check between the FMCS transfer relay and the FMCs:

(a) Remove the FMC 1 and FMC 2. To remove the FMC, do this task: FMCS Computer Removal, AMM TASK 34-61-02-000-801

(b) Remove the FMCS transfer relay.

(c) Examine the connector pins and sockets for damage and unwanted material.

(d) For the FMC 1, do a wiring check between these pins:

FMC 1 D2179B		FMCS XFR RELAY D3425
pin D7	- - - - - - - - - - - - - - - - - -	pin C
pin E7	- - - - - - - - - - - - - - - - - -	pin D

HAP 037-054, 101-999; AIRPLANES WITH DUAL FMC

(e) For the FMC 2, do a wiring check between these pins:

FMC 2 D3261B		FMCS XFR RELAY D3427
pin D7	- - - - - - - - - - - - - - - - - -	pin C
pin E7	- - - - - - - - - - - - - - - - - -	pin D

HAP ALL

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FMC. To install the FMC, do this task: FMCS Computer Installation, AMM TASK 34-61-02-400-801.

3) Re-install the FMCS transfer relay.

4) Do the EXISTING FAULTS test on the SMYD 2 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(g) If you do not find a problem with the wiring, then continue.

(5) Do this exchange check of the SMYD:

(a) Put a tag that reads "OK" on SMYD 1, M1747.

(b) Put a tag that reads "SUSPECT" on SMYD 2, M1748.

(c) Exchange the locations of SMYD 1, M1747 and SMYD 2, M1748. These are the tasks:

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

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- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: Make sure you do the installation test for each SMYD.

(d) If the original maintenance message does not show in EXISTING FAULTS during the installation test and the related maintenance message for the other SMYD does show, then do these steps:

1) Replace the SMYD tagged "SUSPECT". These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

   NOTE: If it is your airline's policy, you must return the SMYD tagged "OK" to its original location.

2) If the maintenance message does not show in EXISTING FAULTS during the installation test, then you corrected the fault. Remove the tags from the SMYDs.

(e) If neither the original maintenance message nor the related maintenance message for the other SMYD shows, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the SMYD or in the SMYD tagged "SUSPECT".

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Remove the tags from the SMYDs.

(f) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Remove the tags from the SMYDs.

(6) Do these steps to replace the applicable FMC:

HAP 037-054, 101-999; AIRPLANES WITH DUAL FMC

(a) If the maintenance message occurred with the FMC selector switch in the NORMAL/BOTH ON RIGHT position, replace the number 2 FMC.

(b) If the maintenance message occurred with the FMC selector switch in the BOTH ON LEFT position, replace the number 1 FMC.

HAP ALL

(c) To replace the FMC, these are the tasks:
- FMCS Computer Removal, AMM TASK 34-61-02-000-801
- FMCS Computer Installation, AMM TASK 34-61-02-400-801

(d) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

—————— END OF TASK ——————

824. FMC Input Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31026 FMC DATA INVALID (SMYD 1)

(b) 27-31027 FMC OUT OF RANGE (SMYD 1)

(c) 27-32026 FMC DATA INVALID (SMYD 2)

(d) 27-32027 FMC OUT OF RANGE (SMYD 2)

(2) The flight management computer (FMC) inputs are in error.

B. Possible Causes

(1) Flight management computer, M1175 (FMC 1) or M1632 (FMC 2)

(2) Stall management yaw damper (SMYD), M1747 (SMYD 1) or M1748 (SMYD 2)

(3) Flight management computer data is out of range. You may need to enter the correct data for the SMYD to work. Bad data such as airplane gross weight or altitude may cause this fault message.

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-12)

(2) (SSM 27-32-22)

(3) (WDM 27-32-12)

(4) (WDM 27-32-22)

E. Initial Evaluation

(1) For SMYD 1, M1747 or SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message does not show in EXISTING FAULTS, after a valid gross weight is entered in the FMC CDU, it can be ignored as a nuisance message.

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(c) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do these steps to make sure the FMC operates correctly:

(a) Do this task: Flight Management Computer System BITE Procedure, 34-61 TASK 801.

(b) If you find any maintenance messages, then do the fault isolation tasks for the maintenance messages that you find.

(c) Do a check of FMC values to make sure they are valid. If they are not valid correct them and do an EXISTING FAULTS test on the SMYD 1 BITE display. To do the test, do this task: Stall Management Yaw Damper (SMYD) BITE Test - Existing Faults, AMM TASK 27-32-00-740-801

(d) If you do not find any maintenance messages, then continue.

(2) For maintenance message 27-31026 or 27-31027, do these steps:

(a) Replace the SMYD 1. To replace the SMYD, these are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(b) Do the EXISTING FAULTS test on the SMYD 1 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(3) For maintenance message 27-32026 or 27-32027, do these steps:

(a) Replace the SMYD 2. To replace the SMYD, These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(b) Do the EXISTING FAULTS test on the SMYD 2 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

——————— END OF TASK ———————

825. No MCP Data to SMYD 1 - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-31023 NO MCP DATA

(2) There is no data from the mode control panel (MCP) to the number 1 stall management yaw damper (SMYD).

B. Possible Causes

(1) Mode control panel (MCP), M198

(2) Wiring problem

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C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-12)

(2) (WDM 27-32-12)

E. Initial Evaluation

(1) For SMYD 1, M1747, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Make sure that the MCP operates properly.

(a) Do this task: Mode Control Panel Tests, 22-11 TASK 803.

(b) If you find any maintenance messages, then do the fault isolation tasks for the maintenance messages that you find.

(c) If you do not find any maintenance messages, then continue.

(2) Do this wiring check between the MCP and the number 1 SMYD:

(a) Remove the SMYD 1. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Remove the MCP. To remove the MCP, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801

(c) Examine the connector pins and sockets for damage and unwanted material.

(d) Do a continuity test between these pins:

SMYD 1	**MCP**
D3683B	**D301**
pin 66	pin 2
pin 79	pin 1

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

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2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the MCP. To install the MCP, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801

4) Do the EXISTING FAULTS test on the SMYD 1 BITE display. To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

(f) If you do not find a problem with the wiring, then continue.

(3) Do this exchange check of the SMYD:

(a) Put a tag that reads "SUSPECT" on SMYD 1, M1747.

(b) Put a tag that reads "OK" on SMYD 2, M1748.

(c) Exchange the locations of SMYD 1, M1747 and SMYD 2, M1748. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: Make sure you do the installation test for each SMYD.

(d) If the original maintenance message does not show in EXISTING FAULTS during the installation test and the related maintenance message for the other SMYD does show, then do these steps:

1) Replace the SMYD tagged "SUSPECT". These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: If it is your airline's policy, you must return the SMYD tagged "OK" to its original location.

2) If the maintenance message does not show in EXISTING FAULTS during the installation test, then you corrected the fault. Remove the tags from the SMYDs.

(e) If neither the original maintenance message nor the related maintenance message for the other SMYD shows, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the SMYD or in the SMYD tagged "SUSPECT".

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Remove the tags from the SMYDs.

(f) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Remove the tags from the SMYDs.

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(4) Do these steps to replace the MCP:

(a) To replace the MCP, these are the tasks:

- DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801
- DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801

(b) Do the EXISTING FAULTS test on the SMYD 1 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801

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

——————— END OF TASK ———————

826. MCP Data Invalid - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31024 MCP DATA INVALID (SMYD 1)

(b) 27-32024 MCP DATA INVALID (SMYD 2)

(2) The mode control panel (MCP) input is in error.

B. Possible Causes

(1) Mode control panel (MCP), M198

(2) Stall management yaw damper, M1747 (SMYD 1), M1748 (SMYD 2)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-12)

(2) (SSM 27-32-22)

(3) (WDM 27-32-12)

(4) (WDM 27-32-22)

E. Initial Evaluation

(1) For SMYD 1, M1747 or SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

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(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do these steps to make sure that the MCP operates properly:

(a) Do this task: Mode Control Panel Tests, 22-11 TASK 803.

(b) If you find any maintenance messages, then do the fault isolation tasks for the maintenance messages that you find.

(c) If you do not find any maintenance messages, then continue.

(2) Do these steps to replace the SMYD:

(a) For maintenance message 27-31024, replace the SMYD 1.

(b) For maintenance message 27-32024, replace the SMYD 2.

(c) To replace the SMYD, these are the tasks:

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(d) Do the post installation test in the SMYD installation procedure.

(e) If the test operates correctly, then you corrected the fault.

———————— END OF TASK ————————

828. No MCP Data to SMYD 2 - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-32023 NO MCP DATA

(2) There is no data from the mode control panel (MCP) to the number 2 stall management yaw damper (SMYD).

B. Possible Causes

(1) Mode control panel (MCP), M198

(2) Wiring problem

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

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D. Related Data

(1) (SSM 27-32-22)

(2) (WDM 27-32-22)

E. Initial Evaluation

(1) For SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Make sure that the MCP operates properly.

(a) Do this task: Mode Control Panel Tests, 22-11 TASK 803.

(b) If you find any maintenance messages, then do the fault isolation tasks for the maintenance messages that you find.

(c) If you do not find any maintenance messages, then continue.

(2) Do this wiring check between the MCP and the number 2 SMYD:

(a) Remove the SMYD 2. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

(b) Remove the MCP. To remove the MCP, do this task: DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801

(c) Examine the connector pins and sockets for damage and unwanted material.

(d) Do a continuity test between these pins:

SMYD 2	**MCP**
D3685B	**D301**
pin 66 - - - - - - - - - - - - - - - - - -	pin 2
pin 79 - - - - - - - - - - - - - - - - - -	pin 1

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the MCP. To install the MCP, do this task: DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801.

4) Do the EXISTING FAULTS test on the SMYD 2 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

(f) If you do not find a problem with the wiring, then continue.

(3) Do this exchange check of the SMYD:

(a) Put a tag that reads "OK" on SMYD 1, M1747.

(b) Put a tag that reads "SUSPECT" on SMYD 2, M1748.

(c) Exchange the locations of SMYD 1, M1747 and SMYD 2, M1748. These are the tasks:

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- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: Make sure you do the installation test for each SMYD.

(d) If the original maintenance message does not show in EXISTING FAULTS during the installation test and the related maintenance message for the other SMYD does show, then do these steps:

1) Replace the SMYD tagged "SUSPECT". These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

   NOTE: If it is your airline's policy, you must return the SMYD tagged "OK" to its original location.

2) If the maintenance message does not show in EXISTING FAULTS during the installation test, then you corrected the fault. Remove the tags from the SMYDs.

(e) If neither the original maintenance message nor the related maintenance message for the other SMYD shows, then do these steps to complete the task:

NOTE: There was an intermittent fault in the connector at the SMYD or in the SMYD tagged "SUSPECT".

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Remove the tags from the SMYDs.

(f) If the maintenance message shows in EXISTING FAULTS during the installation test, then continue.

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Remove the tags from the SMYDs.

(4) Do these steps to replace the MCP:

(a) To replace the MCP, these are the tasks:
   - DFCS Mode Control Panel Removal, AMM TASK 22-11-34-000-801
   - DFCS Mode Control Panel Installation, AMM TASK 22-11-34-400-801

(b) Do the EXISTING FAULTS test on the SMYD 2 BITE display. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

——————— END OF TASK ———————

830. Air/Ground Inactive - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

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(a) 27-31030 AIR/GND INACTIVE (SMYD 1)

(b) 27-32030 AIR/GND INACTIVE (SMYD 2)

(2) Both main and nose air/ground signals are inactive.

B. Possible Causes

(1) Proximity switch electronics unit (PSEU), M2061

(2) Wiring problem

(3) Stall management yaw damper, M1747 (SMYD 1), M1748 (SMYD 2)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-11)

(2) (SSM 27-32-21)

(3) (WDM 27-32-11)

(4) (WDM 27-32-21)

E. Initial Evaluation

(1) For SMYD 1, M1747 or SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

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

(a) Do the fault isolation tasks for the maintenance messages that you find.

END OF TASK

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831. SPD LIM Shows on the Captain's CDS - Fault Isolation

A. Description

(1) The indication SPD LIM shows on the captain's CDS.

(2) There is no data from the display electronics unit (DEU) to the number 1 stall management yaw damper (SMYD).

B. Possible Causes

(1) Wiring problem

(2) Stall management yaw damper (SMYD) 1, M1747

(3) Display electronics unit (DEU), M1808

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-12)

(2) (WDM 27-32-12)

E. Initial Evaluation

(1) For SMYD 1, M1747, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in FAULT HISTORY, but was not accompanied by the operation of the stick shaker, then this can be considered a nuisance fault.

(c) If the maintenance message shows in FAULT HISTORY, and was accompanied by the operation of the stick shaker, do this task:AMM TASK 27-32-00-710-801.

(2) For the captain's DEU, do this task: DEU Self-Test Procedure, 31-62 TASK 802.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure.

F. Fault Isolation Procedure

(1) Do this check for a related fault on the SMYD 1, M1747:

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(a) To do the test, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(b) If a DEU fault shows in EXISTING FAULTS, then do this wiring check:

1) Remove the number 1 SMYD. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

2) Remove the DEU. To remove the DEU, do this task: Display Unit Removal, AMM TASK 31-62-11-000-801.

3) Examine the connector pins and sockets for damage and contamination.

4) Do a wiring test between these pins:

SMYD 1 D3683B	CDS DEU D3973D
pin 65	pin A15
pin 64	pin B15

5) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

c) Re-install the DEU. To install the DEU, do this task: Display Unit Removal, AMM TASK 31-62-11-000-801.

d) Do a test of the CDS. To do this, do this task: DEU Self-Test Procedure, 31-62 TASK 802.

e) If the test operates correctly, then you corrected the fault.

(c) If no DEU faults show in EXISTING FAULTS, then continue.

(2) If there are other maintenance messages in EXISTING FAULTS, then do these steps:

(a) Do the associated fault isolation procedure for the maintenance message.

(b) Do a test of the CDS. To do this, do this task: DEU Self-Test Procedure, 31-62 TASK 802.

(c) If the test operates correctly, then you corrected the fault.

(d) If the test does not operate correctly, then continue.

(3) Do this exchange check of the SMYD:

(a) Put a tag that reads "SUSPECT" on SMYD 1, M1747.

(b) Put a tag that reads "OK" on SMYD 2, M1748.

(c) Exchange the locations of SMYD 1, M1747 and SMYD 2, M1748. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(d) Do a test of each CDS. Do this task: DEU Self-Test Procedure, 31-62 TASK 802.

(e) If the test operates correctly on both CDS, then there was an intermittent fault. Do these steps to complete the task:

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Remove the tags from the SMYDs.

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(f) If the fault has moved to the other CDS, then do these steps:

1) Replace the SMYD tagged "SUSPECT". These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

NOTE: If it is your airline's policy, you must return the SMYD tagged "OK" to its original location.

2) Do a test of the CDS. Do this task: DEU Self-Test Procedure, 31-62 TASK 802.

3) If the test operates correctly, then you corrected the fault. Remove the tags from the SMYDs.

(g) If the fault continues on the same CDS, then continue.

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Remove the tags from the SMYDs.

(4) Do these steps to replace the DEU:

(a) These are the tasks:
- Display Unit Removal, AMM TASK 31-62-11-000-801
- Display Unit Installation, AMM TASK 31-62-11-400-801

(b) Do a test of the CDS. Do this task: DEU Self-Test Procedure, 31-62 TASK 802.

(c) If the test operates correctly, then you corrected the fault.

END OF TASK

832. Stall Management Yaw Damper (SMYD) 1 Internal Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-31000 SMYD FAULT

(b) 27-31001 SMYD SW FAULT

(c) 27-81001 SMYD A/S FAULT

(2) There is a fault internal to the SMYD 1.

B. Possible Causes

(1) Stall management yaw damper, M1747 (SMYD 1)

(a) If electrical power to the Yaw Damper is not turned on at the same time as electrical power to the SMYD fault messages may appear.

(b) If electrical power to the Autoslat and FSEU is not turned on at the same time as electrical power to the SMYD fault messages may appear.

C. Fault Isolation Procedure

(1) Replace the SMYD, M1747. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

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(a) Do the post installation test in the SMYD installation procedure.

(b) If the test operates correctly, then you corrected the fault.

—————— END OF TASK ——————

833. SPD LIM Shows on the First Officer's CDS - Fault Isolation

A. Description

(1) The indication SPD LIM shows on the first officer's CDS.

(2) There is no data from the display electronics unit (DEU) to the number 2 stall management yaw damper (SMYD).

B. Possible Causes

(1) Wiring problem

(2) Stall management yaw damper (SMYD) 2, M1748

(3) Display electronics unit (DEU) 2, M1809

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	4	C01207	SMYD-2 SNSR EXC AC
B	5	C01206	SMYD-2 CMPTR DC
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (SSM 27-32-22)

(2) (WDM 27-32-22)

E. Initial Evaluation

(1) For SMYD 2, M1748, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in FAULT HISTORY, but was not accompanied by the operation of the stick shaker, then this can be considered a nuisance fault.

(c) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

(d) If the maintenance message shows in FAULT HISTORY, and was accompanied by the operation of the stick shaker, do this task:AMM TASK 27-32-00-710-801.

(2) For the first officer's DEU, do this task: DEU Self-Test Procedure, 31-62 TASK 802.

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(a) If the maintenance message does not show in EXISTING FAULTS, then there was an intermittent fault.

(b) If the maintenance message shows in EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check for a related fault on the SMYD 2, M1748:

(a) Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(b) If a DEU fault shows in EXISTING FAULTS, then do this wiring check:

1) Remove the number 2 SMYD. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

2) Remove the DEU. To remove the DEU, do this task: Display Unit Removal, AMM TASK 31-62-11-000-801.

3) Examine the connector pins and sockets for damage and contamination.

4) Do a wiring test between these pins:

SMYD 2	**CDS DEU**
D3685B	**D3975D**
pin 65 - - - - - - - - - - - - - - - - - -	pin A15
pin 64 - - - - - - - - - - - - - - - - - -	pin B15

5) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

c) Re-install the DEU. To install the DEU, do this task: Display Unit Removal, AMM TASK 31-62-11-000-801.

d) Do a test of the CDS. Do this task: DEU Self-Test Procedure, 31-62 TASK 802.

e) If the test operates correctly, then you corrected the fault.

(c) If no DEU faults show in EXISTING FAULTS, then continue.

(2) If there are other maintenance messages in EXISTING FAULTS, then do these steps:

(a) Do the associated fault isolation procedure for the maintenance message.

(b) Do a test of the CDS. Do this task: DEU Self-Test Procedure, 31-62 TASK 802.

(c) If the test operates correctly, then you corrected the fault.

(d) If the test does not operate correctly, then continue.

(3) Do this exchange check of the SMYD:

(a) Put a tag that reads "OK" on SMYD 1, M1747.

(b) Put a tag that reads "SUSPECT" on SMYD 2, M1748.

(c) Exchange the locations of SMYD 1, M1747 and SMYD 2, M1748. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(d) Do a test of each CDS. Do this task: DEU Self-Test Procedure, 31-62 TASK 802.

(e) If the test operates correctly on both CDS, then there was an intermittent fault. Do these steps to complete the task:

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1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801
2) Remove the tags from the SMYDs.

(f) If the fault has moved to the other CDS, then do these steps:

1) Replace the SMYD tagged "SUSPECT". These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

   NOTE: If it is your airline's policy, you must return the SMYD tagged "OK" to its original location.
2) Do a test of the CDS. Do this task: DEU Self-Test Procedure, 31-62 TASK 802.
3) If the test operates correctly, then you corrected the fault. Remove the tags from the SMYDs.

(g) If the fault continues on the same CDS, then do these steps and continue:

1) If it is your airline's policy, return the SMYDs to their original locations. These are the tasks:
   - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
   - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801
2) Remove the tags from the SMYDs.

(4) Do these steps to replace the DEU:

(a) These are the tasks:
   - Display Unit Removal, AMM TASK 31-62-11-000-801
   - Display Unit Installation, AMM TASK 31-62-11-400-801

(b) Do a test of the CDS (DEU Self-Test Procedure, 31-62 TASK 802).

(c) If the test operates correctly, then you corrected the fault.

——————— END OF TASK ———————

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801. Stabilizer Control Cable Tension Repeatedly Checks Low - Fault Isolation

A. Description

(1) During the manual operation, the stabilizer control wheels drives the aft cable drum on the jackscrew gearbox through the cables to move the stabilizer. During the electrical operation, the jackscrew and gearbox assembly drives the forward control mechanism, through the cables, to provide the stabilizer position indication and rotate the trim wheels.

B. Possible Causes

(1) Stabilizer control cables

C. Initial Evaluation

(1) Do a tension check of the stabilizer control cables. Do this task: Stabilizer Control Cable and Chain Adjustment, AMM TASK 27-41-00-820-801.

(a) If the tension of the stabilizer control cables is low, then do the Fault Isolation Procedure below.

(b) If the tension of the stabilizer control cables is OK, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do these steps to re-rig the stabilizer control cables:

(a) Re-stretch the stabilizer control cables. To stretch them, do this task: Stabilizer Control Cable and Chain Adjustment, AMM TASK 27-41-00-820-801.

(b) Re-adjust the stabilizer control cables. To adjust them, do this task: Stabilizer Control Cable and Chain Adjustment, AMM TASK 27-41-00-820-801.

(c) Operate the stabilizer system 25 times through full cycle.

(d) If the tension of the stabilizer control cables is OK, then you corrected the fault.

(e) If the tension of the stabilizer control cable remains low, then continue.

(2) Do a check of the stabilizer control cables. Do this task: Inspection of the Control Cable Wire Rope, AMM TASK 20-20-31-200-801.

(a) If you find a problem, then do these steps:

1) Replace the stabilizer control cables that have a problem. To replace them, these are the tasks:

- Control Cables Removal, AMM TASK 20-10-91-000-801
- Control Cables Installation, AMM TASK 20-10-91-400-801

2) Do a tension check of the stabilizer control cables. Do this task: Stabilizer Control Cable and Chain Adjustment, AMM TASK 27-41-00-820-801.

3) If the tension of the stabilizer control cables is OK, then you corrected the fault.

END OF TASK

802. Stabilizer Electrical Trim Does Not Operate Nose Down - Fault Isolation

A. Description

(1) The pilots operate the two STAB TRIM switches on the control wheel for the electrical trim operation when the stab trim cutout switch is in the NORMAL position. This gives electric input to the stabilizer trim motor (STM). The motor operates and drives the gearbox and stabilizer jackscrew to move the stabilizer.

(2) When the pilots operate the two STAB TRIM switches in the nose down position. This will move the stabilizer to a maximum of 3 degrees up.

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(3) Trailing edge (TE) flap position determines motor speed. It operates at low speed when the flaps are retracted. When the flaps are not up the speed change relay is energized to switch the STM to high speed.

B. Possible Causes

(1) Faulty internal logic of STM.

(2) Wiring problem

(3) Stab trim cutout switch, S272

(4) Stabilizer electric actuator nose down limit switch, S844

(5) TE flap switch, S245

(6) Stabilizer trim motor, M1659

(7) Stab trim interlock relay, R850

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

D. Related Data

(1) (SSM 27-41-11)

(2) (WDM 27-41-11)

(3) (WDM 27-41-12)

E. Initial Evaluation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the captain's or first officer's control wheel to the NOSE DOWN position.

(e) If the stabilizer leading edge does not move up, then do the Fault Isolation Procedure below.

(f) If the stabilizer leading edge moves up, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Reset the following circuit breaker:

NOTE: Resetting this circuit breaker will reset the internal STM logic.

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(a) Open this circuit breaker for at least 10 seconds.

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

(a) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

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

(2) Do this check of the stabilizer trim motor (STM), M1659:

(a) Disconnect connector D700 from the STM, M1659.

NOTE: The STM is located in the area aft of the pressure bulkhead.

(b) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE DOWN position.

(c) Do a check for 28v DC from pin 6 of connector D700 to structure ground (WDM 27-41-12).

(d) If there is 28v DC at pin 6 of connector D700, then do these steps:

1) Release the captain's or first officer's STAB TRIM switches.

2) Replace the STM, M1659. These are the tasks:
- Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801
- Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801

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

(e) If there is not 28v DC at pin 6 of connector D700, then continue.

1) Release the captain's or first officer's STAB TRIM switches.

2) Re-connect connector D700.

(3) Do a check of the stabillizer trim interlock relay, R850 as follows:

(a) Disconnect the D700 connector from the STM, M1659.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

WARNING: MAKE SURE THAT PERSONNEL AND EQUIPMENT STAY AWAY FROM THE LEADING EDGE FLAPS AND SLATS, TRAILING EDGE FLAPS, AND DRIVE MECHANISMS. THE FLAPS, SLATS, AND DRIVE MECHANISMS MOVE QUICKLY. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(c) Put the flaps in the FLAP 1, or more, position. Do this task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.

1) Do a voltage check between pin 8 and pin 5 of connector D700.

NOTE: DO NOT TOUCH THE OTHER PINS IN CONNECTOR D700 DURING VOLTAGE CHECKS. THE CONNECTOR D700 HAS 115VAC IN SOME OF THE PINS AND THIS VOLTAGE CAN CAUSE INJURY TO PERSONS.

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a) If there is 2V DC or more on connector D700 pin 8, then do the following:

<1> Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

<2> Examine the wiring between pin 8 of connector D700 and pin A1 of connector D13364 and replace the R850 relay, as necessary.

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

<a> If the Repair Confirmation is not OK, then continue with the task.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

(e) Push and hold the two stabilizer trim control switches on the Captain's control wheel to the NOSE UP position.

(f) Disconnect the D700 connector from the STM, M1659.

1) Do a voltage check between pin 7 of connector D700 and structure ground.

NOTE: DO NOT TOUCH THE OTHER PINS IN CONNECTOR D700 DURING VOLTAGE CHECKS. THE CONNECTOR D700 HAS 115VAC IN SOME OF THE PINS AND THIS VOLTAGE CAN CAUSE INJURY TO PERSONS.

a) If there is 2V DC or more on connector D700 pin 7, then do the following:

<1> Release the two stabilizer trim control switches on the Captain's control wheel.

<2> Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT

<3> Examine the wiring between pin 7 of connector D700 and pin C1 of connector D13364 and replace the R850 relay, as necessary.

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

<a> If the Repair Confirmation is not OK, then continue with the task.

(g) Push and hold the two stabilizer trim control switches on the Captain's control wheel to the NOSE DOWN position.

(h) Disconnect the D700 connector from the STM, M1659.

1) Do a voltage check between pin 6 of connector D700 and structure ground.

NOTE: DO NOT TOUCH THE OTHER PINS IN CONNECTOR D700 DURING VOLTAGE CHECKS. THE CONNECTOR D700 HAS 115VAC IN SOME OF THE PINS AND THIS VOLTAGE CAN CAUSE INJURY TO PERSONS.

a) If there is 2V DC or more on connector D700 pin 6, then do the following:

<1> Release the two stabilizer trim control switches on the Captain's control wheel.

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<2> Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT

<3> Examine the wiring between pin 6 of connector D700 and pin D1 of connector D13364 and replace the R850 relay, as necessary.

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

<a> If the Repair Confirmation is not OK, then continue with the task.

<5> Make sure the two stabilizer trim control switches on the Captain's control wheel have been released.

<6> Make sure that these circuit breakers are open:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT

<7> Connect connector D700 to the stabilizer trim motor, M1659.

<8> Clear any potential faults:

<a> Open this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

I. Wait for a minimum of three seconds.

<b> Close this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

(4) Do this check of the stabilizer trim cutout switch, S272:

(a) Disconnect connector D46044J from connector D46044P.

NOTE: You can find the connector D46044 in the main wheel well.

(b) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE DOWN position.

(c) Do a check for 28v DC from pin 6 of connector D46044J to structure ground (WDM 27-41-12).

(d) If there is not 28v DC at pin 6 of connector D46044J, then do these steps:

1) Release the captain's or first officer's STAB TRIM switches.

2) Remove the aft aisle stand panel, P8.

3) Disconnect connector D698 from connector D3524.

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4) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE DOWN position.

5) Do a check for 28v DC from pin 7 of connector D698 to structure ground (WDM 27-41-11).

6) If there is not 28v DC at pin 7 of connector D698, then do these steps:

a) Repair the wiring between these pins of terminal block TB803 at the STA 226 and connector D698 at panel P8 (WDM 27-41-11):

TB803		**D698**
term YB9	- - - - - - - - - - - - - -	pin 7

b) Re-connect connector D698.

c) Install the aft aisle stand panel, P8.

d) Re-connect connector D46044J.

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

7) If there is 28v DC at pin 7 of connector D698, then continue.

a) Release the captain's and first officer's STAB TRIM switches.

8) Do this check of wiring between these pins of connector D698 at panel P8 and connector D46044J at main wheel well (WDM 27-41-11) (WDM 27-41-12):

D698		**D46044J**
pin 8	- - - - - - - - - - - - - - - - - -	pin 6

9) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D698.

c) Install the aft aisle stand panel, P8.

d) Re-connect connector D46044J.

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

10) If you do not find a problem with the wiring, then do these steps:

a) Replace the stabilizer trim cutout switch, S272. These are the tasks:
- Stabilizer Trim Cutout Switch Removal, AMM TASK 27-41-91-000-801
- Stabilizer Trim Cutout Switch Installation, AMM TASK 27-41-91-400-801

(e) If there is 28v DC at pin 6 of connector D46044J, then continue.

1) Re-connect connector D46044J.

(5) Replace the stabilizer electric actuator nose down limit, S844. These are the tasks:
- Stabilizer Trim Limit Switch Removal, AMM TASK 27-41-94-000-801
- Stabilizer Trim Limit Switch Installation, AMM TASK 27-41-94-400-801

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

1) If the Repair Confirmation is not OK, then continue.

(6) Replace the TE flap switch, S245. These are the tasks:
- Flap Limit Switch Removal, AMM TASK 27-51-63-000-801
- Flap Limit Switch Installation, AMM TASK 27-51-63-400-801

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

1) If the Repair Confirmation is not OK, then continue.

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(7) Do this wiring check:

(a) Disconnect connector D700 from the STM, M1659.

(b) Disconnect connector D46044J from connector D46044P.

NOTE: You can find the connector D46044 in the main wheel well.

(c) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE UP or NOSE DOWN position.

1) Do a wiring check between these pins of connector D700 at the STM, M1659 and connector D46044 in the main wheel well (WDM 27-41-12):

D700		D46044J
pin 6	- - - - - - - - - - - - - - - - - -	pin 7

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D700.

3) Re-connect connector D46044J.

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

G. Repair Confirmation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the captain's or first officer's control wheel to the NOSE DOWN position.

(e) If the stabilizer leading edge moves down, then you corrected the fault.

END OF TASK

803. Stabilizer Electrical Trim Does Not Operate Nose Up - Fault Isolation

A. Description

(1) The pilots operate the two STAB TRIM switches on the control wheel for electrical trim operation when the stab trim cutout switch is in the NORMAL position. This gives electric input to the stabilizer trim motor (STM). The motor operates and drives the gearbox and stabilizer jackscrew to move the stabilizer.

(2) When the pilots operate the two STAB TRIM switches in the nose up position. This will move the stabilizer to a maximum of 14 degrees down.

B. Possible Causes

(1) STM logic needs to be reset by cycling the circuit breaker to the STM.

(2) Wiring problem

(3) Stab trim cutout switch, S272

(4) Stabilizer electric actuator nose up switch, S144

(5) Stabilizer trim motor, M1659

(6) Stab trim interlock relay, R850

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

D. Related Data

(1) (SSM 27-41-11)

(2) (WDM 27-41-11)

(3) (WDM 27-41-12)

E. Initial Evaluation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the captain's or first officer's control wheel to the NOSE UP position.

(e) If the stabilizer leading edge move down, then there was an intermittent fault.

(f) If the stabilizer leading edge does not move down, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Reset the following circuit breaker.

NOTE: Resetting this circuit breaker will reset the internal STM logic.

(1) Open circuit breaker for at least 10 seconds.

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

(1) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

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

(2) Do this check of the stabilizer trim motor (STM), M1659:

(a) Disconnect connector D700 from the STM, M1659.

NOTE: The STM is located in the area aft of the pressure bulkhead.

(b) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE UP position.

(c) Do a check for 28v DC from pin 7 of connector D700 to structure ground (WDM 27-41-12).

(d) If there is 28v DC at pin 7 of connector D700, then do these steps:

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1) Release the captain's or first officer's STAB TRIM switches.
2) Replace the STM, M1659. These are the tasks:
   - Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801
   - Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801
3) Do the Repair Confirmation at the end of this task.

(e) If there is not 28v DC at pin 7 of connector D700, then do these steps:
1) Release the captain's or first officer's STAB TRIM switches.
2) Re-connect connector D700.

(3) Do a check of the stabillizer trim interlock relay, R850 as follows:
(a) Disconnect the D700 connector from the STM, M1659.
(b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

WARNING: MAKE SURE THAT PERSONNEL AND EQUIPMENT STAY AWAY FROM THE LEADING EDGE FLAPS AND SLATS, TRAILING EDGE FLAPS, AND DRIVE MECHANISMS. THE FLAPS, SLATS, AND DRIVE MECHANISMS MOVE QUICKLY. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(c) Put the flaps in the FLAP 1, or more, position. Do this task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.
1) Do a voltage check between pin 8 and pin 5 of connector D700.

NOTE: DO NOT TOUCH THE OTHER PINS IN CONNECTOR D700 DURING VOLTAGE CHECKS. THE CONNECTOR D700 HAS 115VAC IN SOME OF THE PINS AND THIS VOLTAGE CAN CAUSE INJURY TO PERSONS.

a) If there is 2V DC or more on connector D700 pin 8, then do the following:
<1> Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

<2> Examine the wiring between pin 8 of connector D700 and pin A1 of connector D13364 and replace the R850 relay, as necessary.
<3> Do the Repair Confirmation at the end of this task.
<a> If the Repair Confirmation is not OK, then continue with the task.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

(e) Push and hold the two stabilizer trim control switches on the Captain's control wheel to the NOSE UP position.
(f) Disconnect the D700 connector from the STM, M1659.

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1) Do a voltage check between pin 7 of connector D700 and structure ground.

NOTE: DO NOT TOUCH THE OTHER PINS IN CONNECTOR D700 DURING VOLTAGE CHECKS. THE CONNECTOR D700 HAS 115VAC IN SOME OF THE PINS AND THIS VOLTAGE CAN CAUSE INJURY TO PERSONS.

a) If there is 2V DC or more on connector D700 pin 7, then do the following:

<1> Release the two stabilizer trim control switches on the Captain's control wheel.

<2> Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT

<3> Examine the wiring between pin 7 of connector D700 and pin C1 of connector D13364 and replace the R850 relay, as necessary.

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

<a> If the Repair Confirmation is not OK, then continue with the task.

(g) Push and hold the two stabilizer trim control switches on the Captain's control wheel to the NOSE DOWN position.

(h) Disconnect the D700 connector from the STM, M1659.

1) Do a voltage check between pin 6 of connector D700 and structure ground.

NOTE: DO NOT TOUCH THE OTHER PINS IN CONNECTOR D700 DURING VOLTAGE CHECKS. THE CONNECTOR D700 HAS 115VAC IN SOME OF THE PINS AND THIS VOLTAGE CAN CAUSE INJURY TO PERSONS.

a) If there is 2V DC or more on connector D700 pin 6, then do the following:

<1> Release the two stabilizer trim control switches on the Captain's control wheel.

<2> Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT

<3> Examine the wiring between pin 6 of connector D700 and pin D1 of connector D13364 and replace the R850 relay, as necessary.

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

<a> If the Repair Confirmation is not OK, then continue with the task.

<5> Make sure the two stabilizer trim control switches on the Captain's control wheel have been released.

<6> Make sure that these circuit breakers are open:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

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F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT

<7> Connect connector D700 to the stabilizer trim motor, M1659.

<8> Clear any potential faults:

<a> Open this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

I. Wait for a minimum of three seconds.

<b> Close this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

(4) Do a check of the stabilizer trim cutout switch, S272:

(a) Remove the aft aisle stand panel, P8.

(b) Disconnect connector D698 from connector D3524.

(c) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE UP position.

(d) Do a check for 28v DC from pin 6 of connector D698 to structure ground (WDM 27-41-11).

(e) If there is not 28v DC at pin 6 of connector D698, then do these steps:

1) Repair the wiring between these pins of terminal block TB803 at the STA 226 and connector D698 at panel P8 (WDM 27-41-11):

TB803		**D698**
term YA11	- - - - - - - - - - - - - -	pin 6

2) Re-connect connector D698.

3) Install the aft aisle stand panel, P8.

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

(f) If there is 28v DC at pin 6 of connector D698, then continue.

1) Release the captain's or first officer's STAB TRIM switches.

2) Re-connect connector D698.

3) Install the aft aisle stand panel, P8.

(5) Replace the stabilizer trim actuator nose up limit switch, S144. These are the tasks:

- Stabilizer Trim Limit Switch Removal, AMM TASK 27-41-94-000-801
- Stabilizer Trim Limit Switch Installation, AMM TASK 27-41-94-400-801

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

1) If the Repair Confirmation is not OK, then continue.

(6) Do this wiring check:

(a) Disconnect connector D700 from the STM, M1659.

(b) Remove the aft aisle stand panel, P8.

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(c) Disconnect connector D698 from connector D3524.

(d) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE UP or NOSE DOWN position.

1) Do a wiring check between these pins of connector D700 at the STM, M1659 and connector D698 at panel P8 (WDM 27-41-11) (WDM 27-41-12):

D700		D698
pin 7	- - - - - - - - - - - - - - - - - -	pin 1

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D700.

3) Re-connect connector D698.

4) Install the aft aisle stand panel, P8.

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

(f) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D700.

2) Re-connect connector D698.

3) Install the aft aisle stand panel, P8.

(7) Replace the stabilizer trim cutout switch, S272. These are the tasks:

- Stabilizer Trim Cutout Switch Removal, AMM TASK 27-41-91-000-801
- Stabilizer Trim Cutout Switch Installation, AMM TASK 27-41-91-400-801

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

G. Repair Confirmation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the captain's or first officer's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer leading edge moves up.

(f) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE UP position.

1) If the stabilizer leading edge moves down, then you corrected the fault.

(g) If necessary, close the following circuit breakers and remove the safety tags:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT

END OF TASK

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804. Stabilizer Electrical Trim Problem - Fault Isolation

A. Description

(1) The pilots operate the two STAB TRIM switches on the control wheel for electrical trim operation when the stab trim cutout switch is in the NORMAL position. This gives electric input to the stabilizer trim motor (STM). The motor operates and drives the gearbox and stabilizer jackscrew to move the stabilizer to a maximum of 3 degrees up and 14 degrees down.

B. Possible Causes

(1) STM internal logic needs to be reset.

(2) Wiring problem

(3) Stab trim control relay, R64

(4) Stab trim cutout switch, S272

(5) Stabilizer trim motor, M1659

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

D. Related Data

(1) (SSM 27-41-11)

(2) (WDM 27-41-11)

(3) (WDM 27-41-12)

E. Initial Evaluation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the captain's or first officer's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer edge moves up.

(f) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE UP position.

(g) Make sure the stabilizer edge moves down.

(h) If the stabilizer leading edge does not move up and down, then do the Fault Isolation Procedure below.

(i) If the stabilizer leading edge moves up and down, then there was an intermittent fault.

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F. Fault Isolation Procedure

(1) Reset the following circuit breaker:

NOTE: Resetting this circuit breaker will reset the internal STM logic.

(a) Open this circuit breaker for at least 10 seconds.

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

(a) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

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

(2) Do this check for power at the stabilizer trim motor (STM), M1659:

(a) Disconnect connector D700 from the STM, M1659.

NOTE: The STM is located in the area aft of the pressure bulkhead.

(b) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE UP position.

(c) Do a check for 115v AC between the three pins 1, 2, 3 and pin 10 of connector D700 at the STM, M1659 (WDM 27-41-12):

D700		D700
pin 1	- - - - - - - - - - - - - - - - - -	pin 10
pin 2	- - - - - - - - - - - - - - - - - -	pin 10
pin 3	- - - - - - - - - - - - - - - - - -	pin 10

(d) If there is 115v AC at pins 1, 2, and 3 of connector D700, then do these steps:

1) Release the captain's or first officer's STAB TRIM switches.

2) Replace the STM, M1659. These are the tasks:
- Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801
- Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801

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

(e) If there is not 115v AC at any of the three pins 1, 2, or 3 of connector D700 (all three pins do not have power to them), then skip to the next subtask and do a check of the power source to the stab trim control relay, R64.

NOTE: Before you check the power source at to the R64 relay, make sure the power source to the STM (C00840) was closed when you were checking for 115VAC at the above three pins.

(f) If there is not 115v AC at any one (but not all three) of the three pins 1, 2, or 3 of connector D700, then do the following steps:

1) Release the captain's or first officer's STAB TRIM switches.

2) Disconnect connector D40616P from the junction box, J4.

NOTE: You can find the junction box, J4 at STA 262.

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3) Do the wiring check between these pins of connector D700 at STM, M1659 and connector D40616P at junction box, J4 (WDM 27-41-12):

NOTE: You only require to do the wiring check at the pin that do not have 115v AC.

D700		D40616P
pin 1	- - - - - - - - - - - - - - - - - -	pin 1
pin 2	- - - - - - - - - - - - - - - - - -	pin 2
pin 3	- - - - - - - - - - - - - - - - - -	pin 3

4) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect connector D40616P.
   c) Re-connect connector D700.
   d) Do the Repair Confirmation at the end of this task.
5) If you do not find a problem with the wiring, then continue.
6) Re-connect connector D700.
7) Disconnect connector D40602P from the junction box, J4.
8) Disconnect connector D40574P from the right load control center panel, P6.
9) Do the wiring check between these pins of connector D40574P at P6 panel and connector D40602P at junction box, J4 (WDM 27-41-12):

NOTE: You are only required to do the wiring check at the pin of connector D700 that does not have 115v AC.

D700		D40574P		D40602P
pin 1	- - - - - - - - - - - - - -	pin 5	- - - - - - - - - - - - - -	pin 5
pin 2	- - - - - - - - - - - - - -	pin 6	- - - - - - - - - - - - - -	pin 6
pin 3	- - - - - - - - - - - - - -	pin 4	- - - - - - - - - - - - - -	pin 4

10) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect connector D40574P.
   c) Re-connect connector D40602P.
   d) Do the Repair Confirmation at the end of this task.
11) If you do not find a problem with the wiring, then do these steps:
   a) Replace the stab trim control relay, R64 in junction box, J4.
   b) Re-connect connector D40574P.
   c) Re-connect connector D40602P.
   d) Do the Repair Confirmation at the end of this task.

(g) If there is not 115v AC at pins 1, 2, and 3 of connector D700, then continue.
   1) Release the captain's or first officer's STAB TRIM switches.
   2) Re-connect connector D700.

(3) Do this check of the stab trim control relay, R64:
   (a) Disconnect connector D40610P from junction box, J4.

   NOTE: You can find the junction box, J4 at STA 262.

   (b) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE UP position.

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(c) Do a check for 28v DC from pin 7 of connector D40610P to structure ground (WDM 27-41-11).

(d) If there is 28v DC at pin 7 of connector D40610P, then do these steps:

1) Replace the stab trim control relay, R64.

2) Re-connect connector D40610P.

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

(e) If there is not 28v DC at pin 7 of connector D40610P, then continue.

(4) Do this check of the stab trim cutout switch, S272:

(a) Remove the aft aisle stand panel, P8.

(b) Disconnect connector D698 from connector D3524 (WDM 27-41-11).

(c) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE UP position.

(d) Do a check of 28v DC from pin 5 of connector D698 to structure ground (WDM 27-41-11).

(e) If there is 28v DC at pin 5 of connector D698, then do these steps:

1) Release the captain's and first officer's STAB TRIM switches.

2) Do a wiring check between these pins of connector D698 at the panel P8 and connector D40610P at junction box, J4 (WDM 27-41-11):

D698		D40610P
pin 2	- - - - - - - - - - - - - - - - - -	pin 7

3) If you find a problem with the wiring, then do these step:

a) Release the captain's or first officer's STAB TRIM switches.

b) Repair the wiring.

c) Re-connect connector D698.

d) Install the aft aisle stand panel, P8.

e) Re-connect connector D40610P.

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

4) If you do not find a problem with the wiring, then do these steps:

a) Release the captain's or first officer's STAB TRIM switches.

b) Replace the stab trim cutout switch, S272. These are the tasks:

- Stabilizer Trim Cutout Switch Removal, AMM TASK 27-41-91-000-801
- Stabilizer Trim Cutout Switch Installation, AMM TASK 27-41-91-400-801

c) Re-connect connector D698.

d) Install the aft aisle stand panel, P8.

e) Re-connect connector D40610P.

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

(f) If there is not 28v DC at pin 5 of connector D698, then continue.

1) Release the captain's or first officer's STAB TRIM switches.

2) Re-connect connector D40610P.

(5) Do this check for power of the stab trim cutout switch, S272:

(a) Do a check of 28v DC from pin 12 of connector D698 to structure ground (WDM 27-41-11).

(b) If there is 28v DC at pin 12 of connector D698, then do these steps:

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1) Do a wiring check between these pins of terminal block TB803 at the STA 226 and connector D698 at panel P8 (WDM 27-41-11):

TB803		D698
term YA11	- - - - - - - - - - - - - -	pin 5

2) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect connector D698.
   c) Install the aft aisle stand panel, P8.
   d) Do the Repair Confirmation at the end of this task.

(c) If there is not 28v DC at pin 12 of connector D698, then continue.
   1) Re-connect connector D698.
   2) Install the aft aisle stand panel, P8.

(6) Do this check of the following circuit breaker:

(a) Do a check of 28v DC from the load terminal of the following circuit breaker to structure ground:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT

- WDM 27-41-11

(b) If there is not 28v DC at the circuit breaker C207, then do these steps:
   1) Replace the following circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT

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

(c) If there is 28v DC at the circuit breaker C207, then do these steps:
   1) Disconnect connector D40820P from the right load control center panel, P6.
   2) Do a wiring check between these pins of terminal block TB806 at the STA 226 and connector D40820P at panel P6 (WDM 27-41-11):

TB806		D40820P
term YA9	- - - - - - - - - - - - - - -	pin 16

   3) If you find a problem with the wiring, then do these steps:
      a) Repair the wiring.
      b) Re-connect connector D40820P.
      c) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do this check of the stabilizer electrical trim system:
   (a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.
   (b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

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(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the captain's or first officer's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer leading edge moves up.

(f) Push and hold the captain's or first officer's STAB TRIM switches.

1) If the stabilizer leading edge moves down, then you corrected the fault.

———————— END OF TASK ————————

805. Stabilizer Trim Does Not Move Freely - Fault Isolation

A. Description

(1) The pilots operate the two STAB TRIM switches on the control wheel for electrical trim operation when the stab trim cutout switch is in the NORMAL position. This gives electric input to the stabilizer trim motor (STM). The motor operates and drives the gearbox and stabilizer jackscrew to move the stabilizer to a maximum of 3 degrees up and 14 degrees down.

B. Possible Causes

(1) The internal logic of the STM needs to be reset.

(2) Stabilizer trim motor, M1659

(3) Stabilizer ball nut and jackscrew gearbox

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

D. Related Data

(1) (SSM 27-41-11)

(2) (WDM 27-41-11)

(3) (WDM 27-41-12)

E. Initial Evaluation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push the STAB TRIM switches on the captain's or first officer's control wheel to the NOSE DOWN position then to the NOSE UP position.

(e) If the stabilizer does not move freely, then do the Fault Isolation Procedure below.

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(f) If the stabilize moves freely, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Reset the following circuit breaker:

NOTE: Resetting this circuit breaker will reset the internal STM logic.

(a) Open this circuit breaker for at least 10 seconds.

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

(a) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

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

(2) Replace the stabilizer trim motor (STM), M1659. These are the tasks:
- Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801
- Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801

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

(b) If the Repair Confirmation is OK, then you corrected the fault.

(c) If the Repair Confirmation is not OK, then continue.

(3) Replace the stabilizer ball nut and jackscrew gearbox. These are the tasks:
- Stabilizer Ball Nut and Jackscrew Gearbox Removal, AMM TASK 27-41-81-000-801
- Stabilizer Ball Nut and Jackscrew Gearbox Installation, AMM TASK 27-41-81-400-801

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

G. Repair Confirmation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push the STAB TRIM switches on the captain's or first officer's control wheel to the NOSE DOWN position then to the NOSE UP position.

1) If the stabilizer moves freely, then you corrected the fault.

——————— END OF TASK ———————

806. Captain's Stabilizer Trim Control Switches Do Not Operate Trim Up or Trim Down - Fault Isolation

A. Description

(1) During the electrical operation, the pilots manually control the position of the stabilizer with the stabilizer trim control switches on the captain's or first officer's control wheels.

B. Possible Causes

(1) Wiring problem

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(2) Stabilizer trim control switches, S134

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

D. Related Data

(1) (SSM 27-41-11)

(2) (WDM 27-41-11)

(3) (WDM 27-41-12)

E. Initial Evaluation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the captain's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer edge moves up.

(f) Push and hold the captain's STAB TRIM switches to the NOSE UP position.

(g) Make sure the stabilizer edge moves down.

(h) If the stabilizer leading edge does not move up or down, then do the Fault Isolation Procedure below.

(i) If the stabilize leading edge moves up and down, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this wiring check:

(a) Remove the medallion from the captain's control wheel.

(b) Remove the cover from the terminal block, T335 on the captain's control wheel.

(c) Do a wiring check between these pins of the terminal block T335 at the control wheel and of the terminal block TB806 at STA 227 (WDM 27-41-11):

T335		**TB806**
pin 4	- - - - - - - - - - - - - - - - - -	term ZB17
pin 1	- - - - - - - - - - - - - - - - - -	term ZB21

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the cover on the terminal block T335.

3) Re-install the medallion on the captain's control wheel.

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

(e) If you do not find a problem with the wiring, then continue.

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(2) Replace the captain's stabilizer trim control switches, S134. These are the tasks:
- Stabilizer Trim Control Switch Removal, AMM TASK 27-41-97-000-801
- Stabilizer Trim Control Switch Installation, AMM TASK 27-41-97-400-801

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

G. Repair Confirmation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the captain's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer leading edge moves up.

(f) Push and hold the captain's STAB TRIM switches to the NOSE UP position.

1) If the stabilizer leading edge moves down, then you corrected the fault.

——————— END OF TASK ———————

807. Captain's Stabilizer Trim Control Switches Problems - Fault Isolation

A. Description

(1) During the electrical operation, the pilots manually control the position of the stabilizer with the stabilizer trim control switches on the captain's or first officer's control wheels.

B. Possible Causes

(1) Wiring problem

(2) Stabilizer trim control switches, S134

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

D. Related Data

(1) (SSM 27-41-11)

(2) (WDM 27-41-11)

(3) (WDM 27-41-12)

E. Initial Evaluation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

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(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the captain's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer edge moves up.

(f) Push and hold the captain's STAB TRIM switches to the NOSE UP position.

(g) Make sure the stabilizer edge moves down.

(h) If the stabilizer leading edge does not move up and down, then do the Fault Isolation Procedure below.

(i) If the stabilize leading edge moves up and down, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check for power of the stabilizer trim control switches, S134:

(a) Remove the medallion from the captain's control wheel.

(b) Remove the cover from the terminal block, T335 on the captain's control wheel.

(c) Do a wiring check between these pins of the terminal block T335 at control wheel and of the terminal block TB806 at STA 226 (WDM 27-41-11):

T335		TB806
pin 3	- - - - - - - - - - - - - - - - - -	term YA9

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the cover on the terminal block T335.

3) Re-install the medallion on the captain's control wheel.

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

(e) If you do not find a problem with the wiring, then continue.

(2) Replace the captain's stabilizer trim control switches, S134. These are the tasks:

- Stabilizer Trim Control Switch Removal, AMM TASK 27-41-97-000-801
- Stabilizer Trim Control Switch Installation, AMM TASK 27-41-97-400-801

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

G. Repair Confirmation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the captain's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer leading edge moves up.

(f) Push and hold the captain's STAB TRIM switches to the NOSE UP position.

1) If the stabilizer leading edge moves down, then you corrected the fault.

——————— END OF TASK ———————

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808. First Officer's Stabilizer Trim Control Switches Do Not Operate Trim Up or Trim Down - Fault Isolation

A. Description

(1) During the electrical operation, the pilots manually control the position of the stabilizer with the stabilizer trim control switches on the captain's or first officer's control wheels.

B. Possible Causes

(1) Wiring problem

(2) Stabilizer trim control switches, S135

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

D. Related Data

(1) (SSM 27-41-11)

(2) (WDM 27-41-11)

(3) (WDM 27-41-12)

E. Initial Evaluation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the first officer's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer edge moves up.

(f) Push and hold the first officer's STAB TRIM switches to the NOSE UP position.

(g) Make sure the stabilizer edge moves down.

(h) If the stabilizer trim control switches does not move up or down, the do the Fault Isolation Procedure below.

(i) If the stabilize leading edge moves up and down, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this wiring check:

(a) Remove the medallion from the first officer's control wheel.

(b) Remove the cover from the terminal block, T336 on the first officer's control wheel.

(c) Do a wiring check between these pins of the terminal block T365 at the control wheel and of the terminal block TB806 at STA 227 (WDM 27-41-11):

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T336		TB806
pin 4	- - - - - - - - - - - - - - - - - -	term ZB17
pin 1	- - - - - - - - - - - - - - - - - -	term ZB21

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the cover on the terminal block T336.

3) Re-install the medallion on the first officer's control wheel.

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

(e) If you do not find a problem with the wiring, then continue.

(2) Replace the first officer's stabilizer trim control switches, S135. These are the tasks:

- Stabilizer Trim Control Switch Removal, AMM TASK 27-41-97-000-801
- Stabilizer Trim Control Switch Installation, AMM TASK 27-41-97-400-801

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

G. Repair Confirmation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the first officer's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer leading edge moves up.

(f) Push and hold the first officer's STAB TRIM switches to the NOSE UP position.

1) If the stabilizer leading edge moves down, then you corrected the fault.

——————— END OF TASK ———————

809. First Officer's Stabilizer Trim Control Switches Problems - Fault Isolation

A. Description

(1) During the electrical operation, the pilots manually control the position of the stabilizer with the stabilizer trim control switches on the captain's or first officer's control wheels.

B. Possible Causes

(1) Wiring problem

(2) Stabilizer trim control switches, S135

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

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D. Related Data

(1) (SSM 27-41-11)

(2) (WDM 27-41-11)

(3) (WDM 27-41-12)

E. Initial Evaluation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the first officer's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer edge moves up.

(f) Push and hold the first officer's STAB TRIM switches to the NOSE UP position.

(g) Make sure the stabilizer edge moves down.

(h) If the stabilizer leading edge does not move up and down, then do the Fault Isolation Procedure below.

(i) If the stabilize leading edge moves up and down, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this check for power of the stabilizer trim control switches, S135:

(a) Remove the medallion from the first officer's control wheel.

(b) Remove the cover from the terminal block, T336 on the first officer's control wheel.

(c) Do a wiring check between these pins of the terminal block T336 at the control wheel and of the terminal block TB806 at STA 226 (WDM 27-41-11):

T336		**TB806**
pin 3	- - - - - - - - - - - - - - - - - - -	term YA9

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the cover on the terminal block T336.

3) Re-install the medallion on the first officer's control wheel.

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

(e) If you do not find a problem with the wiring, then continue.

(2) Replace the first officer's stabilizer trim control switches, S135. These are the tasks:

- Stabilizer Trim Control Switch Removal, AMM TASK 27-41-97-000-801
- Stabilizer Trim Control Switch Installation, AMM TASK 27-41-97-400-801

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

G. Repair Confirmation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

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(b) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(c) Make sure the flaps are in the retract position.

(d) Push and hold the STAB TRIM switches on the first officer's control wheel to the NOSE DOWN position.

(e) Make sure the stabilizer leading edge moves up.

(f) Push and hold the first officer's STAB TRIM switches to the NOSE UP position.

1) If the stabilizer leading edge moves down, then you corrected the fault.

——————— END OF TASK ———————

810. Stabilizer Trim Speed Problem - Fault Isolation

A. Description

(1) The pilots operate the two STAB TRIM switches on the control wheel for electrical trim operation when the stab trim cutout switch is in the NORMAL position. This gives electric input to the stabilizer trim motor (STM). The motor operates and drives the gearbox and stabilizer jackscrew to move the stabilizer.

(2) Trailing edge (TE) flap position determines motor speed. It operates at low speed when the flaps are retracted. When the flaps are not up the speed change relay is energized to switch the STM to high speed.

B. Possible Causes

(1) The internal logic of the STM needs to be reset

(2) Wiring problem

(3) TE flap switch, S245

(4) Stabilizer trim motor, M1659

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	10	C00207	FLIGHT CONTROL STAB TRIM CONT
D	10	C00840	FLIGHT CONTROL STAB TRIM ACTUATOR

D. Related Data

(1) (SSM 27-41-11)

(2) (WDM 27-41-11)

(3) (WDM 27-41-12)

E. Initial Evaluation

(1) Do this check of the stabilizer electrical trim system:

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WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic system B. To pressurize it, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Set the flaps to the 5-degree position.

(c) Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(e) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(f) Push and hold the STAB TRIM switches on the captain's or first officer's control wheel to the NOSE UP position and then to the NOSE DOWN position.

(g) Make sure the time for the stabilizer to move from its lower limit of travel to up limit of travel is 31-39 seconds.

(h) If the travel time is more than 39 seconds, then do the Fault Isolation Procedure below.

(i) If the travel time is 31-39 seconds, then there was an intermittent fault. Do these steps to complete the task:

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1) Pressurize the hydraulic system B. To pressurize it, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

2) Set the flaps to the retract position.

3) Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

F. Fault Isolation Procedure

(1) Set the flaps to the 5-degree position.

(2) Reset the following circuit breaker:

NOTE: Resetting this circuit breaker will reset the internal STM logic.

(a) Open this circuit breaker for at least 10 seconds.

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

(a) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

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

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(3) Do this wiring check to the stabilizer trim motor (STM), M1659:

(a) Disconnect connector D700 from the STM, M1659.

NOTE: The STM is located in the area aft of the pressure bulkhead.

(b) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE DOWN position.

(c) Do a check for 28v DC from pin 8 of connector D700 to structure ground (WDM 27-41-11).

(d) If there is 28v DC at pin 8 of connector D700, then do these steps:

1) Release the captain's or first officer's STAB TRIM switches.

2) Replace the STM, M1659. These are the tasks:
- Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801
- Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801

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

(e) If there is not 28v DC at pin 8 of connector D700, then continue.

1) Release the captain's or first officer's STAB TRIM switches.

(4) Do this wiring check between the TE flap switch and STM:

(a) Disconnect connector D46044J from connector D46044P.

NOTE: You can find the connector D46044 in the main wheel well.

(b) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE UP or NOSE DOWN position.

1) Do a wiring check between these pins of connector D700 at the STM, M1659 and connector D46044J in the main wheel well (WDM 27-41-12):

D700		D46044J
pin 8	- - - - - - - - - - - - - - - - - -	pin 9

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D46044J.

3) Re-connect connector D700.

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

(d) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D700.

(5) Do this wiring check to the TE flap switch, S245:

(a) Push and hold the captain's or first officer's STAB TRIM switches to the NOSE DOWN position.

(b) Do a check for 28v DC from pin 10 of connector D46044P to structure ground (WDM 27-41-11).

(c) If there is not 28v DC at pin 10 of connector D46044P, then do these steps:

1) Repair the wiring.

2) Re-connect connector D46044J.

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

(d) If there is 28v DC at pin 10 of connector D46044P, then continue.

1) Re-connect connector D46044J.

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(6) Replace the TE flap switch, S245. These are the tasks:
- Flap Limit Switch Removal, AMM TASK 27-51-63-000-801
- Flap Limit Switch Installation, AMM TASK 27-51-63-400-801

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

G. Repair Confirmation

(1) Do this check of the stabilizer electrical trim system:

(a) Make sure the flaps is at the 5-degree position.

(b) If it is necessary, do these steps to set the flaps to the 5-degree position:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

1) Pressurize the hydraulic system B. To pressurize it, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

2) Set the flaps to the 5-unit position.

3) Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(c) Make sure that the main cutout switch, S272, on the P8 panel, is in the NORMAL position.

(d) Make sure that the STAB TRIM switch, S1, on the stab trim and cabin door panel, P8-47, is in the NORMAL position.

(e) Push and hold the STAB TRIM switches on the captain's or first officer's control wheel to the NOSE UP position and then to the NOSE DOWN position.

(f) Make sure the time for the stabilizer to move from its lower limit of travel to up limit of travel is 31-39 seconds.

(g) If the travel time is 31-39 seconds, then you corrected the fault. Do these steps to complete the task:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACE BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

1) Pressurize the hydraulic system B. To pressurize it, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

2) Set the flaps to the retract position.

3) Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

——————— END OF TASK ———————

811. Stabilizer Trim Wheel Coast Problems - Fault Isolation

A. Description

(1) During the electrical operation of the stabilizer, the jackscrew and gearbox assembly drives the forward control mechanism, through the cables, to provide stabilizer position indication and rotate the stabilizer trim wheels.

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(a) When the STAB TRIM switches are released, the stabilizer trim wheels will stop or rotate not more than 2.5 turns with the flaps down.

B. Possible Causes

(1) Internal logic of the STM needs to be reset.

(2) Stabilizer trim motor, M1659

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

D. Fault Isolation Procedure

(1) Reset the following circuit breaker:

NOTE: Resetting this circuit breaker will reset the internal STM logic.

(a) Open this circuit breaker for at least 10 seconds.

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

(a) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
C	2	C00849	AFCS STABILIZER TRIM

1) Check to see if the stabilizer trim wheels will rotate more than 2.5 turns with the flaps down, when the STAB TRIM switches are pushed and then released.

a) If the stabilizer wheels do not rotate more than 2.5 turns with the flaps down, then the problem was fixed by resetting the internal logic of the STM.

b) If the stabilizer wheels rotate more than 2.5 turns with the flaps down, then continue with this fault isolation.

(2) Replace the stabilizer trim motor, M1659. These are the tasks:

- Stabilizer Trim Motor Removal, AMM TASK 27-41-71-000-801
- Stabilizer Trim Motor Installation, AMM TASK 27-41-71-400-801

(a) If the tests in the installation task for the stabilizer trim motor are OK, then you corrected the fault.

——————— END OF TASK ———————

812. Stabilizer Trim Does Not Hold Position In Flight - Fault Isolation

A. Description

(1) The pilots operate the two STAB TRIM switches on the control wheel for electrical trim operation when the stab trim cutout switch is in the NORMAL position. This gives electric input to the stabilizer trim motor (STM). The motor operates and drives the gearbox and stabilizer jackscrew to move the stabilizer.

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B. Possible Causes

(1) Stabilizer ball nut and jackscrew gearbox

C. Fault Isolation Procedure

(1) Replace the stabilizer ball nut and jackscrew gearbox. These are the tasks:
- Stabilizer Ball Nut and Jackscrew Gearbox Removal, AMM TASK 27-41-81-000-801
- Stabilizer Ball Nut and Jackscrew Gearbox Installation, AMM TASK 27-41-81-400-801

(a) If the tests in the installation task for the stabilizer ball nut and jackscrew gearbox are OK, then you corrected the fault.

——————— END OF TASK ———————

813. Stabilizer Surface Has Excessive Play - Fault Isolation

A. Description

(1) The stabilizer controls the pitch trim of the airplane about the lateral axis. The stabilizer is on the aft section of the fuselage.

B. Possible Causes

(1) Horizontal stabilizer center section hinge bearings

(2) Horizontal stabilizer jackscrew

(3) Horizontal stabilizer hinge bearings

C. Fault Isolation Procedure

(1) Do an inspection check of the horizontal stabilizer. Do this task: AMM TASK 27-09-91-200-804.

(a) If there is a problem, then replace the applicable components that have excessive freeplay (AMM 27-09-91/601).

——————— END OF TASK ———————

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801. Flap/Slat Electronics Unit (FSEU) BITE Procedure

A. General

(1) You do the Flap/Slat Electronics Unit (FSEU) BITE test at the front of panel of the FSEU. The FSEU is on the E1-1 shelf in the electronic equipment bay. These are the menu items in the FSEU BITE that you will use in this task:

(a) EXISTING FAULTS

(b) FAULT HISTORY

(2) For EXISTING FAULTS, the FSEU does internal tests, discrete output checks, sensor interface checks, and does a check of the flight compartment indication lights. The faults that are found during the EXISTING FAULTS test are active. A maintenance message identifies a specific fault which is found by the FSEU. The maintenance messages have English text and a seven digit number.

(3) The FSEU will keep a record of faults in FAULT HISTORY. The faults are grouped by flight leg. Flight leg 0 (LEG 0) is the most recent flight and includes faults that occurred on the ground after the most recent flight.

B. Procedure

(1) Do the BITE procedure for the FSEU (Figure 201):

(a) Push the ON/OFF button.

NOTE: The display will show EXISTING FAULTS?

(b) Push the YES button to select the EXISTING FAULTS? test.

NOTE: The display will show TEST IN PROGRESS.

(c) Make sure these lights come on for 5 seconds while the display shows TEST IN PROGRESS:

1) P2 Center Instrument Panel

a) LE FLAPS TRANSIT

b) LE FLAPS EXT

2) P5 Aft Overhead Panel

a) Leading Edge Devices TRANSIT

b) Leading Edge Devices EXT

c) Leading Edge Devices FULL EXT

(d) If there are existing faults, then the display will show the first fault in the list. Do these steps:

1) Write the maintenance message.

2) Push the down arrow button.

NOTE: The display will show FAULT DETAILS?

3) Push the YES button.

4) Write the maintenance message number.

5) Push the down arrow button.

6) Write the fault type data. These are the possible fault types:

a) LATCHED

b) HARD

c) INTERMTNT ACTIVE

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d) INTERMTNT INACTIVE

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e) LATCHED: GND TEST

HAP ALL

7) Push the MENU button.

NOTE: This will return you to the first fault in the list of existing faults.

8) Push the down arrow button to look for more faults.

9) Refer to the table at the end of this task to find the fault isolation task for applicable maintenance message.

(e) If the test show NO FAULTS, then do these steps to look for faults in fault history:

NOTE: This will not show current faults. This will show faults that have been stored in the memory of the FSEU.

1) Push the MENU button.

NOTE: The display will show EXISTING FAULTS?

2) Push the down arrow button until the display shows FAULT HISTORY?.

3) Push the YES button.

NOTE: The display will show FLIGHT LEG 0?

4) Push the YES button.

5) Write the maintenance message.

6) Push the down arrow button.

NOTE: The display will show FAULT DETAILS?

7) Push the NO button.

8) Write the maintenance message.

9) Repeat these steps until the display shows END OF LIST.

10) Push the up arrow button until the display shows FAULT DETAILS?.

11) Push the YES button.

12) Write the maintenance message.

13) Push the down arrow button.

14) Write the fault type data. These are the possible fault types:

a) LATCHED

b) HARD

c) INTERMTNT ACTIVE

d) INTERMTNT INACTIVE

HAP 037-054

e) LATCHED: GND TEST

HAP ALL

15) Push the MENU button.

NOTE: This will return you to the FLIGHT LEG 0? display.

16) Push the down arrow button to look for faults in other flight legs.

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17) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

——————— END OF TASK ———————

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-51101 FSEU FAILED	27-51 TASK 805
FSEU	27-51102 FSEU FAILED	27-51 TASK 806
FSEU	27-51103 FSEU FAILED	27-51 TASK 807
FSEU	27-51105 FSEU FAILED	27-88 TASK 801
FSEU	27-51106 FSEU FAILED	27-51 TASK 815
FSEU	27-51107 FSEU FAILED	27-51 TASK 816
FSEU	27-51108 FSEU FAILED	27-51 TASK 817
FSEU	27-51109 FSEU FAILED	27-51 TASK 818
FSEU	27-51110 FSEU FAILED	27-88 TASK 802
FSEU	27-51351 TE FLAP UCM	27-51 TASK 830
FSEU	27-51401 IN BYP REA UNKN	27-51 TASK 808
FSEU	27-51402 ALT MODE IS ARMED	27-51 TASK 847
FSEU	27-51403 ALT ARM SW DISAG	27-51 TASK 847
FSEU	27-51404 FLP LOAD RLF 40	27-51 TASK 809
FSEU	27-51405 FLP LOAD RLF 30 or FLP LOAD RLF 10	27-51 TASK 810
FSEU	27-51406 FLP LOAD RELIEF	27-51 TASK 831
FSEU	27-51407 TE FAIL TO DRIVE	27-51 TASK 848
FSEU	27-51417 FLAP LVR SENSOR	27-51 TASK 811
FSEU	27-51427 FLAP LEVER	27-51 TASK 819
FSEU	27-51429 BYP VLV SW DISAG	27-51 TASK 812
FSEU	27-52259 TE FLAP SNSR L	27-51 TASK 813
FSEU	27-52260 TE FLAP SNSR R	27-51 TASK 820
FSEU	27-52261 TE FLAPS SNSR DIS	27-51 TASK 832
FSEU	27-52407 TE FLAP SNSR L C	27-51 TASK 814
FSEU	27-52408 TE FLAP SNSR R C	27-51 TASK 821

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-52418 ECS	27-51 TASK 827
FSEU	27-53250 FLAP 1 SKEW	27-59 TASK 801
FSEU	27-53251 FLAP 2 SKEW	27-59 TASK 802
FSEU	27-53252 FLAP 3 SKEW	27-59 TASK 803
FSEU	27-53253 FLAP 4 SKEW	27-59 TASK 804
FSEU	27-53254 FLAP 5 SKEW	27-59 TASK 805
FSEU	27-53255 FLAP 6 SKEW	27-59 TASK 806
FSEU	27-53256 FLAP 7 SKEW	27-59 TASK 807
FSEU	27-53257 FLAP 8 SKEW	27-59 TASK 808
FSEU	27-53258 FLAP SKEW	27-59 TASK 809
FSEU	27-53279 L 28VAC EXC INV	27-51 TASK 822
FSEU	27-53280 R 28VAC EXC INV	27-51 TASK 823
FSEU	27-53409 FLAP 1 SKEW CON	27-59 TASK 810
FSEU	27-53410 FLAP 2 SKEW CON	27-59 TASK 811
FSEU	27-53411 FLAP 3 SKEW CON	27-59 TASK 812
FSEU	27-53412 FLAP 4 SKEW CON	27-59 TASK 813
FSEU	27-53413 FLAP 5 SKEW CON	27-59 TASK 814
FSEU	27-53414 FLAP 6 SKEW CON	27-59 TASK 815
FSEU	27-53415 FLAP 7 SKEW CON	27-59 TASK 816
FSEU	27-53416 FLAP 8 SKEW CON	27-59 TASK 817
FSEU	27-53428 TE BYP VALVE	27-51 TASK 824
FSEU	27-54402 NO A/S DATA	27-51 TASK 825
FSEU	27-54403 A/S DATA INVALID	27-51 TASK 846
FSEU	27-54419 RUDDER LIMITER	27-51 TASK 828
FSEU	27-54423 FLR OUTPUT	27-51 TASK 829
FSEU	27-58335 FLAP LD RLF LT	27-51 TASK 833
FSEU	27-58400 TE FLAP INDICATN	27-51 TASK 826

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-81200 SL1 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81201 SL1 PROX INBOARD	27-88 TASK 804
FSEU	27-81202 SL2 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81203 SL2 PROX INBOARD	27-88 TASK 804
FSEU	27-81204 SL3 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81205 SL3 PROX INBOARD	27-88 TASK 804
FSEU	27-81206 SL4 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81207 SL4 PROX INBOARD	27-88 TASK 804
FSEU	27-81208 SL5 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81209 SL5 PROX INBOARD	27-88 TASK 804
FSEU	27-81210 SL6 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81211 SL6 PROX INBOARD	27-88 TASK 804
FSEU	27-81212 SL7 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81213 SL7 PROX INBOARD	27-88 TASK 804
FSEU	27-81214 SL8 PROX OUTBOARD	27-88 TASK 803
FSEU	27-81215 SL8 PROX INBOARD	27-88 TASK 804
FSEU	27-81216 F1 PROX RETRACT	27-88 TASK 805
FSEU	27-81217 F1 PROX EXTEND	27-88 TASK 806
FSEU	27-81218 F2 PROX RETRACT	27-88 TASK 805
FSEU	27-81219 F2 PROX EXTEND	27-88 TASK 806
FSEU	27-81220 F3 PROX RETRACT	27-88 TASK 805
FSEU	27-81221 F3 PROX EXTEND	27-88 TASK 806
FSEU	27-81222 F4 PROX RETRACT	27-88 TASK 805
FSEU	27-81223 F4 PROX EXTEND	27-88 TASK 806
FSEU	27-81224 MULTIPLE PROX	27-88 TASK 807
FSEU	27-81225 SL2 PROX RETRACT	27-88 TASK 808
FSEU	27-81226 SL3 PROX RETRACT	27-88 TASK 808

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-81227 SL4 PROX RETRACT	27-88 TASK 808
FSEU	27-81228 SL5 PROX RETRACT	27-88 TASK 808
FSEU	27-81229 SL6 PROX RETRACT	27-88 TASK 808
FSEU	27-81230 SL7 PROX RETRACT	27-88 TASK 808
FSEU	27-81231 SL2 PROX RET FAIL	27-88 TASK 809
FSEU	27-81232 SL3 PROX RET FAIL	27-88 TASK 809
FSEU	27-81233 SL4 PROX RET FAIL	27-88 TASK 809
FSEU	27-81234 SL5 PROX RET FAIL	27-88 TASK 809
FSEU	27-81235 SL6 PROX RET FAIL	27-88 TASK 809
FSEU	27-81236 SL7 PROX RET FAIL	27-88 TASK 809
FSEU	27-81237 LE RETR SENSORS	27-88 TASK 815
FSEU	27-81238 L RETR SENSORS	27-88 TASK 815
FSEU	27-81239 R RETR SENSORS	27-88 TASK 815
FSEU	27-81277 PROGRAM PINS	27-51 TASK 834
FSEU	27-81278 INV APL TYPE	27-51 TASK 834
FSEU	27-81281 AUTOSLAT INPUT 1	27-83 TASK 806
FSEU	27-81282 AUTOSLAT INPUT 2	27-83 TASK 806
FSEU	27-81283 ASYM ENABLED	27-88 TASK 819
FSEU	27-81301 SLAT 1 EXTEND	27-88 TASK 810
FSEU	27-81302 SLAT 1 FULL EXT	27-88 TASK 811
FSEU	27-81303 SLAT 1 IN TRANS	27-88 TASK 812
FSEU	27-81304 SLAT 2 EXTEND	27-88 TASK 810
FSEU	27-81305 SLAT 2 FULL EXT	27-88 TASK 811
FSEU	27-81306 SLAT 2 IN TRANS	27-88 TASK 812
FSEU	27-81307 SLAT 3 EXTEND	27-88 TASK 810
FSEU	27-81308 SLAT 3 FULL EXT	27-88 TASK 811
FSEU	27-81309 SLAT 3 IN TRANS	27-88 TASK 812

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-81310 SLAT 4 EXTEND	27-88 TASK 810
FSEU	27-81311 SLAT 4 FULL EXT	27-88 TASK 811
FSEU	27-81312 SLAT 4 IN TRANS	27-88 TASK 812
FSEU	27-81313 SLAT 5 EXTEND	27-88 TASK 810
FSEU	27-81314 SLAT 5 FULL EXT	27-88 TASK 811
FSEU	27-81315 SLAT 5 IN TRANS	27-88 TASK 812
FSEU	27-81316 SLAT 6 EXTEND	27-88 TASK 810
FSEU	27-81317 SLAT 6 FULL EXT	27-88 TASK 811
FSEU	27-81318 SLAT 6 IN TRANS	27-88 TASK 812
FSEU	27-81319 SLAT 7 EXTEND	27-88 TASK 810
FSEU	27-81320 SLAT 7 FULL EXT	27-88 TASK 811
FSEU	27-81321 SLAT 7 IN TRANS	27-88 TASK 812
FSEU	27-81322 SLAT 8 EXTEND	27-88 TASK 810
FSEU	27-81323 SLAT 8 FULL EXT	27-88 TASK 811
FSEU	27-81324 SLAT 8 IN TRANS	27-88 TASK 812
FSEU	27-81325 FLAP 1 EXTEND	27-88 TASK 813
FSEU	27-81326 FLAP 1 IN TRANS	27-88 TASK 814
FSEU	27-81327 FLAP 2 EXTEND	27-88 TASK 813
FSEU	27-81328 FLAP 2 IN TRANS	27-88 TASK 814
FSEU	27-81329 FLAP 3 EXTEND	27-88 TASK 813
FSEU	27-81330 FLAP 3 IN TRANS	27-88 TASK 814
FSEU	27-81331 FLAP 4 EXTEND	27-88 TASK 813
FSEU	27-81332 FLAP 4 IN TRANS	27-88 TASK 814
FSEU	27-81333 MASTER EXTEND	27-88 TASK 817
FSEU	27-81334 MASTER IN TRANS	27-88 TASK 818
FSEU	27-81352 L LE SL EXT UCM	27-81 TASK 806
FSEU	27-81353 R LE SL EXT UCM	27-81 TASK 806

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LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
FSEU	27-81354 LE SLAT EXT UCM	27-81 TASK 806
FSEU	27-81355 L LE SL FE UCM	27-81 TASK 806
FSEU	27-81356 R LE SL FE UCM	27-81 TASK 806
FSEU	27-81357 LE SLAT FE UCM	27-81 TASK 806
FSEU	27-81358 L LE FL EXT UCM	27-81 TASK 806
FSEU	27-81359 R LE FL EXT UCM	27-81 TASK 806
FSEU	27-81360 LE FLAP EXT UCM	27-81 TASK 806
FSEU	27-81420 LE INTRANS	27-81 TASK 809
FSEU	27-81421 TAKEOFF WARNING	27-81 TASK 811
FSEU	27-81424 LE UCM SOV	27-81 TASK 807
FSEU	27-81425 LE CRZ DEPRESS	27-81 TASK 808
FSEU	27-81426 LE UCM	27-81 TASK 810
FSEU	27-83350 AUTOSLAT	27-83 TASK 806

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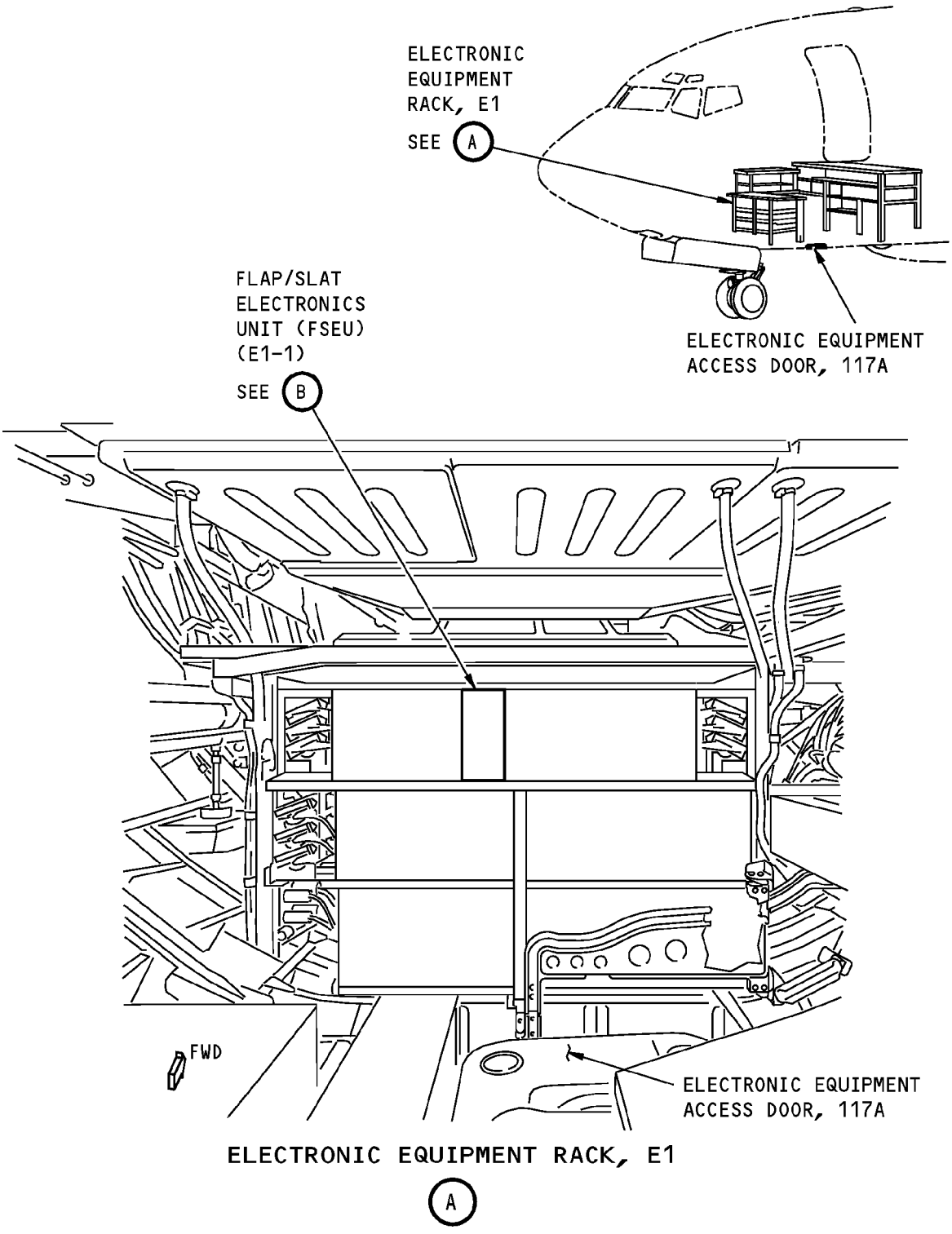

Flap/Slat Electronics Unit
Figure 201 (Sheet 1 of 2)/ 27-51-00-990-802

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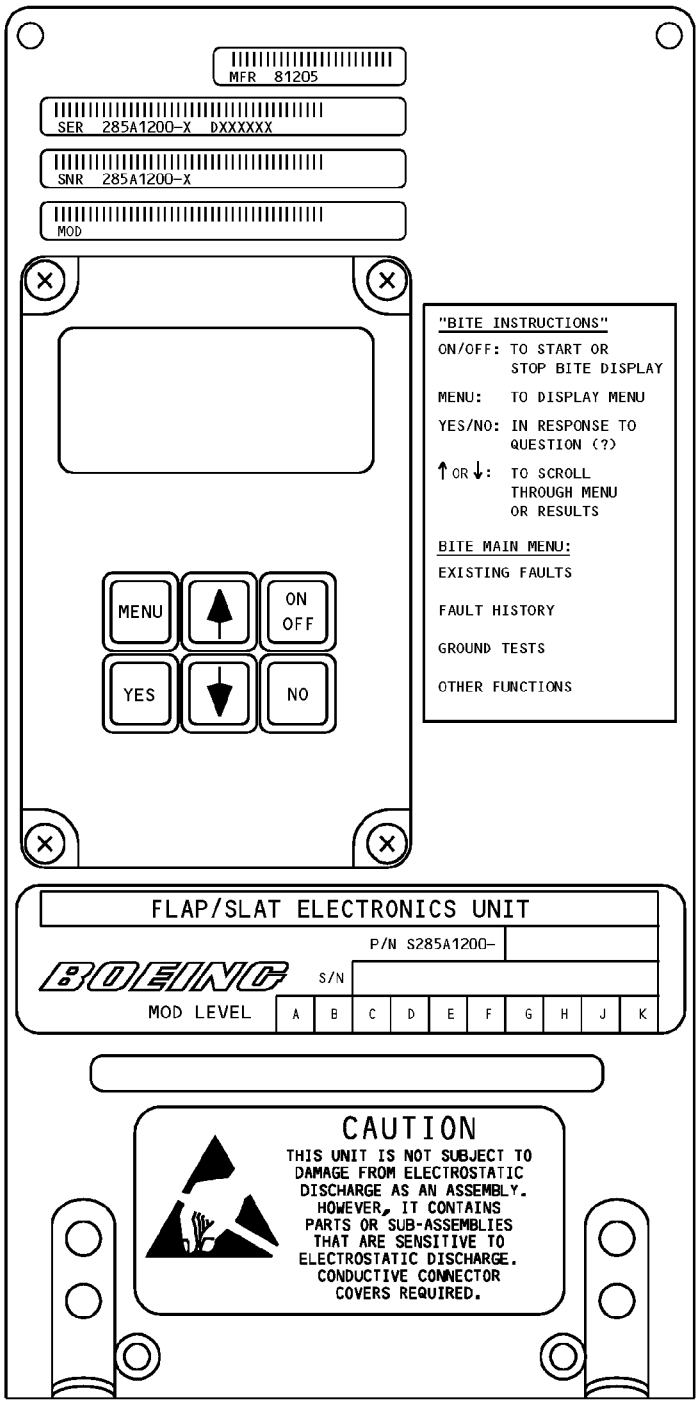

FLAP/SLAT ELECTRONICS UNIT (FSEU)

B

Flap/Slat Electronics Unit
Figure 201 (Sheet 2 of 2)/ 27-51-00-990-802

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802. Trailing Edge Asymmetry Skew Indication Ground Test

A. General

(1) You do the Trailing Edge Asymmetry Skew Indication Ground Test at the front of panel of the FSEU. The FSEU is on the E1-1 shelf in the electronic equipment bay. These are the menu items in the FSEU BITE that you will use in this task:

(a) GROUND TESTS

(2) For the Trailing Edge Asymmetry Skew Indication Ground Test, the FSEU does internal tests, discrete output checks and sensor interface checks. The faults that are found during the Trailing Edge Asymmetry Skew Indication Ground Test are active. A maintenance message identifies a specific fault which is found by the FSEU. The maintenance messages have English text and a seven digit number.

B. Procedure

(1) Do the Trailing Edge Asymmetry Skew Indication Ground Test for the FSEU (Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802):

(a) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?

(b) Push the down arrow until GROUND TESTS? shows on the display.

(c) Push the YES button to select GROUND TESTS? on the FSEU.

(d) Push the YES button to select TE ASYM-SKEW-IND? from the GROUND TESTS? menu on the FSEU.

(e) Follow the instructions on the FSEU display to complete the test.

NOTE: It will be necessary to watch the flap position indicator during this test.

(f) If there are faults, then the display will show the first fault detected. Do these steps:

1) Write the maintenance message.

2) Push the down arrow button.

NOTE: The display will show FAULT DETAILS?

3) Push the YES button.

4) Write the maintenance message number.

5) Push the down arrow button.

6) Write the fault type data. These are the possible fault types:

a) LATCHED

b) HARD

c) INTERMTNT ACTIVE

d) INTERMTNT INACTIVE

7) Refer to the table at the beginning of this chapter to find the fault isolation task for applicable maintenance message.

——————— END OF TASK ———————

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803. Trailing Edge Flap Load Relief Ground Test

A. General

(1) You do the Trailing Edge Flap Load Relief Ground Test at the front of panel of the FSEU. It is also necessary to operate the flap control lever and watch the flap position indicator. The FSEU is on the E1-1 shelf in the electronic equipment bay. These are the menu items in the FSEU BITE that you will use in this task:

(a) GROUND TESTS

(2) For Trailing Edge Flap Load Relief Ground Test, the FSEU does internal tests, discrete output checks, sensor interface checks, and simulates a load relief condition. The faults that are found during the Trailing Edge Flap Load Relief Ground Test are active. A maintenance message identifies a specific fault which is found by the FSEU. The maintenance messages have English text and a seven digit number.

(3) The FSEU will keep a record of faults in FAULT HISTORY. The faults are grouped by flight leg. Flight leg 0 (LEG 0) is the most recent flight and includes faults that occurred on the ground after the most recent flight.

B. Procedure

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(2) Do the Trailing Edge Flap Load Relief Ground Test for the FSEU (Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803):

(a) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?

(b) Push the down arrow until GROUND TESTS? shows on the display.

(c) Push the YES button to select GROUND TESTS? on the FSEU.

(d) Push the down arrow until TE FLAP LD REL? shows on the display.

(e) Push the YES button to select TE FLAP LD REL? from the menu.

(f) Follow the instructions on the FSEU display to complete the test.

NOTE: It will be necessary to operate the trailing edge flaps during this test when the FSEU requests that they be in a different position.

(g) If faults are detected in the Load Relief Test, then the display will show the first fault detected. Do these steps:

1) Write the maintenance message.

2) Push the down arrow button.

NOTE: The display will show FAULT DETAILS?

3) Push the YES button.

4) Write the maintenance message number.

5) Push the down arrow button.

6) Write the fault type data. These are the possible fault types:

a) LATCHED

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b) HARD

c) INTERMTNT ACTIVE

d) INTERMTNT INACTIVE

7) Refer to the table at the beginning of this chapter to find the fault isolation task for applicable maintenance message.

——————— END OF TASK ———————

804. FSEU Display Ground Test

A. General

(1) You do the FSEU Display Ground Test at the front of panel of the FSEU. The FSEU is on the E1-1 shelf in the electronic equipment bay.

(2) For the FSEU Display Ground Test, the FSEU does a test of the pixels in the FSEU BITE display. This test should be run to check if one or more pixels are not operational. You must visually verify that all of the pixels illuminate.

B. Procedure

(1) Do the FSEU Display Ground Test for the FSEU (FSEU Display Ground Test, 27-51 TASK 804):

(a) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?

(b) Push the down arrow until GROUND TESTS? shows on the display.

(c) Push the YES button to select GROUND TESTS? on the FSEU.

(d) Push the down arrow until DISPLAY TEST? shows on the display.

(e) Push the YES button to select DISPLAY TEST? on the FSEU.

(f) Follow the instructions on the FSEU display to complete the test.

NOTE: It will be necessary to watch the FSEU display during this test.

(g) If one or more pixels in the display do not come on during the test, then the FSEU did not operate correctly.

NOTE: The FSEU will turn on all of the pixels on the BITE display in four groups.

1) Replace the FSEU. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

——————— END OF TASK ———————

805. FSEU RAM Fault - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51101 FSEU FAILED

(2) The RAM self test failed during an FSEU Power Up test.

B. Possible Causes

(1) FSEU, M1746

C. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Replace the FSEU, M1746. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

806. FSEU Watchdog Timer Fault - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51102 FSEU FAILED

(2) The Watchdog Timer self test failed during an FSEU Power Up test.

B. Possible Causes

(1) FSEU, M1746

C. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Replace the FSEU, M1746. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

807. FSEU Background Memory Check Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51103 FSEU FAILED

(2) The self test of the FSEU memory failed during a self test or during an existing faults test.

B. Possible Causes

(1) FSEU, M1746

C. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Replace the FSEU, M1746. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

808. Flap Bypass Valve In Bypass Position Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51401 IN BYP REA UNKN

(2) During a ground test the trailing edge flap bypass valve was in the bypass position with no command from the FSEU.

B. Possible Causes

(1) Trailing edge flap bypass valve, V52

(2) Trailing edge flap bypass valve motor

(3) FSEU, M1746

(4) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

D. Related Data

(1) (SSM 27-53-11)

(2) (WDM 27-53-11)

E. Initial Evaluation

(1) Make sure the lock, SPL-1676 is not installed on the trailing edge flap bypass valve.

(2) Make sure the ALTERNATE FLAPS ARM switch is in OFF position.

(3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(4) If the maintenance message does not show, then there was an intermittent fault.

(5) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the trailing edge flap bypass valve, V52:

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(a) Look at the manual override lever on the trailing edge flap bypass valve.

NOTE: The trailing edge flap bypass valve is in the aft side of the right main wheel well.

(b) If the manual override lever is in POSITION 2, then do these steps:

NOTE: POSITION 2 is the bypass position.

1) Replace the trailing edge flap bypass valve, V52. These are the tasks:
   - Trailing Edge Flap Bypass Valve Assembly Removal, AMM TASK 27-51-02-000-801
   - Trailing Edge Flap Bypass Valve Assembly Installation, AMM TASK 27-51-02-400-801
2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
3) If the maintenance message does not show, then you corrected the fault.

(c) If the manual override lever is in POSITION 1, then continue.

(2) Do this check of the trailing edge flap bypass valve:

(a) Disconnect the connector D1014 from the trailing edge flap bypass valve.

NOTE: The trailing edge flap bypass valve is in the aft side of the right main wheel well.

(b) Do a continuity check between pin 1 and pin 3 at the connector D1014 on the motor for the trailing edge bypass valve.

(c) If there is continuity between pin 1 and pin 3, then do these steps:

1) Replace the trailing edge flap bypass valve motor. These are the tasks:
   - Trailing Edge Flap Bypass Valve Motor Removal, AMM TASK 27-51-02-000-803
   - Trailing Edge Flap Bypass Valve Motor Installation, AMM TASK 27-51-02-400-803
2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
3) If the maintenance message does not show, then you corrected the fault.

(d) If there is no continuity between pin 1 and pin 3, then continue.

(3) Do this check of the wiring between the FSEU and the trailing edge flap bypass valve:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D1014 at the trailing edge flap bypass valve, V52:

D728B		D1014
pin K1	- - - - - - - - - - - - - - - - - -	pin 3

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.
2) Re-connect connector D1014 to the trailing edge flap bypass valve, V52.
3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
5) If the maintenance message does not show, then you corrected the fault.

(d) If you do not find a problem with the wiring, then continue:

1) Re-connect the connector D1014 to the trailing edge flap bypass valve, V52.

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(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

809. Flap Load Relief From 40-Units Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51404 FLP LOAD RLF 40

(2) During the load relief ground test the trailing edge flaps did not retract from the 40-unit position.

NOTE: Because of the sequence of the test, the flaps did extend to the 40-unit position during this test.

B. Possible Causes

(1) Flap load limiter solenoid valve, V94

HAP 001-013, 015-026, 028-036, 101-999

(2) Flap lever 30-unit position switch, S1039

HAP 037-054

(3) Flap lever 10-unit position switch, S1039

HAP ALL

(4) FSEU, M1746

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

D. Related Data

(1) (SSM 27-54-11)

(2) (WDM 27-54-11)

E. Initial Evaluation

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

(2) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

NOTE: Use a hydraulic service cart, or use the engine driven pump to supply hydraulic power.

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(3) If the maintenance message does not show, then there was an intermittent fault.

(4) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Replace the flap load limiter solenoid valve, V94. These are the tasks:
- Flap Load Limiter Solenoid Valve Removal, AMM TASK 27-51-65-000-802
- Flap Load Limiter Solenoid Valve Installation, AMM TASK 27-51-65-400-802

(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(c) If the maintenance message shows, then continue.

(2) Do this check of the electrical power to the flap load limiter solenoid valve, V94:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

(b) Disconnect the connector D1582 from the flap load limiter solenoid valve, V94.

NOTE: The flap load limiter solenoid valve is in the aft side of the right main wheel well on the flap control valve.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

(d) Make sure the flap control lever is in the 40-unit position.

(e) Do a check for 28 VDC between pin 1 on connector D1582 and structure ground.

(f) If there is not 28 VDC between pin 1 on connector D1582 and structure ground, then do this check of the wiring:

HAP 001-013, 015-026, 028-036, 101-999

1) Disconnect the electrical connector D5150P for the flap lever 30-unit position switch.

NOTE: Access to this electrical connector is from below the right side of the control stand.

HAP 037-054

2) Disconnect the electrical connector D5150P for the flap lever 10-unit position switch.

NOTE: Access to this electrical connector is from below the right side of the control stand.

HAP 001-013, 015-026, 028-036, 101-999

3) Do a wiring check between these pins of connector D1582 at the flap load limiter solenoid valve, V94 and connector D5150P for the flap lever 30-unit position switch, S1039:

D1582		**D5150P**
pin 1	- - - - - - - - - - - - - - - - - -	pin 11

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4) Do a wiring check between these pins of connector D1582 at the flap load limiter solenoid valve, V94 and connector D5150P for the flap lever 10-unit position switch, S1039:

D1582		D5150P
pin 1	- - - - - - - - - - - - - - - - - -	pin 11

HAP ALL

5) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect connector D1582 to the load limiter solenoid valve, V94.

HAP 001-013, 015-026, 028-036, 101-999

   c) Re-connect connector D5180P for the flap lever 30-unit position switch, S1039.

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   d) Re-connect connector D5180P for the flap lever 10-unit position switch, S1039.

HAP ALL

   e) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.
   f) If the maintenance message does not show, then you corrected the fault.

6) If you do not find a problem with the wiring, then do these steps:

HAP 001-013, 015-026, 028-036, 101-999

   a) Replace the flap lever 30-unit position switch, S1039. These are the tasks:
      - Flap Lever Position Switch Removal, AMM TASK 27-51-08-000-801
      - Flap Lever Position Switch Installation, AMM TASK 27-51-08-400-801

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   b) Replace the flap lever 10-unit position switch, S1039. These are the tasks:
      - Flap Lever Position Switch Removal, AMM TASK 27-51-08-000-801
      - Flap Lever Position Switch Installation, AMM TASK 27-51-08-400-801

HAP ALL

   c) Re-connect connector D1582 to the load limiter solenoid valve, V94.
   d) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.
   e) If the maintenance message does not show, then you corrected the fault.

(g) If there is 28 VDC between pin 1 on connector D1582 and structure ground, then continue.

(3) Do this check of the wiring between the FSEU and the flap load relief solenoid valve:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D1582 at the flap load relief solenoid valve, V94:

D728A		D1582
pin A12	- - - - - - - - - - - - - - - - -	pin 2

(c) If you find a problem with the wiring, then do these steps:

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1) Repair the wiring.
2) Re-connect connector D1582 to the flap load relief solenoid valve, V94.
3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
4) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.
5) If the maintenance message does not show, then you corrected the fault.

(d) If you do not find a problem with the wiring, then continue:
1) Re-connect the connector D1582 to the flap load limiter solenoid valve, V52.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.
(b) If the maintenance message does not show, then you corrected the fault.

——————— END OF TASK ———————

810. Flap Load Relief From 30-Units Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:
(a) 27-51405 FLP LOAD RLF 30

(2) During the load relief ground test the trailing edge flaps did not retract from the 30-unit position.

NOTE: Because of the sequence of the test, the flaps did retract from the 40-unit position to the 30-unit position during this test.

B. Possible Causes

(1) Flap lever 30-unit position switch, S1039

(2) Flap load limiter solenoid valve, V94

(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

D. Related Data

(1) (SSM 27-54-11)

(2) (WDM 27-54-11)

E. Initial Evaluation

(1) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

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F. Fault Isolation Procedure

(1) Adjust the flap lever 30-unit position switch, S1039. To adjust it, do this task: Flap Lever Position Switch Adjustment, AMM TASK 27-51-08-820-801.

(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(c) If the maintenance message shows, then continue.

(2) Replace the flap load limiter solenoid valve, V94. These are the tasks:

- Flap Load Limiter Solenoid Valve Removal, AMM TASK 27-51-65-000-802
- Flap Load Limiter Solenoid Valve Installation, AMM TASK 27-51-65-400-802

(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(c) If the maintenance message shows, then continue.

(3) Replace the FSEU. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

END OF TASK

HAP 037-054

850. Flap Load Relief From 10-Units Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51405 FLP LOAD RLF 10

(2) During the load relief ground test the trailing edge flaps did not retract from the 10-unit position.

NOTE: Because of the sequence of the test, the flaps did retract from the 40-unit position to the 10-unit position during this test.

B. Possible Causes

(1) Flap lever 10-unit position switch, S1039

(2) Flap load limiter solenoid valve, V94

(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

D. Related Data

(1) SSM 27-54-11

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HAP 037-054 (Continued)

(2) WDM 27-54-11

E. Initial Evaluation

(1) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Adjust the flap lever 10-unit position switch, S1039. To adjust it, do this task: Flap Lever Position Switch Adjustment, AMM TASK 27-51-08-820-801.

(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(c) If the maintenance message shows, then continue.

(2) Replace the flap load limiter solenoid valve, V94. These are the tasks:

- Flap Load Limiter Solenoid Valve Removal, AMM TASK 27-51-65-000-802
- Flap Load Limiter Solenoid Valve Installation, AMM TASK 27-51-65-400-802

(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(c) If the maintenance message shows, then continue.

(3) Replace the FSEU. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

HAP ALL

——————— END OF TASK ———————

811. Flap Control Lever Position Sensor Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51417 FLAP LVR SENSOR

(2) The FSEU did not receive a valid signal from the flap control lever position sensor, T538 during a ground test.

B. Possible Causes

(1) Flap control lever position sensor, T538

(2) FSEU, M1746

(3) Wiring problem

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-51-11)

(2) (WDM 27-51-11)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenace message 27-53279 L 28VAC EXC INV shows, then do the Fault Isolation Procedure for that fault, do this task: Left Flap Excitation Voltage Problem - Fault Isolation, 27-51 TASK 822.

(3) If the maintenance message 27-51417 FLAP LVR SENSOR does not show, then there was an intermittent fault.

(4) If the maintenance message 27-51417 FLAP LVR SENSOR shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Replace the flap control lever position sensor, T538. These are the tasks:
- Flap Control Lever Position Sensor Removal, AMM TASK 27-51-06-000-802
- Flap Control Lever Position Sensor Installation, AMM TASK 27-51-06-400-802

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the flap control lever position sensor, T538:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect connector D10537 from the flap control lever position sensor.

(c) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D10537 at the flap control lever position sensor, T538:

D728B		D10537
pin A10	- - - - - - - - - - - - - - - - -	pin 3
pin A11	- - - - - - - - - - - - - - - - -	pin 2
pin A12	- - - - - - - - - - - - - - - - -	pin 4

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D10537 to the flap control lever position sensor, T538.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D10537 to the flap control lever position sensor, T538.

(3) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

HAP 037-054

851. Flap Load Relief From 5-Units Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51406 FLP LOAD RELIEF

(2) During the load relief ground test the trailing edge flaps retracted from the 5-unit position.

NOTE: With the trailing edge flaps and the flap control lever in the 5-unit position, the trailing edge flaps should not automatically retract.

B. Possible Causes

(1) Flap lever 10-unit position switch, S1039

(2) Wiring Problems

C. Related Data

(1) SSM 27-54-11

(2) WDM 27-54-11

D. Initial Evaluation

(1) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this test of the flap lever 10-unit position switch, S1039:

(a) Disconnect the electrical connector D5150P from the flap lever 10-unit position switch, S1039.

1) The access to the electrical connector is from below the control stand. To get access, do the following:

a) Open this access panel:

Number	Name/Location
112A	Forward Access Door

(b) Move the flap control lever to the UP position.

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HAP 037-054 (Continued)

(c) Do a continuity check between pins 9 and 11 on connector D5150P which is installed on the bottom of the control stand.

1) If there is continuity between pins 9 and 11, then replace the flap lever 10-unit position switch, S1039. These are the tasks:
- Flap Lever Position Switch Removal, AMM TASK 27-51-08-000-801
- Flap Lever Position Switch Installation, AMM TASK 27-51-08-400-801

a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

c) If the maintenance message shows, then continue.

2) If there is not continuity between pins 9 and 11, then continue.

(d) Move the flap control lever to the 5-unit position.

(e) Do a continuity check between pins 9 and 11 on connector D5150P with the flap control lever in the 5-unit position.

1) If there is continuity between pins 9 and 11, then adjust the flap lever 10-unit position switch, S1039. To adjust it, do this task: Flap Lever Position Switch Adjustment, AMM TASK 27-51-08-820-801.

a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

c) If the maintenance message shows, then continue.

(f) If there is not continuity between pins 9 and 11, then continue.

(2) Do this check of the wiring between the flap lever 10-unit position switch, S1039 and the flap load relief solenoid, V94:

(a) Disconnect connector D1582 from the flap load relief solenoid, V94.

NOTE: The flap load relief solenoid is installed on the trailing edge flap control valve in the main wheel well.

(b) Do a wiring check between these pins of connector D5150P at the flap lever 10-unit position switch, S1039 and connector D1582 at the flap load relief solenoid, V94:

D5150P		D1582
pin 11	- - - - - - - - - - - - - - - - - - -	pin 1

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D5150P to the flap lever 10-unit position switch, S1039.

3) Re-connect connector D1582 to the flap load relief solenoid, V94.

4) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(3) Close this access panel:

Number	Name/Location
112A	Forward Access Door

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HAP 037-054 (Continued)

HAP ALL

——————— END OF TASK ———————

812. Flap Bypass Valve Failed to Move to Bypass Position - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51429 BYP VLV SW DISAG

(2) During a ground test the trailing edge flap bypass valve did not move to the bypass position with a command from the FSEU.

B. Possible Causes

(1) Trailing edge flap bypass valve motor

(2) Trailing edge flap bypass valve, V52

(3) FSEU, M1746

(4) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

D. Related Data

(1) (SSM 27-53-11)

(2) (WDM 27-53-11)

E. Initial Evaluation

(1) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then look at the manual override lever on the trailing edge flap bypass valve.

NOTE: The trailing edge flap bypass valve is in the aft side of the right main wheel well.

(a) If the manual override lever is in POSITION 1, then do the Fault Isolation Procedure - Manual Override Lever at POSITION 1 below.

NOTE: POSITION 1 is the normal position.

(b) If the manual override lever is in POSITION 2, then do the Fault Isolation Procedure - Manual Override Lever at POSITION 2 below.

NOTE: POSITION 2 is the bypass position.

F. Fault Isolation Procedure - Manual Override Lever at POSITION 1

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

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(1) Do this test of the trailing edge flap bypass valve, V52 operation with alternate control:

(a) Push the ALTERNATE FLAPS ARM switch on the P5 panel to arm the alternate control system.

NOTE: The trailing edge flap bypass valve should move to POSITION 2.

(b) If the manual override lever does not move to POSITION 2, then do this check of electrical power to the trailing edge flap bypass valve:

1) Disconnect the electrical connector D1014 from the trailing edge flap bypass valve, V52.

2) Do a check for 28 VDC between pin 1 of connector D1014 and structure ground.

3) If there is not 28 VDC between pin 1 of connector D1014 and structure ground, then do these steps

a) Repair the wiring between pin 1 of connector D1014 and the ALTERNATE FLAPS ARM switch, S1 on the P5 panel.

b) Reconnect the electrical connector D1014 to the trailing edge flap bypass valve, V52.

c) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

4) If there is 28 VDC between pin 1 of connector D1014 and structure ground, then continue.

(c) If the manual override lever does not move to POSITION 2, then do this test of the trailing edge flap bypass valve and the valve motor:

1) Disconnect the electrical connector D1014 from the trailing edge flap bypass valve, V52.

2) Try to manually move the manual override lever to POSITION 2.

3) If you cannot move the manual override lever, then do these steps:

a) Replace the trailing edge flap bypass valve, V52. These are the tasks:

- Trailing Edge Flap Bypass Valve Assembly Removal, AMM TASK 27-51-02-000-801
- Trailing Edge Flap Bypass Valve Assembly Installation, AMM TASK 27-51-02-400-801

b) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

4) If the you can move the manual override lever to POSITION 2, then do these steps:

a) Replace the trailing edge flap bypass valve motor. These are the tasks:

- Trailing Edge Flap Bypass Valve Motor Removal, AMM TASK 27-51-02-000-803
- Trailing Edge Flap Bypass Valve Motor Installation, AMM TASK 27-51-02-400-803

b) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

(d) If the manual override lever moves to POSITION 2, or if the maintenance message shows, then continue.

1) Push the ALTERNATE FLAPS ARM switch to disarm the alternate control system.

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(2) Do this check of the wiring between the FSEU and the trailing edge flap bypass valve, V52:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect connector D1014 from the trailing edge flap bypass valve, V52.

(c) Do a wiring check between these pins of connector D728C at the E1-1 shelf and connector D1014 at the trailing edge flap bypass valve, V52:

D728C		D1014
pin 3	- - - - - - - - - - - - - - - - - -	pin 1

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1014 to the trailing edge flap bypass valve, V52.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

(e) If you do not find a problem with the wiring, then continue:

1) Reconnect the connector D1014 to the trailing edge flap bypass valve, V52.

(3) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

G. Fault Isolation Procedure - Manual Override Lever at POSITION 2

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

(1) Do this check of the trailing edge flap bypass valve motor:

(a) Disconnect the connector D1014 from the trailing edge flap bypass valve, V52.

NOTE: The trailing edge flap bypass valve is in the aft side of the right main wheel well.

(b) Do a continuity check between pin 1 and pin 3 at the electrical connector on the trailing edge bypass valve motor.

(c) If there is not continuity between pin 1 and pin 3, then do these steps:

1) Replace the trailing edge flap bypass valve motor. These are the tasks:
- Trailing Edge Flap Bypass Valve Motor Removal, AMM TASK 27-51-02-000-803
- Trailing Edge Flap Bypass Valve Motor Installation, AMM TASK 27-51-02-400-803

2) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

(d) If there is continuity between pin 1 and pin 3, then continue.

(2) Do this check of the wiring between the FSEU and the trailing edge flap bypass valve:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D1014 at the trailing edge flap bypass valve, V52:

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D728B		D1014
pin K1	- - - - - - - - - - - - - - - - - -	pin 3

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1014 to the trailing edge flap bypass valve, V52.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

(d) If you did not find a problem with the wiring, then continue:

1) Re-connect the connector D1014 to the trailing edge flap bypass valve, V52.

(3) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

——————— END OF TASK ———————

813. Left Flap Position Transmitter Disagree Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-52259 TE FLAP SNSR L

(2) The signal to the FSEU from the left flap position transmitter, T427 does not agree with the signals from the right flap position transmitter, T428 and the No. 1 flap skew sensor, T525.

B. Possible Causes

(1) Left flap position transmitter, T427

(2) FSEU, M1746

(3) Wiring Problem

(4) Flap Position Indicator

(5) Wiring between Flap Position Indicator and FSEU

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-52-11)

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(2) (WDM 27-52-11)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, perform a visual check of the Trailing Edge Flap System,AMM TASK 27-51-00-210-801

(4) If the visual check passes, do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the flap position transmitter.

(a) Replace the left flap position transmitter, AMM TASK 27-58-01-000-801

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

(c) If this does not correct the problem, then do Fault Isolation Procedure I.

G. Fault Isolation Procedure I

(1) Do this check of the flap position indicator.

(a) Press the ON/OFF switch on the FSEU's BITE panel.

1) Make sure the display reads "EXISTING FAULTS?".

2) Press the ON/OFF switch again to turn off the display.

(b) Disconnect connector D686 from the Flap Position Indicator N54 on the P2 center instrument panel.

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS, AND THE LEADING EDGE FLAPS AND SLATS. THESE SURFACES WILL MOVE AND CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(c) Do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

1) Move the flap control lever to the 40-unit position.

2) Make sure the flaps move to the 40-unit position.

3) Move the flap control handle to the UP position.

4) Make sure the flaps move to their UP position.

(d) If the flaps extend and retract then the problem is the flap position indicator or its wiring; do Fault Isolation Procedure III.

(e) If the flaps fail to respond to flap-lever commands or stop part way through the system travel, then the problem is not in the flap position indicator, do Fault Isolation Procedure I.

(f) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(g) Re-connect connector D686 to the Flap Position Indicator.

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H. Fault Isolation Procedure II

(1) Do this check of the flap transmitter's signal.

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS, AND THE LEADING EDGE FLAPS AND SLATS. THESE SURFACES WILL MOVE AND CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(a) Do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

(b) Open these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

(c) Wait two seconds, then do the following:

1) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(d) Do these steps to extend and retract the flaps:

1) Move the flap control lever to the 40-unit position.
2) Make sure the flaps move to the 40-unit position.
3) Move the flap control handle to the UP position.
4) Make sure the flaps move to their UP position.

(e) If the left and right flap needles correctly track the flap position, then replace the FSEU.

1) Remove the FSEU, M1746. To remove it, do this task: AMM TASK 27-51-01-000-801.

(f) If the left and right flap needles do not correctly track the flap position, then do Fault Isolation Procedure III.

(g) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

(h) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805

I. Fault Isolation Procedure III

(1) Do this check of the flap position transmitter and the FSEU.

(a) Disconnect connector D275 from the left flap position transmitter, T427.

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1) Do a check for 28 VAC between these pins.

D275		D275
pin 3	- - - - - - - - - - - - - - - - - -	pin 11

2) If there is not 28 VAC between these pins then do this check of the wiring:
   a) Get access to the terminal block TB1105 in the E1-1 shelf.
   b) Do a continuity wiring check between the left flap position transmitter T427 and these terminals on terminal block TB1105:

TB1105		D275
ZA 13	- - - - - - - - - - - - - - - - - -	pin 3
ZB 9	- - - - - - - - - - - - - - - - - -	pin 11

3) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-connect connector D275 to the left flap position transmitter, T427.
   c) Do the Repair Confirmation at the end of this task.

(b) If there is 28 VAC between pin 3 and pin 11 of connector D275, then continue.

(c) Do this check of the wiring between the FSEU and the left flap position transmitter, T427:

(d) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(e) Disconnect connector D275 from the left flap position transmitter, T427.

(f) Do a continuity wiring check between these pins of connector D728B at the E1-1 shelf and connector D275 at the left flap position transmitter, T427:

(g)

D728B		D275
pin K7	- - - - - - - - - - - - - - - - - -	pin 1
pin K8	- - - - - - - - - - - - - - - - - -	pin 2

(h) If you find a problem with the wiring, then do these steps:
   1) Repair the wiring.
   2) Re-connect connector D275 to the left flap position transmitter, T427.
   3) Re-install the FSEU, M1746. To install it, do this task: AMM TASK 27-51-01-400-801.
   4) Do the Repair Confirmation at the end of this task.

(i) If you do not find a problem with the wiring, then check the left flap position transmitter wiring for a short to ground.
   1) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

   2) Remove the FSEU, M1746. To remove it, do this task: AMM TASK 27-51-01-000-801
   3) Make sure that D728B disconnect pins K7 and K8 are not bent.
   4) Do a continuity wiring check between these pins of connector D728B at the E1-1 shelf:

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D728B		D728B
pin K7	- - - - - - - - - - - - - - - - -	pin K8
pin J7	- - - - - - - - - - - - - - - - -	pin J8

5) The resistance between K7 and K8 should be within 10 percent of the resistance between J7 and J8.

6) Re-install the FSEU, M1746. To install it, do this task: AMM TASK 27-51-01-400-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(j) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

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

J. Fault Isolation Procedure IV

(1) Do these checks of the flap position indicator.

(a) Check for continuity between the left flap position transmitter connector D275 and the flap position indicator connector D686:

1) Disconnect connector D275 at the flap position transmitter T427.

2) Disconnect connector D686 at the flap position indicator N54.

D275		D686
pin 1	- - - - - - - - - - - - - - - - -	pin 6
pin 2	- - - - - - - - - - - - - - - - -	pin 5

(b) If you find a problem with the wiring then do these steps:

1) Repair the wiring.

2) Re-connect connector D275.

3) Re-connect connector D686.

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

(c) If you did not find a wiring problem then continue

1) There is either an open circuit in the wiring between the FSEU and the indicator, or an open circuit inside the FSEU (the needle split relay has an open contact). The wiring fault is more probable.

(d) Do a continuity wiring check between these pins on the FSEU.

1) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

2) Check for continuity between the following pins:

M1746 B		M1746 B
pin K7	- - - - - - - - - - - - - - - - -	pin K10
pin K8	- - - - - - - - - - - - - - - - -	pin K11

3) If you find a problem with the FSEU, replace the FSEU.

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

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

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(f) Do a continuity wiring check between the FSEU connector D728B at the E1-1 shelf and the flap position indicator D686:

D728B		D686
pin K10	- - - - - - - - - - - - - - - - -	pin 6
pin K11	- - - - - - - - - - - - - - - - -	pin 5

(g) If you find a problem with the wiring do these steps:

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

(h) If you do not find a problem with the wiring, then check the left flap position indicator wiring for a short to ground.

1) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

2) Remove the FSEU, M1746. To remove it, do this task: AMM TASK 27-51-01-000-801.
3) Make sure that D728B disconnect pins K10 and K11 are not bent.
4) Do a continuity wiring check between these pins of connector D728B at the E1-1 shelf:
5)

D728B		D728B
pin K10	- - - - - - - - - - - - - - - - -	pin K11
pin J10	- - - - - - - - - - - - - - - - -	pin J11

6) The resistance between pins K10 and K11 should be within 10 percent of the resistance between pins J10 and J11.
7) Re-install the FSEU, M1746. To install it, do this task: AMM TASK 27-51-01-400-801.
8) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

9) If you find a problem with the wiring then do these steps:
   a) Repair the wiring.
   b) Do the Repair Confirmation at the end of this task.

(i) If you do not find a problem with the wiring, then continue.

1) Check for 28 VAC at the flap position indicator D686, between pin 8 (hot) and pin 9 (ground).
2) If you find 28VAC, then replace the N54 flap position indicator.

(j) Check the continuity between the flap position indicator N54 and the following terminals in TB1105:

TB1105		D686
ZA 13	- - - - - - - - - - - - - - - - - -	pin 9
ZB 9	- - - - - - - - - - - - - - - - - -	pin 8

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(k) If no wiring problem is found replace the N54 flap position indicator.

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

K. Repair Confirmation

(1) Do this check of the flap position indicator.

(a) Press the ON/OFF switch on the FSEU's BITE panel.

(b) Make sure the display reads "EXISTING FAULTS?".

(c) Press the ON/OFF switch again to turn off the display.

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE TRAILING EDGE FLAP BEFORE YOU DO WORK ON THE FLAP SYSTEM. THE FLAPS MOVE QUICKLY. THEY CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(d) Do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

(e) Operate the flaps.

1) Move the flap control lever to the 40-unit position.

2) Make sure the flaps move to the 40-unit position.

3) Move the flap control handle to the UP position.

4) Make sure the flaps move to their UP position.

(f) Make sure the flaps position indicator followed the flap lever commands and the flap position.

(g) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) Make sure the maintenance message does not show.

(h) If the maintenance message does not show, you have corrected the problem.

(i) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

END OF TASK

814. Left Flap Position Transmitter Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-52407 TE FLAP SNSR L C

(2) The FSEU did not receive a valid signal from the left flap position transmitter, T427 during a ground test.

B. Possible Causes

(1) Left flap position transmitter, T427

(2) FSEU, M1746

(3) Wiring problem

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-52-11)

(2) (WDM 27-52-11)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Replace the left flap position transmitter, T427 on the no. 1 transmission. These are the tasks:
- Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801
- Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the left flap position transmitter:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect connector D275 from the left flap position transmitter, T427.

(c) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D275 at the left flap position transmitter, T427:

D728B		D275
pin K7	- - - - - - - - - - - - - - - - - -	pin 1
pin K8	- - - - - - - - - - - - - - - - - -	pin 2

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D275 to the left flap position transmitter, T427.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D275 to the left flap position transmitter, T427.

(3) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

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(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

815. FSEU Indication Light Output Fault - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51106 FSEU FAILED

(2) The FSEU detected a failure of the output to the indication lights during the Existing Faults test.

B. Possible Causes

(1) FSEU, M1746

C. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Replace the FSEU, M1746. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

816. FSEU Discrete Output Fault - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51107 FSEU FAILED

(2) The FSEU detected a failure of one of the discrete outputs during the Existing Faults test.

B. Possible Causes

(1) FSEU, M1746

C. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Replace the FSEU, M1746. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

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(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

—————— END OF TASK ——————

817. FSEU Internal ARINC 429 Fault - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51108 FSEU FAILED

(2) The FSEU detected a failure of the ARINC 429 data during the Existing Faults test or TE Flap Load Relief Test.

B. Possible Causes

(1) FSEU, M1746

C. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Replace the FSEU, M1746. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

—————— END OF TASK ——————

818. FSEU Analog to Digital Test Fault - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51109 FSEU FAILED

(2) The FSEU detected a failure during an internal analog to digital conversion test.

B. Possible Causes

(1) FSEU, M1746

C. Initial Evaluation

(1) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Replace the FSEU, M1746. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801

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- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

—————— END OF TASK ——————

819. Flap Control Lever Position Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51427 FLAP LEVER

(2) During the TE Flap Load Relief Test, the FSEU did not receive a correct signal from the flap control lever position sensor, T538.

(3) During the TE Flap Load Relief Test the FSEU prompts the mechanic to move the flap control lever and push the YES button. This message indicates that the flap control lever position sensor did not give the correct indication to the FSEU.

B. Possible Causes

(1) Flap control lever position sensor, T538

(2) Flap lever position sensor mechanism

(3) FSEU, M1746

(4) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-51-11)

(2) (WDM 27-51-11)

E. Initial Evaluation

(1) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

NOTE: Make sure the flap control lever is in the correct positions when prompted by the FSEU.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Adjust the flap control lever position sensor, T538. To adjust it, do this task: Flap Control Lever Position Sensor Adjustment, AMM TASK 27-51-06-820-802.

(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(b) If the maintenance message shows, or if you cannot do the adjustment, then continue.

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(2) Replace the flap control lever position sensor, T538. These are the tasks:
- Flap Control Lever Position Sensor Removal, AMM TASK 27-51-06-000-802
- Flap Control Lever Position Sensor Installation, AMM TASK 27-51-06-400-802

(a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU and the flap control lever position sensor, T538:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect connector D10537 from the flap control lever position sensor.

(c) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D10537 at the flap control lever position sensor, T538:

D728B		D10537
pin A10	- - - - - - - - - - - - - - - - - -	pin 3
pin A11	- - - - - - - - - - - - - - - - - -	pin 2
pin A12	- - - - - - - - - - - - - - - - - -	pin 4

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D10537 to the flap control lever position sensor, T538.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D10537 to the flap control lever position sensor, T538.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

820. Right Flap Position Transmitter Disagree Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-52260 TE FLAP SNSR R

(2) The signal to the FSEU from the right flap position transmitter, T428 does not agree with the signals from the left flap position transmitter, T427 and the No. 8 flap skew sensor, T532.

B. Possible Causes

(1) Right flap position transmitter, T428

(2) FSEU, M1746

(3) Wiring problem

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(4) Flap position indicator

(5) Wiring between the indicator and FSEU

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-52-11)

(2) (WDM 27-52-11)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then perform a visual check of the Trailing Edge Flap System, AMM TASK 27-51-00-210-801

(4) If the visual check passes, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the flap position transmitter.

(a) Replace the right flap position transmitter, T428, AMM TASK 27-58-01-000-801

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

(c) If this does not correct the problem, then do Fault Isolation Procedure I.

G. Fault Isolation Procedure I

(1) Do this check of the flap position indicator.

(a) Press the ON/OFF switch on the FSEU's BITE panel.

1) Make sure the display reads "EXISTING FAULTS?".

2) Press the ON/OFF switch again to turn off the display.

(b) Disconnect connector D686 from the Flap Position Indicator N54 on the P2 center instrument panel.

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

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(WARNING PRECEDES)

WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS, AND THE LEADING EDGE FLAPS AND SLATS. THESE SURFACES WILL MOVE AND CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(c) Do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

1) Move the flap control lever to the 40-unit position.

2) Make sure the flaps move to the 40-unit position.

3) Move the flap control handle to the UP position.

4) Make sure the flaps move to their UP position.

(d) If the flaps extend and retract then the problem is the flap position indicator or its wiring; do Fault Isolation Procedure III.

(e) If the flaps fail to respond to flap-lever commands or stop part way through the system travel, then the problem is not in the flap position indicator, do Fault Isolation Procedure I.

(f) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(g) Re-connect connector D686 to the Flap Position Indicator.

H. Fault Isolation Procedure II

(1) Do this check of the flap transmitter's signal.

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS, AND THE LEADING EDGE FLAPS AND SLATS. THESE SURFACES WILL MOVE AND CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(a) Do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

(b) Open these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

(c) Wait two seconds, then open the following circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(d) Do these steps to extend and retract the flaps:

NOTE: Monitor the flap position indicator for correct indication.

1) Move the flap control lever to the 40-unit position.

2) Make sure the flaps move to the 40-unit position.

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3) Move the flap control handle to the UP position.

4) Make sure the flaps move to their UP position.

(e) If the left and right flap needles correctly track the flap position, then replace the FSEU.

1) To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801

(f) If the left and right flap needles do not correctly track the flap position, then do Fault Isolation Procedure II.

(g) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

(h) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805

I. Fault Isolation Procedure III

(1) Do this check of the flap position transmitter and the FSEU.

(a) Disconnect connector D229 from the right flap position transmitter, T428.

1) Do a check for 28 VAC between these pins.

D229		**D229**
pin 3	- - - - - - - - - - - - - - - - - -	pin 11

2) If there is not 28 VAC between these pins then do this check of the wiring:

a) Get access to the terminal block TB1105 in the E1-1 shelf.

b) Do a continuity wiring check between the right flap position transmitter T428 and these terminals on terminal block TB1105:

TB1105		**D229**
ZA 13	- - - - - - - - - - - - - - - - - -	pin 3
ZA 9	- - - - - - - - - - - - - - - - - -	pin 11

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D229 to the right flap position transmitter, T428.

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

(b) If there is 28 VAC between pin 3 and pin 11 of connector D229, then continue.

(c) Do this check of the wiring between the FSEU and the right flap position transmitter, T428:

(d) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(e) Disconnect connector D229 from the right flap position transmitter, T428.

(f) Do a continuity check between these pins of connector D728B at the E1-1 shelf and connector D229 at the right flap position transmitter, T428:

D728B		**D229**
pin J7	- - - - - - - - - - - - - - - - - -	pin 1
pin J8	- - - - - - - - - - - - - - - - - -	pin 2

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(g) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D229 to the right flap position transmitter, T428.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

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

(h) If you do not find a problem with the wiring, then check the right flap position transmitter wiring for a short to ground.

1) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

2) Remove the FSEU, M1746. To remove it, do this task: AMM TASK 27-51-01-000-801

3) Make sure that D728B disconnect pins J7 and J8 are not bent.

4) Do a continuity wiring check between these pins of connector D728B at the E1-1 shelf:

D728B		**D728B**
pin K7	- - - - - - - - - - - - - - - - -	pin K8
pin J7	- - - - - - - - - - - - - - - - -	pin J8

5) The resistance between K7 and K8 should be within 10 percent of the resistance between J7 and J8.

6) Re-install the FSEU, M1746. To install it, do this task: AMM TASK 27-51-01-400-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(i) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

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

J. Fault Isolation Procedure IV

(1) Do these checks of the flap position indicator.

(a) Check for continuity between the right flap position transmitter connector D229 and the flap position indicator connector D686:

1) Disconnect connector D229 at the flap position transmitter T428.

2) Disconnect connector D686 at the flap position indicator N54.

D229		**D686**
pin 1	- - - - - - - - - - - - - - - - -	pin 12
pin 2	- - - - - - - - - - - - - - - - -	pin 13

(b) If you find a problem with the wiring then do these steps:

1) Repair the wiring.

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2) Re-connect connector D229.

3) Re-connect connector D686.

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

(c) If you did not find a wiring problem then continue

1) There is either an open circuit in the wiring between the FSEU and the indicator, or an open circuit inside the FSEU (the needle split relay has an open contact). The wiring fault is more probable.

(d) Do a continuity wiring check between these pins on the FSEU.

1) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

2) Check for continuity between the following pins:

M1746 B		M1746 B
pin J7	- - - - - - - - - - - - - - - - - -	pin J10
pin J8	- - - - - - - - - - - - - - - - - -	pin J11

3) If you find a problem with the FSEU, replace the FSEU.

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

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

(f) Do a continuity wiring check between the FSEU connector D728B at the E1-1 shelf and the flap position indicator D686:

D728B		D686
pin J10	- - - - - - - - - - - - - - - - - -	pin 12
pin J11	- - - - - - - - - - - - - - - - - -	pin 13

(g) If you find a problem with the wiring do these steps:

1) Repair the wiring.

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

(h) If you do not find a problem with the wiring, then check the right flap position indicator wiring for a short to ground.

1) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

2) Remove the FSEU, M1746. To remove it, do this task: AMM TASK 27-51-01-000-801.

3) Make sure that D728B disconnect pins J10 and J11 are not bent.

4) Do a continuity wiring check between these pins of connector D728B at the E1-1 shelf:

5)

D728B		D728B
pin K10	- - - - - - - - - - - - - - - -	pin K11
pin J10	- - - - - - - - - - - - - - - -	pin J11

6) The resistance between pins K10 and K11 should be within 10 percent of the resistance between pins J10 and J11.

7) Re-install the FSEU, M1746. To install it, do this task: AMM TASK 27-51-01-400-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

9) If you find a problem with the wiring then do these steps:

a) Repair the wiring.

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

(i) If you do not find a problem with the wiring, then continue.

1) Check for 28 VAC at the flap position indicator D686, between pin 10 (hot) and pin 9 (ground).

2) If you find 28VAC, then replace the N54 flap position indicator.

(j) Check the continuity between the flap position indicator N54 and the following terminals in TB1105:

TB1105	D686
ZA 13	pin 9
ZA 9	pin 10

(k) If no wiring problem is found replace the N54 flap position indicator.

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

K. Repair Confirmation

(1) Do this check of the flap position indicator.

(a) Press the ON/OFF switch on the FSEU's BITE panel.

(b) Make sure the display reads "EXISTING FAULTS?".

(c) Press the ON/OFF switch again to turn off the display.

WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS, AND THE LEADING EDGE FLAPS AND SLATS. THESE SURFACES WILL MOVE AND CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(d) Do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

(e) Operate the flaps.

1) Move the flap control lever to the 40-unit position.

2) Make sure the flaps move to the 40-unit position.

3) Move the flap control handle to the UP position.

4) Make sure the flaps move to their UP position.

(f) Make sure the flaps position indicator followed the flap lever commands and the flap position.

(g) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) Make sure the maintenance message does not show.

(h) If the maintenance message does not show, you have corrected the problem.

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(i) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

——————— END OF TASK ———————

821. Right Flap Position Transmitter Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-52408 TE FLAP SNSR R C

(2) The FSEU did not receive a valid signal from the right flap position transmitter, T428 during a ground test.

B. Possible Causes

(1) Right flap position transmitter, T428

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

D. Related Data

(1) (SSM 27-52-11)

(2) (WDM 27-52-11)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Replace the right flap position transmitter, T428 on the no. 8 transmission. These are the tasks:
- Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801
- Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the right flap position transmitter:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect connector D229 from the right flap position transmitter, T428.

(c) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D229 at the right flap position transmitter, T428:

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D728B		D229
pin J7	- - - - - - - - - - - - - - - - - -	pin 1
pin J8	- - - - - - - - - - - - - - - - - -	pin 2

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D229 to the right flap position transmitter, T428.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D229 to the right flap position transmitter, T428.

(3) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

822. Left Flap Excitation Voltage Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53279 L 28VAC EXC INV

(2) The excitation voltage to the FSEU for the left flap sensors is too low or too high.

B. Possible Causes

(1) Circuit Breaker, C213

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
D	14	C02043	AC BUS 28V AC XFR BUS 2 SECT 2

D. Related Data

(1) (WDM 24-53-11)

(2) (SSM 27-52-11)

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(3) (WDM 27-52-11)

E. Initial Evaluation

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
D	14	C02043	AC BUS 28V AC XFR BUS 2 SECT 2

(2) If both maintenance messages 27-53279 and 27-53280 are in the FSEU fault history in the same flight leg, while troubleshooting airplane systems that are not affected by the loss of AC power, they can be treated as a nuisance fault.

(3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(4) If the maintenance message does not show, then there was an intermittent fault.

(5) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the voltage to the FSEU, M1746:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Do a check for 20.0 to 32.0 VAC between these pins of connector D728B and connector D728A at the E1-1 shelf.

D728B		**D728A**
pin G11	- - - - - - - - - - - - - - - - -	pin F1

(c) If there is 20.0 to 32.0 VAC between these pins, then do these steps:

1) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If there is not 20.0 to 32.0 VAC between the pins, then continue.

(2) Do this check of the wiring between the FSEU, M1746 and the P6-2 Panel:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Do a wiring check between this pin of connector D728B at the E1-1 shelf and connector D46061 at P6-2 shelf:

D728B		**D46061**
pin G11	- - - - - - - - - - - - - - - - -	pin 14

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

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3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If you do not find a problem with the wiring, then continue.

1) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(3) Replace this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

—————— END OF TASK ——————

823. Right Flap Excitation Voltage Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53280 R 28VAC EXC INV

(2) The excitation voltage to the FSEU for the right flap sensors is too low or too high.

B. Possible Causes

(1) Circuit Breaker, C1443

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
D	14	C02043	AC BUS 28V AC XFR BUS 2 SECT 2

D. Related Data

(1) (WDM 24-53-11)

(2) (SSM 27-52-11)

(3) (WDM 27-52-11)

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E. Initial Evaluation

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
D	14	C02043	AC BUS 28V AC XFR BUS 2 SECT 2

(2) If both maintenance messages 27-53279 and 27-53280 are in the FSEU fault history in the same flight leg, while troubleshooting airplane systems that are not affected by the loss of AC power, they can be treated as a nuisance fault.

(3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(4) If the maintenance message does not show, then there was an intermittent fault.

(5) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the voltage to the FSEU, M1746:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Do a check for 20.0 to 32.0 VAC between these pins of connector D728B and connector D728A at the E1-1 shelf.

D728B		**D728A**
pin E11	- - - - - - - - - - - - - - - - - -	pin F1

(c) If there is 20.0 to 32.0 VAC between these pins, then do these steps:

1) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If there is not 20.0 to 32.0 VAC between the pins, then continue.

(2) Do this check of the wiring between the FSEU, M1746 and the P6-2 Panel:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Do a wiring check between this pin of connector D728B at the E1-1 shelf and connector D46061 at P6-2 shelf:

D728B		**D46061**
pin E11	- - - - - - - - - - - - - - - - - -	pin 15

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If you do not find a problem with the wiring, then continue.

1) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(3) Replace this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

824. Flap Bypass Valve Excitation Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53428 TE FLAPS BYPASS

(2) During a ground test the FSEU detected a low excitation voltage for the flap bypass valve.

B. Possible Causes

(1) Circuit Breaker, C210

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

Power Distribution Panel Number 1, P91

Row	Col	Number	Name
C	12	C03052	DC BUS 1 SECT 2

D. Related Data

(1) (SSM 27-53-11)

(2) (WDM 27-53-11)

E. Initial Evaluation

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

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Power Distribution Panel Number 1, P91

Row	Col	Number	Name
C	12	C03052	DC BUS 1 SECT 2

(2) Make sure the ALTERNATE FLAPS ARM switch on the P5 panel is in the OFF position.

(3) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

(4) If the maintenance message does not show, then there was an intermittent fault.

(5) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the bypass valve electrical power to the FSEU, M1746:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(b) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(d) Do a check for 28 VDC between pin 8 on connector D728C on the E1-1 shelf and structure ground.

(e) If there is 28 VDC between pin 8 on connector D728C and structure ground, then install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

1) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

(f) If there is not 28 VDC between pin 8 on connector D728C and structure ground, then continue.

(2) Do this check of the wiring between the FSEU, M1746 and the P6-2 Panel:

(a) Do a wiring check between this pin of connector D728C at the E1-1 shelf and connector D40502P at P6-2 shelf:

D728C		**D40502P**
pin 8	- - - - - - - - - - - - - - - - - -	pin 8

(b) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

3) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

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

1) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(3) Replace this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(a) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

——————— END OF TASK ———————

825. Airspeed Data Input to FSEU Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-54402 NO A/S DATA

(2) During the Existing Faults ground test, or the TE Flap Load Relief ground test, the FSEU did not receive airspeed data from the Left ADIRU over the ARINC 429 bus.

B. Possible Causes

(1) Left ADIRU, M1749

(2) FSEU, M1746

(3) Wiring problem

C. Related Data

(1) (SSM 27-54-11)

(2) (SSM 34-21-14)

(3) (WDM 27-54-11)

(4) (WDM 34-21-14)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If any maintenance messages for the ADIRU show, then do the fault isolation task for those procedures.

(b) If no maintenance messages for the ADIRU show, then continue.

(2) Do this check of the wiring between the FSEU and the Left ADIRU:

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(a) Do a check for active faults on the Ground Prox Computer, M652, do this task: GPWS BITE Procedure, 34-46 TASK 801.

NOTE: You can use the Ground Prox Computer, M652 to isolate where a wiring problem can be.

(b) If the fault message 34-A0001 ADIRU AIR DATA INACTIVE shows, then do this wiring check between terminal block TB523 and terminal block TB1110:

NOTE: This message shows that there is a problem with the wiring common to the FSEU, M1746 and the Ground Prox Computer, M652.

1) Get access to terminal block TB523 on the E5-2 shelf.
2) Get access to terminal block TB1110 on the E1-1 shelf.
3) Do a wiring check between these pins of terminal block TB523 at the E5-2 shelf and terminal block TB1110 at the E1-1 shelf.

TB523		TB1110
ZA 21	- - - - - - - - - - - - - - - - - -	YA 21
ZB 21	- - - - - - - - - - - - - - - - - -	YB 21

4) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
   c) If the maintenance message 27-54402 NO A/S DATA does not show, then you corrected the fault.
5) If you do not find a problem with the wiring, then continue.

(c) Do this wiring check between the FSEU, M1746 and terminal block TB1110 on the E1-1 shelf.

1) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.
2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and terminal block TB1110 at the E1-1 shelf.

D728B		TB1110
pin A4	- - - - - - - - - - - - - - - - -	YA 21
pin A5	- - - - - - - - - - - - - - - - -	YB 21

3) If you find a problem with the wiring, then do these steps:
   a) Repair the wiring.
   b) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
   c) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
   d) If the maintenance message 27-54402 NO A/S DATA does not show, then you corrected the fault.

(d) If you do not find a problem with the wiring, then continue.

(3) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

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826. Flap Position Indicator Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-58400 TE FLAP INDICATN

(2) During the TE Flap Asymmetry Skew Indication Ground test, the indicator needles on the flap position indicator did not move as expected.

(3) During the TE Flap Asymmetry Skew Indication Ground Test the FSEU asks the mechanic if the indicator needles moved in a specific way. The mechanic answered NO to one of the questions.

B. Possible Causes

(1) Flap position indicator, N54

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-52-11)

(2) (WDM 27-52-11)

E. Initial Evaluation

(1) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Replace the flap position indicator, N54. These are the tasks:
- Flap Position Indicator Removal, AMM TASK 27-58-02-000-801
- Flap Position Indicator Installation, AMM TASK 27-58-02-400-801

(a) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the flap position indicator, N54:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect connector D686 from the flap position indicator.

(c) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D686 at the flap position indicator, N54.

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D728B		D686
pin J10	- - - - - - - - - - - - - - - - - -	pin 12
pin J11	- - - - - - - - - - - - - - - - - -	pin 13
pin K10	- - - - - - - - - - - - - - - - - -	pin 6
pin K11	- - - - - - - - - - - - - - - - - -	pin 5

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D686 to the flap position indicator, N54.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D686 to the flap position indicator, N54.

(3) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

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

———————— END OF TASK ————————

827. ECS Discrete Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-52418 ECS

(2) An overcurrent condition was detected on the ECS ram air modulation circuit discrete output during an existing faults test.

B. Possible Causes

(1) FSEU, M1746

(2) Wiring problem

C. Related Data

(1) (SSM 21-51-24)

(2) (SSM 27-52-11)

(3) (WDM 21-51-24)

(4) (WDM 27-52-11)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

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E. Fault Isolation Procedure

(1) Replace the FSEU, M1746. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU, M1746 and the P6-4 Panel:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Do a wiring check between this pin of connector D728A at the E1-1 shelf and connector D40386 at P6-4 shelf:

D728A		D40386
pin C11	- - - - - - - - - - - - - - - - -	pin 7

(c) Repair the wiring.

(d) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(e) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

828. Rudder Load Limiter Discrete Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-54419 RUDDER LIMITER

(2) An overcurrent condition was detected on the rudder load limiter solenoid valve discrete output during an existing faults test.

B. Possible Causes

(1) Rudder Load Limiter Solenoid Valve, V158

(2) FSEU, M1746

(3) Wiring problem

C. Related Data

(1) (SSM 27-25-11)

(2) (SSM 27-54-11)

(3) (WDM 27-25-11)

(4) (WDM 27-54-11)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

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(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this check of the rudder load limiter solenoid valve, V158:

NOTE: The rudder load limiter solenoid valve is part of the rudder power control unit.

(a) Disconnect connector D10197 from the rudder load limiter solenoid valve, V158.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

1) Replace the rudder load limiter solenoid valve, V158. These are the tasks:
- Main Rudder PCU Load Limiter Solenoid Valve Removal, AMM TASK 27-21-91-000-805-001 or Main Rudder PCU Load Limiter Solenoid Valve Removal, AMM TASK 27-21-91-000-806-002
- Main Rudder PCU Load Limiter Solenoid Valve Installation, AMM TASK 27-21-91-400-805-001 or Main Rudder PCU Load Limiter Solenoid Valve Installation, AMM TASK 27-21-91-400-806-002

2) Reconnect connector D10197 to the rudder load limiter solenoid valve, V158.

3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If the maintenance message shows, then continue.

(2) Replace the FSEU, M1746. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU, M1746 and the rudder load limiter solenoid valve, V158:

(a) Disconnect connector D10197 from the rudder load limiter solenoid valve, V158.

(b) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(c) Do a wiring check between this pin of connector D728A at the E1-1 shelf and connector D10197 at the rudder load limiter solenoid valve, V158:

D728A		D10197
pin C12	- - - - - - - - - - - - - - - - -	pin 2

(d) Repair the wiring.

(e) Reconnect connector D10197 to the rudder load limiter solenoid valve, V158.

(f) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(g) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

END OF TASK

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829. Flap Load Relief Solenoid Discrete Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-54423 FLR OUTPUT

(2) An overcurrent condition was detected on the flap load limiter solenoid valve during an existing faults test.

B. Possible Causes

(1) Flap Load Limiter Solenoid Valve, V94

(2) FSEU, M1746

(3) Wiring problem

C. Related Data

(1) (SSM 27-54-11)

(2) (WDM 27-54-11)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this check of the flap load limiter solenoid valve, V94:

(a) Disconnect connector D1582 from the flap load limiter solenoid valve, V94.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

1) Replace the flap load limiter solenoid valve, V94. These are the tasks:
- Flap Load Limiter Solenoid Valve Removal, AMM TASK 27-51-65-000-802
- Flap Load Limiter Solenoid Valve Installation, AMM TASK 27-51-65-400-802

NOTE: The flap load limiter solenoid valve is installed on the trailing edge flap control valve.

2) Reconnect connector D1582 to the flap load limiter solenoid valve, V94.

3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If the maintenance message shows, then continue.

(2) Replace the FSEU, M1746. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

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(3) Do this check of the wiring between the FSEU, M1746 and the flap load limiter solenoid valve, V94:

(a) Disconnect connector D1582 from the flap load limiter solenoid valve, V94.

(b) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(c) Do a wiring check between this pin of connector D728A at the E1-1 shelf and connector D15827 at the flap load limiter solenoid valve, V94:

D728A		D1582
pin A12	- - - - - - - - - - - - - - - - -	pin 2

(d) Repair the wiring.

(e) Reconnect connector D1582 to the flap load limiter solenoid valve, V94.

(f) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(g) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

830. Trailing Edge Flap Uncommanded Motion Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51351 TE FLAP UCM

(2) Uncommanded motion of the trailing edge flap system was detected by the FSEU. The FSEU uses inputs from the flap lever position sensor, the flap position sensors and the No. 1 and No. 8 flap skew sensors to determine an uncommanded motion.

B. Possible Causes

(1) Flap Control Cables WFA / WFB

(2) Flap Feedback Cables WFFA / WFFB

(3) Flap Control Lever Position Sensor, T538

(4) Flap Load Relief Solenoid, V94

(5) Flap Control Unit

(6) Trailing Edge Flap Control Valve

(7) Leading Edge Flap and Slat Control Valve

(8) FSEU, M1746

C. Related Data

(1) (SSM 27-54-11)

(2) (WDM 27-54-11)

D. Initial Evaluation

(1) Make sure the position of the flap control lever agrees with the position of the flaps.

(2) Make sure the ALTERNATE FLAPS control switch on the P5 panel is in the OFF position.

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(3) Move the ALTERNATE FLAPS ARM switch to the ARM position to arm the alternate control system.

NOTE: This will make sure the bypass valve stays in the bypass position and the flaps do not move with hydraulic power.

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(5) Open these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

NOTE: Opening and then closing these circuit breakers will reset the uncommanded motion fault in the FSEU.

(6) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS. THE FLAPS CAN MOVE AND CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(7) Move the ALTERNATE FLAPS ARM switch to the OFF position to disarm the alternate control system.

NOTE: If the flaps begin to move, use the ALTERNATE FLAPS ARM switch to stop them. The FSEU will not stop the flaps automatically when motion is detected.

(a) If the trailing edge flaps move when you disarm the alternate control system, then do the Fault Isolation Procedure below.

(b) If the trailing edge flaps do not move when you disarm the alternate control system, then continue.

(8) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

(a) If the BITE test does not pass, then do the Fault Isolation Procedure below, or do the Fault Isolation Procedure for the new maintenance message that shows.

(b) If the BITE test passes, then continue.

(9) Do this test of the trailing edge flaps with airspeed input to see if the FSEU detects an uncommanded motion fault again:

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(a) Simulate an airspeed of more than 60 knots. To simulate the airspeed, do this task: Air Data Reference - System Test, AMM TASK 34-21-00-730-802.

NOTE: Without an airspeed input of more than 60 knots, the FSEU will not detect the uncommanded motion fault.

(b) Use the flap control lever to extend the trailing edge flaps from the UP position to the 40-unit position. Stop at each detent and wait for the flap position indicator needles to stop.

(c) Use the flap control lever to retract the trailing edge flaps from the 40-unit position to the UP position. Stop at each detent and wait for the flap position indicator needles to stop.

1) If the flap position indicators do not show the same position as the flap control lever, or if you cannot move the flaps to all of the positions, then do the Fault Isolation Procedure below.

(d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(e) If the maintenance message does not show, then there was an intermittent fault.

(f) If the maintenance message shows, then do the Fault Isolation Procedure below.

(g) Remove the airspeed simulation.

(10) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

E. Fault Isolation Procedure

(1) Do this check of the flap control cables WFA and WFB:

NOTE: These cables connect the flap control lever to the flap control quadrant on the flap control unit.

(a) Open the access panel on the upper right side of the nose wheel well to get access to the cables WFA and WFB.

(b) Make sure there is tension on the two cables WFA and WFB.

1) If there is no tension on the cables WFA or WFB, then do a check of the cables, pulleys and quadrants.

a) If the cables are broken or damaged, then replace the cables. These are the tasks:
- Control Cables Removal, AMM TASK 20-10-91-000-801
- Control Cables Installation, AMM TASK 20-10-91-400-801

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

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

2) If there is tension on the cables WFA or WFB, then continue.

(c) Close the access panel in the nose wheel well.

(2) Do this check of the flap feedback cables WFFA and WFFB:

NOTE: These cables connect the power drive unit to the flap control unit in the main wheel well.

(a) Make sure there is tension on the two cables WFFA and WFFB.

1) If there is no tension on the cables WFFA or WFFB, then do a check of the cables and cable drums.

a) If the cables are broken or damaged, then replace the cables. These are the tasks:
- Control Cables Removal, AMM TASK 20-10-91-000-801
- Control Cables Installation, AMM TASK 20-10-91-400-801

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

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

2) If there is tension on the cables WFA or WFB, then continue.

(3) Do this check of the output of the flap control lever sensor, T538:

NOTE: The flap control lever position sensor is installed in the control stand.

(a) Move the flap control lever to the UP position.

(b) Do the following to get access to the FSEU in the main equipment center:

1) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

(c) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?

(d) Do a check of the flap control lever sensor inputs to the FSEU:

1) Select OTHER FUNCTNS? from the MAIN MENU on the FSEU.

2) Select I/O MONITOR? from the OTHER FUNCTNS? menu.

3) Select SYNCHRO INPUTS? from the I/O MONITOR? menu.

4) Make sure the inputs for the LVR POS are in the limit of -5.29 to 2.69.

5) Move the flap control lever to the 10-unit position.

6) Make sure the inputs for the LVR POS are in the limit of 50.6 to 54.6.

7) Move the flap control lever to the 40-unit position.

8) Make sure the inputs for the LVR POS are in the limit of 105.3 to 113.5.

9) Move the flap control lever to the UP position.

10) Make sure the inputs for the LVR POS are in the limit of -5.29 to 2.69.

(e) If the inputs to the FSEU are not in the limits, then do these steps:

1) Replace the flap control lever position sensor, T538. These are the tasks:
- Flap Control Lever Position Sensor Removal, AMM TASK 27-51-06-000-802
- Flap Control Lever Position Sensor Installation, AMM TASK 27-51-06-400-802

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

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

(f) If the inputs to the FSEU are in the limits, then continue.

1) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

to the main equipment center.

(4) Do this check of the power supply to the flap load relief solenoid, V94:

NOTE: The flap load relief solenoid is installed on the flap control valve in the main wheel well.

(a) Disconnect the electrical connector D1582 from the flap load relief solenoid, V94.

(b) Do a check for continuity between pin 2 on connector D1582 and structure ground.

1) If there is continuity between pin 2 and structure ground, then do these steps:

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a) Replace the FSEU. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

b) Do a continuity check between pin 2 on connector D1582 and structure ground again.

c) If there is continuity between pin 2 and structure ground, then repair the wiring between the FSEU, M1746 and the flap load relief solenoid, V94.

d) Reconnect the electrical connector D1582 for the flap load relief solenoid, V94.

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

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

2) If there is not continuity between pin 2 and structure ground, then continue.

(c) Make sure the flap control lever is in the UP position.

(d) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

(e) Do a check for 28 VDC between pin 1 on connector D1582 and structure ground.

1) If there is 28 VDC between pin 1 and structure ground, then do these steps:

a) Replace the flap control lever 30-unit switch. These are the tasks:
- Flap Control Lever Position Sensor Removal, AMM TASK 27-51-06-000-802
- Flap Control Lever Position Sensor Installation, AMM TASK 27-51-06-400-802

b) Do a check for 28 VDC between pin 1 on connector D1582 and structure ground again.

c) If there is 28 VDC between pin 1 and structure ground, then repair the wiring between the flap control lever 30-unit switch and the flap load relief solenoid, V94.

d) Reconnect the electrical connector D1582 for the flap load relief solenoid, V94.

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

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

2) If there is not continuity between pin 2 and structure ground, then continue.

(5) Do this check of the flap control unit and the flap control valves:

(a) Remove the lower pan from the flap control unit.

(b) Look at the linkages inside the flap control unit while the flap control lever is moved.

(c) If the linkages in the flap control unit do not move properly when the flap control lever moves, then do these steps:

1) Disconnect the linkage for the trailing edge flap control valve inside the flap control unit.

2) Move the flap control lever.

3) If the linkages move properly, then replace the trailing edge flap control valve. These are the tasks:
- Trailing Edge Flap Control Valve Removal, AMM TASK 27-51-65-000-801
- Trailing Edge Flap Control Valve Installation, AMM TASK 27-51-65-400-801

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

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

4) If the linkages do not move properly, then continue.

5) Reconnect the linkage for the trailing edge flap control valve.

6) Disconnect the linkage for the leading edge flap and slat control valve inside the flap control unit.

7) Move the flap control lever.

8) If the linkages move properly, then replace the leading edge flap and slat control valve. These are the tasks:
   - Leading Edge Flap and Slat Control Valve Removal, AMM TASK 27-81-81-000-801
   - Leading Edge Flap and Slat Control Valve Installation, AMM TASK 27-81-81-400-801

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

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

9) If the linkages do not move properly, then replace the flap control unit. These are the tasks:
   - Flap Control Unit Removal, AMM TASK 27-51-61-000-801
   - Flap Control Unit Installation, AMM TASK 27-51-61-400-801

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

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

(d) If the linkages in the flap control unit move properly when the flap control lever moves, then continue.

(e) Install the lower pan on the flap control unit.

(6) Do this task: Trailing Edge Flap Control System Adjustment, AMM TASK 27-51-00-820-801.

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

F. Repair Confirmation

(1) Make sure the position of the flap control lever agrees with the position of the flaps.

(2) Make sure the ALTERNATE FLAPS control switch on the P5 panel is in the OFF position.

(3) Move the ALTERNATE FLAPS ARM switch to the ARM position to arm the alternate control system.

NOTE: This will make sure the bypass valve stays in the bypass position and the flaps do not move with hydraulic power.

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(5) Open these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

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NOTE: Opening and then closing these circuit breakers will reset the uncommanded motion fault in the FSEU.

(6) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS. THE FLAPS CAN MOVE AND CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(7) Move the ALTERNATE FLAPS ARM switch to the OFF position to disarm the alternate control system.

NOTE: If the flaps begin to move, use the ALTERNATE FLAPS ARM switch to stop them. The FSEU will not stop the flaps automatically when motion is detected.

(a) If the trailing edge flaps move when you disarm the alternate control system, then the Repair Confirmation is not satisfactory.

(b) If the trailing edge flaps do not move when you disarm the alternate control system, then continue.

(8) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

(a) If the BITE test does not pass, then the Repair Confirmation is not satisfactory.

(b) If the BITE test passes, then continue.

(9) Do this test of the trailing edge flaps with airspeed input to see if the FSEU detects an uncommanded motion fault again:

(a) Simulate an airspeed of more than 60 knots. To simulate the airspeed, do this task: Air Data Reference - System Test, AMM TASK 34-21-00-730-802.

NOTE: Without an airspeed input of more than 60 knots, the FSEU will not detect the uncommanded motion fault.

(b) Use the flap control lever to extend the trailing edge flaps from the UP position to the 40-unit position. Stop at each detent and wait for the flap position indicator needles to stop.

(c) Use the flap control lever to retract the trailing edge flaps from the 40-unit position to the UP position. Stop at each detent and wait for the flap position indicator needles to stop.

1) If the flap position indicators do not show the same position as the flap control lever, or if you cannot move the flaps to all of the positions, then the Repair Confirmation is not satisfactory.

(d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(e) If the maintenance message shows, then the Repair Confirmation is not satisfactory.

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

(10) Remove the airspeed simulation.

(11) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

END OF TASK

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831. Flap Load Relief From 25-Units Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51406 FLP LOAD RELIEF

(2) During the load relief ground test the trailing edge flaps retracted from the 25-unit position.

NOTE: With the trailing edge flaps and the flap control lever in the 25-unit position, the trailing edge flaps should not automatically retract.

B. Possible Causes

(1) Flap lever 30-unit position switch, S1039

(2) Wiring Problems

C. Related Data

(1) (SSM 27-54-11)

(2) (WDM 27-54-11)

D. Initial Evaluation

(1) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this test of the flap lever 30-unit position switch, S1039:

(a) Disconnect the electrical connector D5150P from the flap lever 30-unit position switch, S1039.

1) The access to the electrical connector is from below the control stand. To get access, do the following:

a) Open this access panel:

Number	Name/Location
112A	Forward Access Door

(b) Move the flap control lever to the UP position.

(c) Do a continuity check between pins 9 and 11 on connector D5150P which is installed on the bottom of the control stand.

1) If there is continuity between pins 9 and 11, then replace the flap lever 30-unit position switch, S1039. These are the tasks:

- Flap Lever Position Switch Removal, AMM TASK 27-51-08-000-801
- Flap Lever Position Switch Installation, AMM TASK 27-51-08-400-801

a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

c) If the maintenance message shows, then continue.

2) If there is not continuity between pins 9 and 11, then continue.

(d) Move the flap control lever to the 25-unit position.

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(e) Do a continuity check between pins 9 and 11 on connector D5150P with the flap control lever in the 25-unit position.

1) If there is continuity between pins 9 and 11, then adjust the flap lever 30-unit position switch, S1039. To adjust it, do this task: Flap Lever Position Switch Adjustment, AMM TASK 27-51-08-820-801.

a) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

c) If the maintenance message shows, then continue.

(f) If there is not continuity between pins 9 and 11, then continue.

(2) Do this check of the wiring between the flap lever 30-unit position switch, S1039 and the flap load relief solenoid, V94:

(a) Disconnect connector D1582 from the flap load relief solenoid, V94.

NOTE: The flap load relief solenoid is installed on the trailing edge flap control valve in the main wheel well.

(b) Do a wiring check between these pins of connector D5150P at the flap lever 30-unit position switch, S1039 and connector D1582 at the flap load relief solenoid, V94:

D5150P		D1582
pin 11	- - - - - - - - - - - - - - - - - -	pin 1

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D5150P to the flap lever 30-unit position switch, S1039.

3) Re-connect connector D1582 to the flap load relief solenoid, V94.

4) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(3) Close this access panel:

Number	Name/Location
112A	Forward Access Door

that was used to get access to the electrical connector.

———————— END OF TASK ————————

832. Flap Position Transmitter Disagree Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-52261 TE FLAP SNSR DIS

(2) The signals to the FSEU from the left and right flap position transmitters do not agree. It is likely that the flap drive system is broken or disconnected between the power drive unit and one of the flap position transmitters.

B. Possible Causes

(1) Trailing edge flap drive system

(a) Torque tubes

(b) Torque tube support

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(c) Seal rib angle gearbox

(d) Main landing gear beam angle gearbox

(e) Tee angle gearbox

(f) Transmissions

(2) Left flap position transmitter, T427

(3) Right flap position transmitter, T428

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-52-11)

(2) (WDM 27-52-11)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Find which wing has a broken or disconnected drive system:

(a) Use the FSEU to find the outputs from the left and right flap position transmitters:

1) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?

2) Select OTHER FUNCTNS? from the MAIN MENU on the FSEU.

3) Select I/O MONITOR? from the OTHER FUNCTNS? menu.

4) Select SYNCHRO INPUTS? from the I/O MONITOR? menu.

5) Write down the values for L FL POS and R FL POS.

NOTE: Push the arrow keys to step through the sensor values.

(b) Use the manual drive input on the flap power drive unit to extend or retract the flaps the number of turns shown in (Table 201). To manually move the flaps, do this task: Trailing Edge Flap System Manual Operation, AMM TASK 27-51-00-980-801.

NOTE: The number of turns is different for different flap positions because of cams inside the flap position transmitters.

Table 201

Flap Position	Manual Input Turns
UP to 1	5
1 to 25	3

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(Continued)

Flap Position	Manual Input Turns
25 to 40	11

(c) Use the FSEU to find the outputs from the left and right flap position transmitters again.

(d) If the L FL POS did not change by a minimum of 1 degree, then continue. The flap drive system is disconnected on the left wing.

(e) If the R FL POS did not change by a minimum of 1 degree, then continue. The flap drive system is disconnected on the right wing.

(f) If L FL POS and R FL POS each changed by a minimum of 1 degree, then do these steps:

1) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(2) Find where the flap drive system is broken or disconnected:

NOTE: Do these steps until you find where the flap drive system is broken or disconnected. These steps are applicable to the flap drive system on the left wing or the right wing.

(a) Look for a broken or disconnected torque tube between the flap power drive unit and the tee angle gearbox in the main wheel well.

(b) If the flaps are retracted, then remove the aft fairings for the flap supports on the applicable wing:

1) Do this task: Inboard Flap Support Aft Fairing Removal, AMM TASK 27-51-18-000-802.

2) Do this task: Outboard Flap Inboard Support Aft Fairing Removal, AMM TASK 27-51-28-000-804.

3) Do this task: Outboard Flap Outboard Support Aft Fairing Removal, AMM TASK 27-51-28-000-802.

(c) Look at the torque tubes that attach to the transmissions to see if they are broken or disconnected.

(d) If the flaps are retracted, remove these panels to get access to the torque tube support and the angle gearboxes:

1) On the left wing, open

Number	Name/Location
551FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel
561AB	Midspan Fixed Trailing Edge Access Panel - WBL 224
561CB	Midspan Ficed Trailing Edge Access Panel Door - WBL 388

2) On the right wing, open

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Number	Name/Location
651FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel
661AB	Midspan Fixed T.E. Panel
661CB	Midspan Fixed T.E. Panel

(e) Look at the torque tubes that attach to the torque tube support to see if they are broken or disconnected.

(f) Look at the torque tubes that attach to the seal rib angle gearbox to see if they are broken or disconnected.

(g) Look at the torque tubes that attach to the main landing gear beam angle gearbox to see if they are broken or disconnected.

(h) Watch the torque tubes turn while you manually extend or retract the flaps with the manual drive input. To manually move the flaps, do this task: Trailing Edge Flap System Manual Operation, AMM TASK 27-51-00-980-801.

NOTE: The torque tubes should all turn at the same time, in the same direction. Turn the power drive unit the opposite direction that you turned it previously.

1) If the torque tubes on the inboard and outboard sides of a component do not turn together, then that component has an internal failure.

(i) Replace the applicable component:

1) If it is necessary, replace an outboard torque tube. These are the tasks:
   - Outboard Wing Flap Torque Tube Removal, AMM TASK 27-51-58-000-801
   - Outboard Wing Flap Torque Tube Installation, AMM TASK 27-51-58-400-801
2) If it is necessary, replace an inboard torque tube. These are the tasks:
   - Inboard Wing Flap Torque Tube Removal, AMM TASK 27-51-58-000-802
   - Inboard Wing Flap Torque Tube Installation, AMM TASK 27-51-58-400-802
3) If it is necessary, replace torque tube in the wheel well. These are the tasks:
   - Wheel Well Flap Torque Tube Removal, AMM TASK 27-51-58-000-803
   - Wheel Well Flap Torque Tube Installation, AMM TASK 27-51-58-400-803
4) If it is necessary, replace the torque tube support. These are the tasks:
   - Flap Torque Tube Support Removal, AMM TASK 27-51-59-000-801
   - Flap Torque Tube Support Installation, AMM TASK 27-51-59-400-801
5) If it is necessary, replace the seal rib angle gearbox. These are the tasks:
   - Seal Rib Angle Gearbox Removal, AMM TASK 27-51-57-000-801
   - Seal Rib Angle Gearbox Installation, AMM TASK 27-51-57-400-801
6) If it is necessary, replace the main landing gear beam angle gearbox. These are the tasks:
   - Main Landing Gear Beam Angle Gearbox Removal, AMM TASK 27-51-56-000-801
   - Main Landing Gear Beam Angle Gearbox Installation, AMM TASK 27-51-56-400-801
7) If it is necessary, replace the tee angle gearbox. These are the tasks:
   - Tee Angle Gearbox Removal, AMM TASK 27-51-55-000-801
   - Tee Angle Gearbox Installation, AMM TASK 27-51-55-400-801
8) If it is necessary, replace the inboard flap outboard transmission. These are the tasks:
   - Inboard Flap Outboard Transmission Removal, AMM TASK 27-51-31-000-801

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- Inboard Flap Outboard Transmission Installation, AMM TASK 27-51-31-400-801

9) If it is necessary, replace the outboard flap inboard transmission. These are the tasks:
   - Outboard Flap Inboard Transmission Removal, AMM TASK 27-51-41-000-802
   - Outboard Flap Inboard Transmission Installation, AMM TASK 27-51-41-400-802

10) If it is necessary, replace the outboard flap outboard transmission. These are the tasks:
   - Outboard Flap Outboard Transmission Removal, AMM TASK 27-51-41-000-801
   - Outboard Flap Outboard Transmission Installation, AMM TASK 27-51-41-400-801

(j) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

(k) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(l) If they are removed, then install the aft fairings for the flap supports on the applicable wing:

1) Do this task: Inboard Flap Support Aft Fairing Installation, AMM TASK 27-51-18-400-802.

2) Do this task: Outboard Flap Inboard Support Aft Fairing Installation, AMM TASK 27-51-28-400-804.

3) Do this task: Outboard Flap Outboard Support Aft Fairing Installation, AMM TASK 27-51-28-400-802.

(m) If the panels are removed, then install these panels:

1) On the left wing, close

Number	Name/Location
551FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel
561AB	Midspan Fixed Trailing Edge Access Panel - WBL 224
561CB	Midspan Ficed Trailing Edge Access Panel Door - WBL 388

2) On the right wing, close

Number	Name/Location
651FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel
661AB	Midspan Fixed T.E. Panel
661CB	Midspan Fixed T.E. Panel

(3) Replace the left flap position transmitter, T427 on the no. 1 transmission. These are the tasks:
- Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801
- Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(4) Replace the right flap position transmitter, T428 on the no. 8 transmission. These are the tasks:
- Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801
- Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801

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(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

833. TE Flap Load Relief Light Discrete Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-58335 FLAP LD RLF LT

(2) An overcurrent condtion was detected on the trailing edge flap load relief light during an existing faults test.

B. Possible Causes

(1) Flap Load Relief Light, L3

(2) FSEU, M1746

(3) Wiring problem

C. Related Data

(1) (SSM 27-54-11)

(2) (WDM 27-54-11)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this check of the Flap Load Relief Light, L3:

(a) Disconnect connector D3991 from the flap load relief light, L3 in the P3 panel.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

1) Replace the Flap Load Relief Light, L3 on the P3 panel.

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If the maintenance message shows, then continue.

(2) Replace the FSEU, M1746. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU, M1746 and the flap load relief light, L3:

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(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect connector D3991 from the flap load relief light, L3 in the P3 panel.

(c) Do a wiring check between this pin of connector D728A at the E1-1 shelf and connector D3991 at the flap load relief light, L3:

D728A		D3991
pin D9	- - - - - - - - - - - - - - - - - -	pin 6

(d) Repair the wiring.

(e) Reconnect connector D13991 to the flap load relief light, L3.

(f) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(g) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

834. FSEU Program Pin Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81277 PROGRAM PINS

(b) 27-81278 INVALID APL TYPE

(2) There is a problem with the program pins for the FSEU. Program pins that should be grounded are open, or program pins that should be open are grounded.

B. Possible Causes

(1) FSEU, M1746

(2) Wiring problem

C. Related Data

(1) (SSM 27-81-41)

(2) (WDM 27-81-31)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this check of the program pin connectors for the FSEU:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Do a continuity check between these pins of connector D728B at the E1-1 shelf and structure ground.

HAP 037-054

1) Pin D2 should be open.

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HAP 037-054 (Continued)

HAP ALL

2) Pin D2 should be grounded.

3) Pin E2 should be open.

4) Pin F2 should be open.

5) Pin G2 should be open.

HAP 037-054

6) Pin G2 should be grounded.

HAP ALL

7) Pin H2 should be grounded.

HAP 037-054

8) Pin H2 should be open.

HAP ALL

(c) If the pins are not in the condition specified, then do these steps:

1) Repair the connector.

2) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If the pins are in the condition specified, then continue.

(2) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

836. Trailing Edge Flaps Primary Operation Problem - Fault Isolation

A. Description

(1) The trailing edge flaps did not operate with primary control.

(2) With primary control, hydraulic system B supplies power to the trailing edge flaps.

(3) (SDS SUBJECT 27-51-00)

B. Possible Causes

(1) Trailing edge flap bypass valve, V52

(2) ALTERNATE FLAPS ARM switch, S1

(3) Flap hydraulic motor

(4) Flap priority valve

(5) FSEU, M1746

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(6) Trailing edge flap drive system
   (a) Flap power drive unit
   (b) Transmissions
   (c) Torque tube support
   (d) Seal rib angle gearbox
   (e) Main landing gear beam angle gearbox
   (f) Tee angle gearbox

(7) Trailing edge flap control system
   (a) Flap control cables WFA / WFB
   (b) Flap control unit
   (c) Trailing edge flap control valve

(8) Wiring problem

C. Related Data

(1) (SSM 27-50-01)

(2) (SSM 27-53-11)

(3) (WDM 27-53-11)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
   (a) If the FSEU shows flap UCM, flap sensor disagree, flap bypass valve or flap skew maintenance messages, then go to the FIM task for the applicable maintenance message.
   (b) If the FSEU does not show flap UCM, flap sensor disagree, flap bypass valve or flap skew maintenance messages, then continue.

(2) Do this operational test of the trailing edge flap system with primary control:

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

   (a) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
   (b) Use the primary system to extend and retract the flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.
   (c) Remove system B hydraulic power. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
   (d) If the trailing edge flaps extend and retract with the primary system, then there was an intermittent fault.
   (e) If the trailing edge flaps do not extend and retract with the primary system, then continue.

(3) Do this operational test of the trailing edge flaps with the alternate control system:

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WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS, AND THE LEADING EDGE FLAPS AND SLATS. THESE SURFACES WILL MOVE AND CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(a) Move the ALTERNATE FLAPS ARM switch on the P5 panel to the ARM position to arm the alternate control system.

NOTE: The standby hydraulic pump will operate when you arm the alternate control system.

(b) Move the ALTERNATE FLAPS control switch to the DOWN position to extend the trailing edge flaps.

NOTE: The leading edge flaps and slats will extend when you extend the trailing edge flaps.

(c) Move the ALTERNATE FLAPS control switch to the UP position to retract the trailing edge flaps.

NOTE: The leading edge flaps and slats will not retract with alternate control.

(d) If the trailing edge flaps extend and retract with the alternate control, then do the Fault Isolation Procedure - Drive System Operates below.

(e) If the trailing edge flaps do not extend and retract with the alternate control, then do the Fault Isolation Procedure - Drive System Does Not Operate below.

E. Fault Isolation Procedure - Drive System Operates

(1) Do this check of the position of the trailing edge flap bypass valve, V52:

(a) Make sure the ALTERNATE FLAPS ARM switch on the P5 panel is in the OFF position.

(b) Look at the position of the manual override lever on the trailing edge flaps bypass valve, V52.

NOTE: The trailing edge flap bypass valve should be in POSITION 1. The trailing edge flap bypass valve is installed on the aft bulkhead of the main wheel well.

(c) If the manual override lever on the bypass valve is in POSITION 2, then do these steps:

1) Disconnect the electrical connector D1014 from the trailing edge flap bypass valve, V52.

2) Do a check for 28 VDC between pin 1 of connector D1014 and structure ground.

3) If there is not 28 VDC between pin 1 of connector D1014 and structure ground, then do these steps:

a) Replace the trailing edge flap bypass valve, V52. These are the tasks:

- Trailing Edge Flap Bypass Valve Assembly Removal, AMM TASK 27-51-02-000-801
- Trailing Edge Flap Bypass Valve Assembly Installation, AMM TASK 27-51-02-400-801

b) Re-connect electrical connector D1014 to the trailing edge flap bypass valve, V52.

c) Use the primary control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

d) If the trailing edge flaps operate with primary control, then you corrected the fault.

4) If there is 28 VDC between pin 1 of connector D1014 and structure ground, then do these steps:

a) Replace the ALTERNATE FLAPS ARM switch, S1.

b) Re-connect electrical connector D1014 to the trailing edge flap bypass valve, V52.

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c) Use the primary control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

d) If the trailing edge flaps operate with primary control, then you corrected the fault.

e) If the trailing edge flaps do not operate with primary control, continue.

(d) If the manual override lever on the bypass valve is in POSITION 1, then continue.

1) Re-connect electrical connector D1014 to the trailing edge flap bypass valve, V52.

(2) Do this check of the flap control system:

NOTE: The flap control system includes the flap control cables WFA / WFB, the flap control unit, and the trailing edge flap control valve.

(a) Remove the screws that attach the lower pan to the flap control unit.

NOTE: The flap control unit is installed in the right main wheel well.

(b) Look at the linkages inside the flap control unit while you move the flap control lever.

(c) If the linkages do not move when you move the flap control lever, then do these steps:

1) Get access to the flap control cables WFA and WFB through the access panel on the upper right side of the nose wheel well.

2) If the cables WFA and WFB do not have tension, then do these steps:

a) Adjust or replace the cables. To adjust the cables, do this task: Trailing Edge Flap Control System Adjustment, AMM TASK 27-51-00-820-801.

b) Use the primary control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

c) If the trailing edge flaps operate with primary control, then you corrected the fault.

3) If the cables WFA and WFB have tension, then do these steps:

a) Replace the flap control unit. These are the tasks:
- Flap Control Unit Removal, AMM TASK 27-51-61-000-801
- Flap Control Unit Installation, AMM TASK 27-51-61-400-801

b) Use the primary control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

c) If the trailing edge flaps operate with primary control, then you corrected the fault.

4) Install the access panel on the upper right side of the nose wheel well.

(d) If the linkages in the flap control unit move when you move the flap control lever, then do these steps:

1) Replace the flap control valve. These are the tasks:
- Trailing Edge Flap Control Valve Removal, AMM TASK 27-51-65-000-801
- Trailing Edge Flap Control Valve Installation, AMM TASK 27-51-65-400-801

2) Use the primary control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

3) If the trailing edge flaps operate with primary control, then you corrected the fault.

(e) Install the lower pan on the flap control unit with the screws.

(3) Replace the flap hydraulic motor. These are the tasks:

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- Flap Hydraulic Motor Removal, AMM TASK 27-51-52-000-801
- Flap Hydraulic Motor Installation, AMM TASK 27-51-52-400-801

(a) Use the primary control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

(b) If the trailing edge flaps operate with primary control, then you corrected the fault.

F. Fault Isolation Procedure - Drive System Does Not Operate

NOTE: There is likely a jam in one of the gearboxes in the trailing edge flap drive system.

(1) Do this check to find where the flap drive system is jammed:

NOTE: Do these steps until you find where the flap drive system is jammed. These steps are applicable to the flap drive system on the left wing and the right wing.

(a) Do the check on these components on the flap drive system:

1) The flap transmissions.
2) The tee angle gearbox.
3) The main landing gear beam angle gearbox.
4) The seal rib angle gearbox.
5) The torque tube support.

(b) If the flaps are retracted, then remove the aft fairings for the flap supports on the applicable wing to get access to the transmissions:

1) Do this task: Inboard Flap Support Aft Fairing Removal, AMM TASK 27-51-18-000-802.
2) Do this task: Outboard Flap Inboard Support Aft Fairing Removal, AMM TASK 27-51-28-000-804.
3) Do this task: Outboard Flap Outboard Support Aft Fairing Removal, AMM TASK 27-51-28-000-802.

(c) If the flaps are retracted, remove these panels to get access to the torque tube support and the angle gearboxes:

1) On the left wing, open

Number	Name/Location
551FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel
561AB	Midspan Fixed Trailing Edge Access Panel - WBL 224
561CB	Midspan Ficed Trailing Edge Access Panel Door - WBL 388

2) On the right wing, open

Number	Name/Location
651FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel
661AB	Midspan Fixed T.E. Panel
661CB	Midspan Fixed T.E. Panel

(d) Disconnect the torque tubes from the applicable component.

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(e) Turn the torque tube couplings to see if the component is jammed.

(f) Replace the applicable component:

1) If it is necessary, replace the inboard flap inboard transmission. These are the tasks:
   - Inboard Flap Inboard Transmission Removal, AMM TASK 27-51-31-000-802
   - Inboard Flap Inboard Transmission Installation, AMM TASK 27-51-31-400-802

2) If it is necessary, replace the inboard flap outboard transmission. These are the tasks:
   - Inboard Flap Outboard Transmission Removal, AMM TASK 27-51-31-000-801
   - Inboard Flap Outboard Transmission Installation, AMM TASK 27-51-31-400-801

3) If it is necessary, replace the outboard flap inboard transmission. These are the tasks:
   - Outboard Flap Inboard Transmission Removal, AMM TASK 27-51-41-000-802
   - Outboard Flap Inboard Transmission Installation, AMM TASK 27-51-41-400-802

4) If it is necessary, replace the outboard flap outboard transmission. These are the tasks:
   - Outboard Flap Outboard Transmission Removal, AMM TASK 27-51-41-000-801
   - Outboard Flap Outboard Transmission Installation, AMM TASK 27-51-41-400-801

5) If it is necessary, replace the torque tube support. These are the tasks:
   - Flap Torque Tube Support Removal, AMM TASK 27-51-59-000-801
   - Flap Torque Tube Support Installation, AMM TASK 27-51-59-400-801

6) If it is necessary, replace the seal rib angle gearbox. These are the tasks:
   - Seal Rib Angle Gearbox Removal, AMM TASK 27-51-57-000-801
   - Seal Rib Angle Gearbox Installation, AMM TASK 27-51-57-400-801

7) If it is necessary, replace the main landing gear beam angle gearbox. These are the tasks:
   - Main Landing Gear Beam Angle Gearbox Removal, AMM TASK 27-51-56-000-801
   - Main Landing Gear Beam Angle Gearbox Installation, AMM TASK 27-51-56-400-801

8) If it is necessary, replace the tee angle gearbox. These are the tasks:
   - Tee Angle Gearbox Removal, AMM TASK 27-51-55-000-801
   - Tee Angle Gearbox Installation, AMM TASK 27-51-55-400-801

(g) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

NOTE: The adjustment procedure will include reconnecting the torque tubes.

(h) Use the primary control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

(i) If the trailing edge flaps operate with primary control, then you corrected the fault.

1) If the trailing edge flaps do not operate with primary control, then continue.

(j) If they are removed, then install the aft fairings for the flap supports on the applicable wing:

1) Do this task: Inboard Flap Support Aft Fairing Installation, AMM TASK 27-51-18-400-802.

2) Do this task: Outboard Flap Inboard Support Aft Fairing Installation, AMM TASK 27-51-28-400-804.

3) Do this task: Outboard Flap Outboard Support Aft Fairing Installation, AMM TASK 27-51-28-400-802.

(k) If the panels are removed, then install these panels:

1) On the left wing, close

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Number	Name/Location
551FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel
561AB	Midspan Fixed Trailing Edge Access Panel - WBL 224
561CB	Midspan Ficed Trailing Edge Access Panel Door - WBL 388

2) On the right wing, close

Number	Name/Location
651FB	Lower Inboard Fixed Trailing Edge, Landing Gear Access Panel
661AB	Midspan Fixed T.E. Panel
661CB	Midspan Fixed T.E. Panel

(2) Replace the flap power drive unit. These are the tasks:
- Flap Power Drive Unit (PDU) Removal, AMM TASK 27-51-51-000-801
- Flap Power Drive Unit (PDU) Installation, AMM TASK 27-51-51-400-801

(a) Use the primary control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

(b) If the trailing edge flaps operate with primary control, then you corrected the fault.

——————— END OF TASK ———————

837. Alternate Trailing Edge Flaps Operation Problem - Fault Isolation

A. Description

(1) The trailing edge flaps did not operate with alternate control.

(2) The alternate flap controls use the ALTERNATE FLAPS ARM switch and control switch to command movement of the trailing edge flaps. The flaps are powered by the electric motor on the flap power drive unit.

B. Possible Causes

(1) Trailing edge flap bypass valve, V52

(2) Flap electric motor, M339

(3) ALTERNATE FLAPS ARM switch, S1

(4) Alternate TE flap DOWN relay, R57

(5) Alternate TE flap UP relay, R58

(6) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

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Row	Col	Number	Name
D	13	C00841	FLIGHT CONTROL ALTN T.E. FLAP DRIVE

D. Related Data

(1) (SSM 27-53-11)

(2) (SSM 27-53-12)

(3) (WDM 27-53-11)

(4) (WDM 27-53-12)

E. Initial Evaluation

(1) Do this operational test of the trailing edge flaps with the alternate control system:

WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS, AND THE LEADING EDGE FLAPS AND SLATS. THESE SURFACES WILL MOVE AND CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(a) Move the ALTERNATE FLAPS ARM switch on the P5 panel to the ARM position to arm the alternate control system.

NOTE: The standby hydraulic pump will operate when you arm the alternate control system.

(b) Move the ALTERNATE FLAPS control switch to the DOWN position to extend the trailing edge flaps.

NOTE: The leading edge flaps and slats will extend when you extend the trailing edge flaps.

(c) Move the ALTERNATE FLAPS control switch to the UP position to retract the trailing edge flaps.

NOTE: The leading edge flaps and slats will not retract with alternate control.

(2) If the trailing edge flaps extend and retract with the alternate control, then there was an intermittent fault.

(3) If the trailing edge flaps do not extend with alternate control, then do this task: Alternate Trailing Edge Flaps Extension Problem - Fault Isolation, 27-51 TASK 838.

(4) If the trailing edge flaps do not retract with alternate control, then do this task: Alternate Trailing Edge Flaps Retraction Problem - Fault Isolation, 27-51 TASK 839.

(5) If the trailing edge flaps do not extend or retract with alternate control, then continue.

(6) Do this operational test of the trailing edge flap system with primary control:

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Use the primary system to extend and retract the flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

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(c) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) If the trailing edge flaps do not operate with the primary system, then do this task: Trailing Edge Flaps Primary Operation Problem - Fault Isolation, 27-51 TASK 836.

(e) If the trailing edge flaps operate with the primary system, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Push the ALTERNATE FLAPS ARM switch on the P5 panel to arm the alternate control system.

(2) Look at the position of the manual override lever on the trailing edge flaps bypass valve, V52.

NOTE: The trailing edge flap bypass valve should move to POSITION 2. The trailing edge flap bypass valve is installed on the aft bulkhead of the main wheel well.

(3) If the manual override lever on the bypass valve does not move to POSITION 2, then do these steps:

(a) Disconnect the electrical connector D1014 from the trailing edge flap bypass valve, V52.

(b) Do a check for 28 VDC between pin 1 of connector D1014 and structure ground.

(c) If there is not 28 VDC between pin 1 of connector D1014 and structure ground, then do this wiring check between electrical connector D1014 connector and the ALTERNATE FLAPS ARM switch, S1:

1) Disconnect electrical connector D624 at the P5-3 flight control panel.

2) Do this wiring check between electrical connector D1014 connector and connector D624 on the P5-3 panel:

D1014		D624
pin 1	- - - - - - - - - - - - - - - - - -	pin 15

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect electrical connector D1014 to the trailing edge flap bypass valve, V52.

c) Re-connect electrical connector D624 at the P5-3 flight control panel.

d) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

e) If the trailing edge flaps operate with alternate control, then you corrected the fault.

4) If you do not find a problem with the wiring, then replace the ALTERNATE FLAPS ARM switch, S1.

5) Re-connect electrical connector D1014 to the trailing edge flap bypass valve, V52.

6) Re-connect electrical connector D624 at the P5-3 flight control panel.

7) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

8) If the trailing edge flaps operate with alternate control, then you corrected the fault.

(d) If there is not 28 VDC between pin 1 of connector D1014 and structure ground, or if the flaps do not operate with alternate control, then continue.

(e) Do this test of the trailing edge flap bypass valve and the valve motor:

1) Try to manually move the manual override lever to POSITION 2.

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2) If you cannot move the manual override lever, then do these steps:
   a) Replace the trailing edge flap bypass valve, V52. These are the tasks:
      - Trailing Edge Flap Bypass Valve Assembly Removal, AMM TASK 27-51-02-000-801
      - Trailing Edge Flap Bypass Valve Assembly Installation, AMM TASK 27-51-02-400-801
   b) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.
   c) If the trailing edge flaps operate with alternate control, then you corrected the fault.
3) If the you can move the manual override lever to POSITION 2, then do these steps:
   a) Replace the trailing edge flap bypass valve motor. These are the tasks:
      - Trailing Edge Flap Bypass Valve Motor Removal, AMM TASK 27-51-02-000-803
      - Trailing Edge Flap Bypass Valve Motor Installation, AMM TASK 27-51-02-400-803
   b) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.
   c) If the trailing edge flaps operate with alternate control, then you corrected the fault.
4) If the flaps do not operate with alternate control, then continue.

(f) Re-connect the electrical connector D1014 to the trailing edge flap bypass valve, V52.
   1) Push the ALTERNATE FLAPS ARM switch to disarm the alternate control system.

(4) If the manual override lever on the bypass valve is in POSITION 2, then continue.

(5) Do this check of the electrical power to the flap electric motor, M339:
   (a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	13	C00841	FLIGHT CONTROL ALTN T.E. FLAP DRIVE

   (b) Disconnect the connector D1012 from the flap electric motor, M339.

NOTE: The flap electric motor is installed on the flap power drive unit in the main wheel well.

   (c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	13	C00841	FLIGHT CONTROL ALTN T.E. FLAP DRIVE

   (d) Make sure the ALTERNATE FLAPS ARM switch is in the arm position.
   (e) Move and hold the ALTERNATE FLAPS control switch to the UP or DOWN position.
   (f) Do a check for 3-phase 115 VAC from pins 1, 2, 3 and pin 4 (neutral) of connector D1012.
   (g) If there is 3-phase 115 VAC at pins 1, 2, 3 and 4 of connector D1012, then do these steps:
      1) Replace the flap electric motor, M339. These are the tasks:
         - Flap Electric Motor Removal, AMM TASK 27-51-53-000-801

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- Flap Electric Motor Installation, AMM TASK 27-51-53-400-801

2) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

3) If the trailing edge flaps operate with alternate control, then you corrected the fault.

(h) If there is not 3-phase 115 VAC at pins 1, 2, 3 and 4 of connector D1012, then do these steps:

1) Disconnect electrical connector D40614P from the J4 Junction Box.

NOTE: The J4 Junction box is located above the nose wheel well. The trailing edge UP relay and the trailing edge DOWN relay are installed in this junction box.

2) Move and hold the ALTERNATE FLAPS control switch to the UP or DOWN position.

3) If there is 3-phase 115 VAC at pins 1, 2, 3 and 4 of connector D40614P, then do these steps:

a) Repair the wiring between the J4 junction box and the flap electric motor, M339.

b) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

c) If the trailing edge flaps operate with alternate control, then you corrected the fault.

4) If there is not 3-phase 115 VAC at pins 1, 2, 3 and 4 of connector D40614P, then continue.

(i) Do this check for 3-phase 115 VAC at connector D40602P on the J4 junction box:

1) Disconnect electrical connector D40602P from the J4 Junction Box.

2) If there is not 3-phase 115 VAC at pins 1, 2, 3 and 4 of connector D40602P, then replace circuit breaker C841 on the P6-2 panel.

a) Re-connect electrical connectors D40602P and D40614 to the J4 Junction Box.

b) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

c) If the trailing edge flaps operate with alternate control, then you corrected the fault.

3) If there is not 3-phase 115 VAC at pins 1, 2, 3 and 4 of connector D40602P, then continue.

4) Re-connect electrical connectors D40602P and D40614 to the J4 Junction Box.

5) Disconnect electrical connector D40610P from the J4 Junction Box.

6) Do a wiring check between these pins of connector D40610P at the J4 junction box:

a) Pin 4 and pin 5

b) Pin 3 and pin 14

7) If you find a problem with the wiring, then do these steps:

a) Repair the wiring or replace the trailing edge flaps UP relay, R58 or the trailing edge flaps DOWN relay.

b) Re-connect connectors D40610P and D40614P at the J4 junction box.

c) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

d) If the trailing edge flaps operate with alternate control, then you corrected the fault.

8) If the flaps do not operate with alternate control, then continue.

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a) Replace the Trailing Edge Flaps UP relay, R58 and the Repair the wiring between the J4 junction box and the flap electric motor, M339.

b) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

c) If the trailing edge flaps operate with alternate control, then you corrected the fault.

(6) Do this check of the trailing edge flaps UP and DOWN relays in the J4 junction box:

NOTE: Electrical extend and retract signals go through both relays.

(a) Disconnect electrical connector D40610P from the J4 Junction Box.

(b) Do a wiring check between these pins of connector D40610P at the J4 junction box:

1) Pin 4 and pin 5

2) Pin 3 and pin 14

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D40610P at the J4 junction box.

3) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

4) If the trailing edge flaps operate with alternate control, then you corrected the fault.

5) If the flaps do not operate with alternate control, then continue.

(d) If you do not find a problem with the wiring, then continue.

(7) Replace the Trailing Edge Flaps UP relay, R58.

(a) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

(b) If the trailing edge flaps operate with alternate control, then you corrected the fault.

(c) If the trailing edge flaps do not operate with alternate control, then continue.

(8) Replace the Trailing Edge Flaps DOWN relay, R57.

(a) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

(b) If the trailing edge flaps operate with alternate control, then you corrected the fault.

———————— END OF TASK ————————

838. Alternate Trailing Edge Flaps Extension Problem - Fault Isolation

A. Description

(1) The trailing edge flaps did not extend with alternate control.

(2) The alternate flap controls use the ALTERNATE FLAPS ARM switch and control switch to command movement of the trailing edge flaps. The flaps are powered by the electric motor on the flap power drive unit.

B. Possible Causes

(1) TE flaps DOWN limit switch, S246

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(2) ALTERNATE FLAPS control switch, S2

(3) Alternate TE flap DOWN relay, R57

(4) Alternate TE flap UP relay, R58

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES
D	13	C00841	FLIGHT CONTROL ALTN T.E. FLAP DRIVE

D. Related Data

(1) (SSM 27-53-11)

(2) (SSM 27-53-12)

(3) (WDM 27-53-11)

(4) (WDM 27-53-12)

E. Initial Evaluation

(1) Do this operational test of the trailing edge flaps with the alternate control system:

WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS, AND THE LEADING EDGE FLAPS AND SLATS. THESE SURFACES WILL MOVE AND CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(a) Move the ALTERNATE FLAPS ARM switch on the P5 panel to the ARM position to arm the alternate control system.

NOTE: The standby hydraulic pump will operate when you arm the alternate control system.

(b) Move the ALTERNATE FLAPS control switch to the DOWN position to extend the trailing edge flaps.

NOTE: The leading edge flaps and slats will extend when you move the switch to DOWN.

(c) Move the ALTERNATE FLAPS control switch to the UP position to retract the trailing edge flaps.

NOTE: The leading edge flaps and slats will not retract with alternate control.

(2) If the trailing edge flaps extend and retract with the alternate control, then there was an intermittent fault.

(3) If the trailing edge flaps do not extend or retract with alternate control, then, do this task: Alternate Trailing Edge Flaps Operation Problem - Fault Isolation, 27-51 TASK 837.

(4) If the trailing edge flaps extend, but do not retract with alternate control, then, do this task: Alternate Trailing Edge Flaps Retraction Problem - Fault Isolation, 27-51 TASK 839.

(5) If the trailing edge flaps do not extend with alternate control, then do the Fault Isolation Procedure below.

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F. Fault Isolation Procedure

(1) Make sure the trailing edge flaps are not in the fully extended position. If the trailing edge flaps are in the fully extended position, then do this task: Retract the Trailing Edge Flaps, AMM TASK 27-51-00-860-804.

(2) Do this check of the TE flap DOWN limit switch, S246:

NOTE: The TE flap DOWN limit switch is installed on the flap control unit in the main wheel well.

(a) Disconnect the electrical connector D46044P from the junction box in the main wheel well.

(b) Do a continuity check between pin 13 on connector D46044P and structure ground.

NOTE: With the flaps not fully extended, the limit switch should provide a ground.

(c) If there is not continuity between pin 13 and structure ground, then do these steps:

1) Replace the TE flap DOWN limit switch, S246. These are the tasks:
- Flap Limit Switch Removal, AMM TASK 27-51-63-000-801
- Flap Limit Switch Installation, AMM TASK 27-51-63-400-801

2) Re-connect the electrical connector D46044P to the junction box in the main wheel well.

3) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

4) If the trailing edge flaps operate with alternate control, then you corrected the fault.

5) If the trailing edge flaps do not operate with alternate control, then continue.

(d) If there is continuity between pin 13 and structure ground, then continue.

1) Re-connect the electrical connector D46044P to the junction box in the main wheel well.

(3) Do this check of the ALTERNATE FLAPS control switch, S2:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(b) Disconnect the connector D624 for the P5-3 flight control panel.

NOTE: The ALTERNATE FLAPS control switch, S2 is installed on the P5-3 panel in the flight compartment.

(c) Move the ALTERNATE FLAPS ARM switch to the ARM position.

(d) Move and hold the ALTERNATE FLAPS control switch to the DOWN position.

(e) Do a continuity check between pin 4 and pin 16 on connector D624.

(f) If there is not continuity between pin 4 and pin 16, then do these steps:

1) Replace the ALTERNATE FLAPS control switch, S2 on the P5-3 panel.

2) Re-connect connector D624 for the P5-3 flight control panel.

3) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

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4) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

5) If the trailing edge flaps operate with alternate control, then you corrected the fault.

(g) If there is continuity between pin 4 and pin 16, then continue.

1) Re-connect connector D624 for the P5-3 flight control panel.

2) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(4) Do this check of the trailing edge flaps UP and DOWN relays in the J4 junction box:

NOTE: Electrical extend and retract signals go through both relays.

(a) Disconnect electrical connector D40610P from the J4 Junction Box.

(b) Do a wiring check between these pins of connector D40610P at the J4 junction box:

1) Pin 4 and pin 5

2) Pin 3 and pin 14

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D40610P at the J4 junction box.

3) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

4) If the trailing edge flaps operate with alternate control, then you corrected the fault.

5) If the flaps do not operate with alternate control, then continue.

(d) If you do not find a problem with the wiring, then continue.

(5) Replace the trailing edge flaps DOWN relay, R57.

(a) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

(b) If the trailing edge flaps operate with alternate control, then you corrected the fault.

(c) If the trailing edge flaps do not operate with alternate control, then continue.

(6) Replace the trailing edge flaps UP relay, R58.

(a) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

(b) If the trailing edge flaps operate with alternate control, then you corrected the fault.

——————— END OF TASK ———————

839. Alternate Trailing Edge Flaps Retraction Problem - Fault Isolation

A. Description

(1) The trailing edge flaps did not retract with alternate control.

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(2) The alternate flap controls use the ALTERNATE FLAPS ARM switch and control switch to command movement of the trailing edge flaps. The flaps are powered by the electric motor on the flap power drive unit.

B. Possible Causes

(1) TE flaps UP limit switch, S245

(2) ALTERNATE FLAPS control switch, S2

(3) Alternate TE flap UP relay, R58

(4) Alternate TE flap DOWN relay, R57

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES
D	13	C00841	FLIGHT CONTROL ALTN T.E. FLAP DRIVE

D. Related Data

(1) (SSM 27-53-11)

(2) (SSM 27-53-12)

(3) (WDM 27-53-11)

(4) (WDM 27-53-12)

E. Initial Evaluation

(1) Do this operational test of the trailing edge flaps with the alternate control system:

WARNING: MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE TRAILING EDGE FLAPS, AND THE LEADING EDGE FLAPS AND SLATS. THESE SURFACES WILL MOVE AND CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(a) Move the ALTERNATE FLAPS ARM switch on the P5 panel to the ARM position to arm the alternate control system.

NOTE: The standby hydraulic pump will operate when you arm the alternate control system.

(b) Move the ALTERNATE FLAPS control switch to the DOWN position to extend the trailing edge flaps.

NOTE: The leading edge flaps and slats will extend when you move the switch to DOWN.

(c) Move the ALTERNATE FLAPS control switch to the UP position to retract the trailing edge flaps.

NOTE: The leading edge flaps and slats will not retract with alternate control.

(2) If the trailing edge flaps extend and retract with the alternate control, then there was an intermittent fault.

(3) If the trailing edge flaps do not extend or retract with alternate control, then do this task: Alternate Trailing Edge Flaps Operation Problem - Fault Isolation, 27-51 TASK 837.

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(4) If the trailing edge flaps retract, but do not extend with alternate control, then, do this task: Alternate Trailing Edge Flaps Extension Problem - Fault Isolation, 27-51 TASK 838.

(5) If the trailing edge flaps do not retract with alternate control, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Make sure the trailing edge flaps are not in the fully retracted position. If the trailing edge flaps are in the fully retracted position, then, do this task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.

(2) Do this check of the TE flap UP limit switch, S245:

NOTE: The TE flap UP limit switch is installed on the flap control unit in the main wheel well.

(a) Disconnect the electrical connector D46044P from the junction box in the main wheel well.

(b) Do a continuity check between pin 12 on connector D46044P and structure ground.

NOTE: With the flaps not fully retracted, the limit switch should provide a ground.

(c) If there is not continuity between pin 12 and structure ground, then do these steps:

1) Replace the TE flap UP limit switch, S245. These are the tasks:
- Flap Limit Switch Removal, AMM TASK 27-51-63-000-801
- Flap Limit Switch Installation, AMM TASK 27-51-63-400-801

2) Re-connect the electrical connector D46044P to the junction box in the main wheel well.

3) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

4) If the trailing edge flaps operate with alternate control, then you corrected the fault.

5) If the trailing edge flaps do not operate with alternate control, then continue.

(d) If there is continuity between pin 12 and structure ground, then continue.

1) Re-connect the electrical connector D46044P to the junction box in the main wheel well.

(3) Do this check of the ALTERNATE FLAPS control switch, S2:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(b) Disconnect the connector D624 for the P5-3 flight control panel.

NOTE: The ALTERNATE FLAPS control switch, S2 is installed on the P5-3 panel in the flight compartment.

(c) Move the ALTERNATE FLAPS ARM switch to the ARM position.

(d) Move and hold the ALTERNATE FLAPS control switch to the UP position.

(e) Do a continuity check between pin 4 and pin 6 on connector D624.

(f) If there is not continuity between pin 4 and pin 6, then do these steps:

1) Replace the ALTERNATE FLAPS control switch, S2 on the P5-3 panel.

2) Re-connect connector D624 for the P5-3 flight control panel.

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3) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

4) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

5) If the trailing edge flaps operate with alternate control, then you corrected the fault.

(g) If there is continuity between pin 4 and pin 6, then continue.

1) Re-connect connector D624 for the P5-3 flight control panel.

2) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(4) Do this check of the trailing edge flaps UP and DOWN relays in the J4 junction box:

NOTE: Electrical extend and retract signals go through both relays.

(a) Disconnect electrical connector D40610P from the J4 Junction Box.

(b) Do a wiring check between these pins of connector D40610P at the J4 junction box:

1) Pin 4 and pin 5

2) Pin 3 and pin 14

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D40610P at the J4 junction box.

3) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

4) If the trailing edge flaps operate with alternate control, then you corrected the fault.

5) If the flaps do not operate with alternate control, then continue.

(d) If you do not find a problem with the wiring, then continue.

(5) Replace the trailing edge flaps UP relay, R58.

(a) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

(b) If the trailing edge flaps operate with alternate control, then you corrected the fault.

(c) If the trailing edge flaps do not operate with alternate control, then continue.

(6) Replace the trailing edge flaps DOWN relay, R57.

(a) Use the alternate control system to extend and retract the trailing edge flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

(b) If the trailing edge flaps operate with alternate control, then you corrected the fault.

END OF TASK

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840. Flap Position Indicator - Needle Split Problem - Fault Isolation

A. Description

(1) The flap position indicator shows the positions of the trailing edge flaps on the left and right wings.

(2) The flap position indicator gets inputs from the flap position transmitters and the FSEU.

(3) If there is an asymmetry between the flap drive on the left and right wings, then the indicator needles will be split, which shows the actual flap positions on the left and right wings. If the FSEU detects a skew in the flap drive system, then it will cause the indicator needles to show a split.

(a) A flap asymmetry or skew will cause the flap position indicator to split 10 to 20 degrees.

(4) If there is a wiring problem in the power supply to one side of the flap position transmitter, then the indicator will show a split of approximately 180 degrees.

B. Possible Causes

(1) Trailing edge flap drive system

(2) Trailing edge flap skew sensors

(3) FSEU, M1746

(4) TE flap position indicator, N54

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-52-11)

(2) (SSM 27-53-21)

(3) (WDM 27-52-11)

(4) (WDM 27-53-21)

E. Initial Evaluation

(1) If the needles on the flap position indicator are split less than 20 degrees, then do these steps:

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the FSEU shows a FLAP SKEW, FLAP SKEW CON, or TE FLAP SNSR maintenance messages, then go to the FIM task for the applicable maintenance message.

2) If the FSEU does not show a FLAP SKEW, FLAP SKEW CON, or TE FLAP SNSR maintenance messages, then continue.

(b) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

1) If the FSEU shows the TE FLAP INDICATN maintenance message, then, do this task: Flap Position Indicator Problem - Fault Isolation, 27-51 TASK 826.

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2) If the FSEU does not show the TE FLAP INDICATN maintenance message, then there was an intermittent fault.

(2) If the needles on the flap position indicator are split approximatly 180 degrees, then do these steps:

(a) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

1) If the FSEU shows L or R 28VAC EXC INV, TE FLAP SNSR maintenance messages, then go to the FIM task for the applicable maintenance message.

2) If the FSEU does not show L or R 28VAC EXC INV, TE FLAP SNSR maintenance messages, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the power supply to the left needle on the flap position indicator, T54:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(b) Disconnect connector D686 from the flap position indicator, N54 in the P2 panel.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(d) Do a check for 28 VAC between pin 8 and pin 9 (neutral) of connector D686.

(e) If there is not 28 VAC between pin 8 and pin 9 of connector D686, then do this check of the wiring:

1) Get access to the terminal block, TB1105 in the E1-1 shelf.

2) Do a wiring check between the flap position indicator, N54 and this terminal on terminal block, TB1105:

TB1105		**D686**
ZB 9	- - - - - - - - - - - - - - - - - -	pin 8

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D686 to the flap position indicator, N54.

c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

d) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

e) If the BITE test passes, then you corrected the fault.

(f) If there is 28 VAC between pin 8 and pin 9 of connector D686, then continue.

(2) Do this check of the power supply to the right needle on the flap position indicator, T54:

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(a) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(b) Do a check for 28 VAC between pin 10 and pin 9 (neutral) of connector D686.

(c) If there is not 28 VAC between pin 10 and pin 9 of connector D686, then do this check of the wiring:

1) Get access to the terminal block, TB1105 in the E1-1 shelf.

2) Do a wiring check between the flap position indicator, N54 and this terminal on terminal block, TB1105:

TB1105		D686
ZA 9	- - - - - - - - - - - - - - - - - -	pin 10

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

c) Re-connect connector D686 to the flap position indicator, N54.

d) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

e) If the BITE test passes, then you corrected the fault.

(d) If there is 28 VAC between pin 10 and pin 9 of connector D686, then continue.

(3) Replace the flap position indicator, N54. These are the tasks:
- Flap Position Indicator Removal, AMM TASK 27-58-02-000-801
- Flap Position Indicator Installation, AMM TASK 27-58-02-400-801

(a) Do this task: Trailing Edge Asymmetry Skew Indication Ground Test, 27-51 TASK 802.

(b) If the BITE test passes, then you corrected the fault.

——————— END OF TASK ———————

841. Flap Position Indicator - Needles Do Not Operate Problem - Fault Isolation

A. Description

(1) The flap position indicator shows the positions of the trailing edge flaps on the left and right wings.

(2) The flap position indicator gets inputs from the flap position transmitters and the FSEU.

B. Possible Causes

(1) TE flap position indicator, N54

(2) Wiring problem

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-52-11)

(2) (WDM 27-52-11)

E. Initial Evaluation

(1) Do this task: Trailing Edge Flap System Operational Test, AMM TASK 27-51-00-710-801.

(2) If the needles on the flap position indicator do not operate during the operational test, then do the Fault Isolation Procedure below.

(3) If the needles on the flap position indicator do operate during the operational test, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(2) Replace the flap position indicator, N54. These are the tasks:
- Flap Position Indicator Removal, AMM TASK 27-58-02-000-801
- Flap Position Indicator Installation, AMM TASK 27-58-02-400-801

(a) Do this task: Trailing Edge Flap System Operational Test, AMM TASK 27-51-00-710-801.

(b) If the needles on the flap position indicator operate, then you corrected the fault.

(c) If the needles on the flap position indicator do not operate, then continue.

(3) Do this check of the wiring between the FSEU and the flap position indicator, N54:

(a) Open these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(b) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(c) Disconnect connector D686 from the flap position indicator.

(d) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D686 at the flap position indicator, N54.

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D728B		D686
pin J10	- - - - - - - - - - - - - - - - - -	pin 12
pin J11	- - - - - - - - - - - - - - - - - -	pin 13
pin K10	- - - - - - - - - - - - - - - - - -	pin 6
pin K11	- - - - - - - - - - - - - - - - - -	pin 5

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D686 to the flap position indicator, N54.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

5) Do this task: Trailing Edge Flap System Operational Test, AMM TASK 27-51-00-710-801.

6) If the needles on the flap position indicator operate, then you corrected the fault.

(f) If you do not find a problem with the wiring, then continue.

1) Re-connect the connector D686 to the flap position indicator, N54.

2) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Trailing Edge Flap System Operational Test, AMM TASK 27-51-00-710-801.

(b) If the needles on the flap position indicator operate, then you corrected the fault.

——————— END OF TASK ———————

842. Flap Position Indicator - Needles Stick Problem - Fault Isolation

A. Description

(1) The flap position indicator shows the positions of the trailing edge flaps on the left and right wings.

(2) The flap position indicator gets inputs from the flap position transmitters and the FSEU.

B. Possible Causes

(1) TE flap position indicator, N54

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-52-11)

(2) (WDM 27-52-11)

E. Initial Evaluation

(1) Do this task: Trailing Edge Flap System Operational Test, AMM TASK 27-51-00-710-801.

(2) If the needles on the flap position indicator do not move smoothly during the operational test, then do the Fault Isolation Procedure below.

(3) If the needles on the flap position indicator do operate smoothly during the operational test, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Replace the flap position indicator, N54. These are the tasks:
- Flap Position Indicator Removal, AMM TASK 27-58-02-000-801
- Flap Position Indicator Installation, AMM TASK 27-58-02-400-801

(a) Do this task: Trailing Edge Flap System Operational Test, AMM TASK 27-51-00-710-801.

(b) If the flap position indicator operates smoothly, then you corrected the fault.

——————— END OF TASK ———————

843. Flap Control Lever Does Not Operate Freely - Fault Isolation

A. Description

(1) The flap control lever commands the flap operation with cables that go to the flap control unit.

(2) The position of the flap control lever is also monitored by the flap control lever position sensor through a mechanism assembly.

B. Possible Causes

(1) Flap control lever sticks or binds.

(2) Flap control cables WFA/WFB

(3) Flap control unit

C. Related Data

(1) (SSM 27-50-01)

D. Initial Evaluation

(1) Do this task: Flap Control Lever Force Test, AMM TASK 27-51-00-720-802.

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(2) If the force necessary to move the flap control lever is not in the limit of the test, then do the Fault Isolation Procedure below.

NOTE: The maximum permitted force necessary to move the flap control lever is 5 pounds.

(3) If the force necessary to move the flap control lever is in the limit of the test, then there was an intermittent fault.

E. Fault Isolation Procedure

(1) Lubricate the flap control lever.

(a) Mask off the area around the flap control lever to protect from overspray.

(b) Generously apply MIL-L-23398, Type II or BAC5811, Type 7 lubricant to the part of the flap control lever that slides. Use an extension straw to allow spray in hard to reach areas and to concentrate spray in localized areas.

NOTE: Allow to air dry if possible. The lubricant will dry within minutes; however, the coating will not be cured for several hours depending on the ambient temperature. The lubricant will cure within 6 hours at 77 +/- 3 degrees F (25 +/- 2 degrees C). 24 hours gives the best wear and corrosion protection.

(2) If the flap control lever no longer sticks or binds, then you corrected the fault.

(3) Do a check of the tension in the flap control cables WFA and WFB. To do a check, do this task: Trailing Edge Flap Control System Adjustment, AMM TASK 27-51-00-820-801.

(a) If the tension in the flap control cables was not in the limit, do this task: Flap Control Lever Force Test, AMM TASK 27-51-00-720-802.

1) If the force necessary to move the flap control lever is in the limit of the test, then you corrected the fault.

(b) If the tension was in the limit or if the force necessary to move the flap control lever is not in the limit of the test, then continue.

(4) Do a check of the mechanism for the flap control lever position sensor:

(a) Get access to the control lever mechanism in the right side of the control stand.

(b) Disconnect the link from the flap lever position sensor assembly.

(c) If the lever and the link for the flap lever position sensor assembly do not move freely, then do these steps:

1) Replace the flap lever position sensor assembly. These are the tasks:
- Flap Control Lever Position Sensor Removal, AMM TASK 27-51-06-000-802
- Flap Control Lever Position Sensor Installation, AMM TASK 27-51-06-400-802

2) Do this task: Flap Control Lever Force Test, AMM TASK 27-51-00-720-802.

3) If the force necessary to move the flap control lever is in the limit of the test, then you corrected the fault.

(d) If the lever and the link for the flap lever position sensor assembly move freely, then continue.

(5) Replace the flap control unit. These are the tasks:
- Flap Control Unit Removal, AMM TASK 27-51-61-000-801
- Flap Control Unit Installation, AMM TASK 27-51-61-400-801

(a) Do this task: Flap Control Lever Force Test, AMM TASK 27-51-00-720-802.

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(b) If the force necessary to move the flap control lever is in the limit of the test, then you corrected the fault.

——————— END OF TASK ———————

844. Trailing Edge Flaps Operate Fast - Fault Isolation

A. Description

(1) The trailing edge flaps use hydraulic power for normal operation.

(2) There is a flow limiter downstream of the flap priority valve that restricts the hydraulic flow to the flap hydraulic motor.

B. Possible Causes

(1) Flap flow limiter

C. Related Data

(1) (SSM 27-50-01)

D. Initial Evaluation

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF THE LE AND TE FLAPS AND FLAP DRIVE MECHANISMS. THE FLAPS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) Move the flap control lever to the UP position to make sure the flaps are retracted.

NOTE: Wait for the flaps to get to the UP position.

(3) Measure the time necessary to extend and retract the flaps:

(a) Move the flap control lever to the 1-unit position to extend the flaps.

NOTE: Measure the time it takes for the flaps to move from the UP to the 1-unit position.

(b) Move the flap control lever to the UP position to retract the flaps.

NOTE: Measure the time it takes for the flaps to move from the 1-unit to the UP position.

(4) If the time necessary to extend and retract the flaps between the UP and 1-unit position is less than 11 seconds, then do the Fault Isolation Procedure below.

(5) If the time necessary to extend and retract the flaps between the UP and 1-unit position is more than 11 seconds, then there was an intermittent fault.

(6) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

E. Fault Isolation Procedure

(1) Replace the flap flow limiter.

NOTE: The flap flow limiter is installed in the right main wheel well, next to the flap priority valve.

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(a) Measure the time necessary to extend and retract the flaps.

(b) If the time necessary to extend and retract the flaps between the UP and 1-unit position is more than 11 seconds, then you corrected the problem.

——————— END OF TASK ———————

845. Trailing Edge Flaps Operate Slow - Fault Isolation

A. Description

(1) The trailing edge flaps use hydraulic power for primary operation and electrical power for alternate operation.

(2) Hydraulic power to the flap hydraulic motor is controlled by the flap control valve, flap priority valve and the flap bypass valve.

B. Possible Causes

(1) Hydraulic flow inadequate

(2) Flap hydraulic motor

(3) Flap priority valve

(4) TE Flap control valve

(5) Flap bypass valve

(6) Flap electric motor

(7) Trailing edge flap drive system

(8) Inboard aft flap actuating mechanism

C. Related Data

(1) (SSM 27-50-01)

D. Initial Evaluation

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Use a hydraulic cart or the EDP to supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

NOTE: Make sure the hydraulic system supplies full power. The trailing edge flap system needs approximately 14 GPM to operate at the normal speed. The EMDP will not supply sufficient hydraulic power for the test.

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF THE LE AND TE FLAPS AND FLAP DRIVE MECHANISMS. THE FLAPS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) Move the flap control lever to the UP position to make sure the flaps are retracted.

NOTE: Wait for the flaps to get to the UP position.

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(3) Measure the time necessary to extend and retract the flaps with hydraulic power:

NOTE: If the time necessary to extend and retract the flaps between the UP and 1-unit position is 14 seconds or less, then it is in the limit for primary hydraulic operation.

(a) Move the flap control lever to the 1-unit position to extend the flaps.

NOTE: Measure the time it takes for the flaps to move from the UP to the 1-unit position.

(b) Move the flap control lever to the UP position to retract the flaps.

NOTE: Measure the time it takes for the flaps to move from the 1-unit to the UP position.

(4) Measure the time necessary to retract the flaps with electrical power:

NOTE: If the time necessary to retract the flaps from the 1-unit position to the UP position is 58 seconds or less, then it is in the limit for alternate electric operation.

(a) Move the flap control lever to the 1-unit position to extend the flaps.

(b) Push the ALTERNATE FLAPS ARM switch to arm the alternate control system.

(c) Move the flap control lever to the UP position.

NOTE: This will decrease the load on the flap electric motor.

(d) Turn ALTERNATE FLAPS control switch to the UP position and hold it until the flaps stop.

NOTE: Measure the time it takes for the flaps to move from the 1-unit to the UP position.

(5) If the time necessary to extend and retract the flaps is not in the limit for hydraulic and electric operation, then do the Fault Isolation Procedure - Flap Drive System below.

(6) If the time necessary to extend and retract the flaps is not in the limit for hydraulic operation, but it is in the limit for electric operation, then do the Fault Isolation Procedure - Hydraulic Operation below.

(7) If the time necessary to extend and retract the flaps is not in the limit for electric operation, but it is in the limit for hydraulic operation, then do the Fault Isolation Procedure - Electric Operation below.

(8) If the time necessary to extend and retract the flaps is in the limit for hydraulic and electric operation, then there was an intermittent fault.

(9) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

E. Fault Isolation Procedure - Hydraulic Operation

(1) If you used an EDP to supply hydraulic power, then do this check of the hydraulic flow rate:

(a) Use the EDP and the ECMP to supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801

(b) Do the check to measure the time necessary to extend and retract the flaps with the two hydraulic power sources.

(c) If the time necessary to extend and retract the flaps is significantly less than it was with only the EDP, then, do this task: System B Hydraulic Pressure Below 2850 psi Problem - Fault Isolation, 29-10 TASK 811.

(d) If the time necessary to extend and retract the flaps is not significantly different, then continue.

(e) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

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(2) Do this check of the trailing edge flap bypass valve, V52:

(a) Make sure the ALTERNATE FLAPS ARM switch is OFF.

(b) Look at the manual override lever on the trailing edge flap bypass valve.

NOTE: The trailing edge flap bypass valve is in the aft side of the right main wheel well.

(c) If the manual override lever is not fully in POSITION 1, then do these steps:

NOTE: POSITION 1 is the normal position.

1) Replace the trailing edge flap bypass valve, V52. These are the tasks:
- Trailing Edge Flap Bypass Valve Assembly Removal, AMM TASK 27-51-02-000-801
- Trailing Edge Flap Bypass Valve Assembly Installation, AMM TASK 27-51-02-400-801

2) Do the check to measure the time necessary to extend and retract the flaps with hydraulic power.

3) If the time necessary to extend and retract the flaps is in the limit, then you corrected the fault.

(d) If the manual override lever is in POSITION 1, then continue.

(3) Replace the flap priority valve. These are the tasks:
- Flap Priority Valve Removal, AMM TASK 27-51-04-000-801
- Flap Priority Valve Installation, AMM TASK 27-51-04-400-801

(a) Do the check to measure the time necessary to extend and retract the flaps with hydraulic power.

(b) If the time necessary to extend and retract the flaps is in the limit, then you corrected the fault.

(c) If the time necessary to extend and retract the flaps is not in the limit, then continue.

(4) Replace the flap hydraulic motor. These are the tasks:
- Flap Hydraulic Motor Removal, AMM TASK 27-51-52-000-801
- Flap Hydraulic Motor Installation, AMM TASK 27-51-52-400-801

(a) Do the check to measure the time necessary to extend and retract the flaps with hydraulic power.

(b) If the time necessary to extend and retract the flaps is in the limit, then you corrected the fault.

(c) If the time necessary to extend and retract the flaps is not in the limit, then continue.

(5) Replace the flap control valve. These are the tasks:
- Trailing Edge Flap Control Valve Removal, AMM TASK 27-51-65-000-801
- Trailing Edge Flap Control Valve Installation, AMM TASK 27-51-65-400-801

(a) Do the check to measure the time necessary to extend and retract the flaps with hydraulic power.

(b) If the time necessary to extend and retract the flaps is in the limit, then you corrected the fault.

F. Fault Isolation Procedure - Electric Operation

(1) Replace the flap electric motor. These are the tasks:
- Flap Electric Motor RemovalAMM TASK 27-51-53-000-801
- Flap Electric Motor InstallationAMM TASK 27-51-53-400-801

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(a) Do the check to measure the time necessary to extend and retract the flaps with electric power.

(b) If the time necessary to extend and retract the flaps is in the limit, then you corrected the fault.

G. Fault Isolation Procedure - Flap Drive System Operation

NOTE: There are likely bearings or rollers that are not operational or a jam in one of the gearboxes in the trailing edge flap drive system.

(1) Do a check of the main track rollers for the inboard and outboard flaps:

(a) Extend the trailing edge flaps to get access to the flap drive system. To extend them, do this task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.

(b) Manually turn the rollers to make sure they turn freely.

NOTE: Manually move the applicable flap to get the rollers off the flap tracks.

(c) Look at the surface of the flap tracks to see if the rollers have been sliding across the surface.

(d) If it is necessary, replace the applicable component.

1) Do the check to measure the time necessary to extend and retract the flaps with hydraulic power.

2) If the time necessary to extend and retract the flaps is in the limit, then you corrected the fault.

(e) If you do not find a problem with the rollers, then continue.

(2) Do a check of the inboard aft flap actuating mechanism:

(a) Disconnect the crankshaft from the aft flap drive rod.

(b) Manually move the crankshaft to make sure the aft flap moves freely.

NOTE: Move the aft flap through its full travel.

(c) If the aft flap does not move freely, then replace the applicable component in the aft flap actuating mechanism. These are the tasks:

- Inboard Aft Flap Actuating Mechanism Removal, AMM TASK 27-51-14-000-801
- Inboard Aft Flap Actuating Mechanism Installation, AMM TASK 27-51-14-400-801

1) Do the check to measure the time necessary to extend and retract the flaps with hydraulic power.

2) If the time necessary to extend and retract the flaps is in the limit, then you corrected the fault.

(d) If you do not find a problem with the inboard aft flap actuating mechanism, then continue.

1) Reconnect the crankshaft from the aft flap drive rod.

(3) Do this check to find where the flap drive system is jammed:

NOTE: Do these steps until you find where the flap drive system is jammed. These steps are applicable to the flap drive system on the left wing and the right wing.

(a) Do the check on these components on the flap drive system:

1) The flap transmissions.

2) The tee angle gearbox.

3) The main landing gear beam angle gearbox.

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4) The seal rib angle gearbox.

5) The torque tube support.

(b) Disconnect the torque tubes from the applicable component.

(c) Turn the torque tube couplings to see if the component is jammed.

(d) Replace the applicable component:

1) If it is necessary, replace the inboard flap inboard transmission. These are the tasks:
- Inboard Flap Inboard Transmission Removal, AMM TASK 27-51-31-000-802
- Inboard Flap Inboard Transmission Installation, AMM TASK 27-51-31-400-802

2) If it is necessary, replace the inboard flap outboard transmission. These are the tasks:
- Inboard Flap Outboard Transmission Removal, AMM TASK 27-51-31-000-801
- Inboard Flap Outboard Transmission Installation, AMM TASK 27-51-31-400-801

3) If it is necessary, replace the outboard flap inboard transmission. These are the tasks:
- Outboard Flap Inboard Transmission Removal, AMM TASK 27-51-41-000-802
- Outboard Flap Inboard Transmission Installation, AMM TASK 27-51-41-400-802

4) If it is necessary, replace the outboard flap outboard transmission. These are the tasks:
- Outboard Flap Outboard Transmission Removal, AMM TASK 27-51-41-000-801
- Outboard Flap Outboard Transmission Installation, AMM TASK 27-51-41-400-801

5) If it is necessary, replace the torque tube support. These are the tasks:
- Flap Torque Tube Support Removal, AMM TASK 27-51-59-000-801
- Flap Torque Tube Support Installation, AMM TASK 27-51-59-400-801

6) If it is necessary, replace the seal rib angle gearbox. These are the tasks:
- Seal Rib Angle Gearbox Removal, AMM TASK 27-51-57-000-801
- Seal Rib Angle Gearbox Installation, AMM TASK 27-51-57-400-801

7) If it is necessary, replace the main landing gear beam angle gearbox. These are the tasks:
- Main Landing Gear Beam Angle Gearbox Removal, AMM TASK 27-51-56-000-801
- Main Landing Gear Beam Angle Gearbox Installation, AMM TASK 27-51-56-400-801

8) If it is necessary, replace the tee angle gearbox. These are the tasks:
- Tee Angle Gearbox Removal, AMM TASK 27-51-55-000-801
- Tee Angle Gearbox Installation, AMM TASK 27-51-55-400-801

(e) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

NOTE: The adjustment procedure will include reconnecting the torque tubes.

(f) Do the check to measure the time necessary to extend and retract the flaps with hydraulic power.

(g) If the time necessary to extend and retract the flaps is in the limit, then you corrected the fault.

——————— END OF TASK ———————

846. Invalid Airspeed Data Input to FSEU Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-54403 A/S DATA INVALID

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(2) During the Existing Faults ground test, or the TE Flap Load Relief ground test, the FSEU did not receive valid airspeed data from the Left ADIRU over the ARINC 429 bus.

B. Possible Causes

(1) Left ADIRU, M1749

(2) FSEU, M1746

C. Related Data

(1) (SSM 27-54-11)

(2) (SSM 34-21-14)

(3) (WDM 27-54-11)

(4) (WDM 34-21-14)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this task: ADIRS BITE Procedure, 34-21 TASK 801.

(a) If any maintenance messages for the ADIRU show, then do the fault isolation task for those procedures.

(b) If no maintenance messages for the ADIRU show, then continue.

(2) Replace the FSEU, M1746. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

847. Alternate Arm Switch Position Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-51402 ALT MODE IS ARMED

(b) 27-51403 ALT ARM SW DISAG

(2) During a ground test the inputs to the FSEU from the ALTERNATE FLAPS ARM switch were not correct. There are two inputs from the ALTERNATE FLAPS ARM switch to the FSEU.

B. Possible Causes

(1) Alternate flaps arm switch, S1

(2) FSEU, M1746

(3) Wiring problem

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

D. Related Data

(1) (SSM 27-53-11)

(2) (WDM 27-53-11)

E. Initial Evaluation

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(2) Make sure the ALTERNATE FLAPS ARM switch is in OFF position.

(3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(4) If the maintenance message does not show, then there was an intermittent fault.

(5) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the ALTERNATE FLAPS ARM switch, S1:

NOTE: The ALTERANTE FLAPS ARM switch is installed in the P5-3 panel.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(b) Disconnect the connector D624 on the P5-3 panel.

(c) Do a continuity check between pin 4 and these other pins of connector D624.

1) Pin 5 should have continuity

2) Pin 33 should be open

(d) If the continuity between the pins is not in the condition specified, then do these steps:

1) Replace the ALTERNATE FLAPS ARM switch, S1.

2) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

5) If the maintenance message shows, then continue.

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(e) If the continuity between the pins is in the condition specified, then continue.

(2) Do this check of the wiring between the FSEU and the ALTERNATE FLAPS ARM switch:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D624 at the P5-3 panel:

D728B		D624
pin B1	- - - - - - - - - - - - - - - - - -	pin 33

(c) Do a wiring check between these pins of connector D728C at the E1-1 shelf and connector D624 at the P5-3 panel:

D728C		D624
pin 8	- - - - - - - - - - - - - - - - - -	pin 5

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D624 at the P5-3 panel.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If you do not find a problem with the wiring, then continue:

1) Re-connect the connector D624 at the P5-3 panel.

(3) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

848. Flap Failed to Extend During Test Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51407 TE FAIL TO DRIVE

(2) During the load relief ground test, the trailing edge flaps did not extend to the 40-unit position. The FSEU uses inputs from the flap position sensors to find if the flaps moved to the 40-unit position.

B. Possible Causes

(1) Flap drive system

(2) Left flap position transmitter, T427

(3) Right flap position transmitter, T428

(4) FSEU, M1746

(5) Wiring problem

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-52-11)

(2) (WDM 27-52-11)

E. Initial Evaluation

(1) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

NOTE: Use a hydraulic service cart, or use the engine driven pump to supply hydraulic power.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then continue.

(4) Do this operational test of the trailing edge flap system with primary control:

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Use the primary system to fully extend and retract the flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

(c) Remove system B hydraulic power. To remove it, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) If the trailing edge flaps do not operate with the primary system, then do this task: Trailing Edge Flaps Primary Operation Problem - Fault Isolation, 27-51 TASK 836.

(e) If the trailing edge flaps operate with the primary system, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the flap position transmitters:

(a) Use the alternate system to move the trailing edge flaps to see if the flap position indicator needles follow the flap position. To move the flaps with the alternate system, do this task: Trailing Edge Flap System Operation With Alternate Control, AMM TASK 27-51-00-860-802.

(2) If the left and right flap position indicator needles follow the position of the flaps, then do these steps:

(a) Replace the FSEU, M1746. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

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(b) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(c) If the maintenance message shows, then continue.

(3) If the left flap position indicator needle does not follow the position of the flaps, then do these steps:

(a) Replace the left flap position transmitter, T427 on the No. 1 transmission. These are the tasks:

- Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801
- Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801

NOTE: Make sure the flap position transmitter is adjusted correctly when you install it.

(b) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(c) If the left flap position indicator needle follows the position of the flap, or if maintenance message shows, then continue.

(4) If the right flap position indicator needle does not follow the position of the flaps, then do these steps:

(a) Replace the right flap position transmitter, T428 on the No. 8 transmission. These are the tasks:

- Flap Position Transmitter Removal, AMM TASK 27-58-01-000-801
- Flap Position Transmitter Installation, AMM TASK 27-58-01-400-801

NOTE: Make sure the flap position transmitter is adjusted correctly when you install it.

(b) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(c) If the right flap position indicator needle follows the position of the flap, or if maintenance message shows, then continue.

(5) Do this check of the wiring between the FSEU and the left flap position transmitter, T427:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect connector D275 from the left flap position transmitter, T427.

(c) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D275 at the left flap position transmitter, T427:

D728B		D275
pin K7	- - - - - - - - - - - - - - - - - -	pin 1
pin K8	- - - - - - - - - - - - - - - - - -	pin 2

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D275 to the left flap position transmitter, T427.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

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

(e) If you do not find a problem with the wiring, then continue.

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1) Re-connect the connector D275 to the left flap position transmitter, T427.

(6) Do this check of the wiring between the FSEU and the right flap position transmitter, T428:

(a) Disconnect connector D229 from the right flap position transmitter, T428.

(b) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D229 at the right flap position transmitter, T428:

D728B	D229
pin J7	pin 1
pin J8	pin 2

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D229 to the right flap position transmitter, T428.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Trailing Edge Flap Load Relief Ground Test, 27-51 TASK 803.

5) If the maintenance message does not show, then you corrected the fault. Do these steps to complete this task:

a) Re-connect the connector D229 to the right flap position transmitter, T428.

b) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

——————— END OF TASK ———————

849. Trailing Edge Flaps Transmission Torque Trip Indicator Extended - Fault Isolation

A. Description

(1) There are torque trip indicators installed on the forward side of the trailing edge flap transmissions.

(2) The torque trip indicators extend when the torque through the transmission is too high. This can occur if a flap drive system is jammed, during rigging, or intermittently during normal operation.

(3) The trailing edge flaps can operate normally with the torque trip indicators extended.

B. Possible Causes

(1) Trailing edge flap drive system

C. Initial Evaluation

(1) Do this operational test of the trailing edge flap system with primary control:

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Use the primary system to fully extend and retract the flaps. To extend and retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

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(c) Remove system B hydraulic power. To remove it, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) If the trailing edge flaps operate with the primary system, then there is no fault. Do the Reset the Torque Trip Indicators Procedure below.

(e) If the trailing edge flaps do not operate with the primary system, then continue.

(2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(a) If the FSEU shows a maintenance message, then go to the FIM task for the applicable maintenance message.

(b) If the FSEU does not show a maintenance message, then do the fault isolation task for trailing edge flaps primary operation problem. To isolate the fault, do this task: Trailing Edge Flaps Primary Operation Problem - Fault Isolation, 27-51 TASK 836.

D. Reset the Torque Trip Indicators Procedure

NOTE: There was likely an intermittent high torque situation on the transmission with the extended torque trip indicator. You can reset the torque trip indicator.

(1) If it is necessary to get access to the torque trip indicator, extend the trailing edge flaps. To extend them, do this task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.

(2) Push the plunger on the torque trip indicator to reset it.

(3) If it is necessary, retract the flaps. To retract the flaps, do this task: Trailing Edge Flap System Operation With Primary Control, AMM TASK 27-51-00-860-801.

——————— END OF TASK ———————

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801. TE Flap Support No. 1 Skew Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53250 FLAP 1 SKEW

(2) The signal to the FSEU from the No. 1 flap skew sensor does not agree with the signals from the left flap position transmitter and the No. 8 flap skew sensor.

B. Possible Causes

(1) No. 1 flap skew mechanism

(2) No. 1 flap skew sensor, T525

(3) No. 1 flap support

(4) FSEU, M1746

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-53409 FLAP 1 SKEW CON shows, then do the Fault Isolation Procedure for that fault, do this task: TE Flap Support No. 1 Skew Sensor Problem - Fault Isolation, 27-59 TASK 810.

(3) If the maintenance message 27-53250 FLAP 1 SKEW does not show, then there was an intermittent fault.

(4) If the maintenance message 27-53250 FLAP 1 SKEW shows, then continue.

(5) Do this check of the No. 1 and No. 8 flap drives to find if there is a skew:

(a) If the flaps are retracted, remove the aft fairings on flap supports No. 1 and 8. To remove the aft fairings, do this task: Outboard Flap Outboard Support Aft Fairing Removal, AMM TASK 27-51-28-000-802.

(b) Measure and record the distance from the ballscrew nut to the yoke on transmissions No. 1 and No. 8.

(c) If the distances from the ballscrew nuts to the yokes are the same ±0.3 inch, then do the Fault Isolation Procedure - Flap Not Skewed below.

NOTE: If the distances are in the limit, then the flap is not skewed.

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(d) If the distances from the ballscrew nuts to the yokes are not the same ±0.3 inch, then do the Fault Isolation Procedure - Flap Skewed below.

NOTE: If the distances are not in the limit, then the flap is skewed.

F. Fault Isolation Procedure - Flap Skewed

(1) Visually examine these components on flap support No. 1 and replace those that have damage:

(a) The ballscrew and gimbal. These are the tasks:
- Outboard Flap Outboard Ballscrew and Gimbal Removal, AMM TASK 27-51-42-000-801
- Outboard Flap Outboard Ballscrew and Gimbal Installation, AMM TASK 27-51-42-400-801

(b) The transmission. These are the tasks:
- Outboard Flap Outboard Transmission Removal, AMM TASK 27-51-41-000-801
- Outboard Flap Outboard Transmission Installation, AMM TASK 27-51-41-400-801

(c) The carriage and rollers. These are the tasks:
- Outboard Flap Outboard Carriage Removal, AMM TASK 27-51-23-000-801
- Outboard Flap Outboard Carriage Installation, AMM TASK 27-51-23-400-801

(d) The flap track. These are the tasks:
- Outboard Flap Outboard Track Removal, AMM TASK 27-51-25-000-801
- Outboard Flap Outboard Track Installation, AMM TASK 27-51-25-400-801

(e) If you replaced one of the components above, then do these steps:

1) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If the maintenance message shows, then continue.

(f) If there was no visible damage, then continue.

(2) Do this check of the operation of the No. 1 flap drive system:

(a) Disconnect the torque tube from the transmission. To disconnect the torque tube, do this task: Outboard Wing Flap Torque Tube Removal, AMM TASK 27-51-58-000-801.

(b) Turn the torque tube coupling on the transmission to see if the No. 1 flap drive system moves.

(c) If you cannot move the flap drive system, then do these steps:

1) Replace the applicable parts.

2) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

5) If the maintenance message shows, then continue.

(d) If you can move the flap drive system, then continue.

(3) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

NOTE: This task will include steps to connect the torque tube to the transmission.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

G. Fault Isolation Procedure - Flap Not Skewed

(1) Adjust the outboard flap outboard skew sensor mechanism. To adjust the skew sensor mechanism, do this task: Flap Skew Detection System Adjustment, AMM TASK 27-59-00-820-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Replace the flap skew sensor, T525 on flap support No. 1. These are the tasks:

- Outboard Flap Outboard Skew Sensor Removal, AMM TASK 27-59-01-000-801
- Outboard Flap Outboard Skew Sensor Installation, AMM TASK 27-59-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 1:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin H13 and pin H14

2) Pin H14 and pin H15

3) Pin H15 and pin H13.

(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11814 from the flap skew sensor, T525.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11814 at the flap skew sensor, T525:

D728B		D11814
pin H13	- - - - - - - - - - - - - - - -	pin 4
pin H14	- - - - - - - - - - - - - - - -	pin 5
pin H15	- - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector D11814 to the flap skew sensor, T525.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(4) Do this check of the power supply to the flap skew sensor on flap support No. 1:

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(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(b) Disconnect connector D11814 from the flap skew sensor, T525.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(d) Do a check for 28 VAC between pin 1 and pin 2 of connector D11814.

(e) If there is not 28 VAC between pin 1 and pin 2 of connector D11814, then do this check of the wiring:

1) Disconnect connector D11816 from the flap skew sensor, T526 at flap support No. 2.

2) Do a wiring check between these pins of the flap skew sensor, T525 and flap skew sensor, T526:

D11814		**D11816**
pin 1	- - - - - - - - - - - - - - - - - -	pin 7
pin 2	- - - - - - - - - - - - - - - - - -	pin 6

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11814 to the flap skew sensor, T525.

c) Re-connect connector D11816 to the flap skew sensor, T526.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If there is 28 VAC between pin 1 and pin 2 of connector D11814, then continue.

1) Re-connect the connector D11814 to the flap skew sensor, T525.

(5) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

802. TE Flap Support No. 2 Skew Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53251 FLAP 2 SKEW

(2) The signal to the FSEU from the No. 2 flap skew sensor does not agree with the signals from the left flap position transmitter and the No. 7 flap skew sensor.

B. Possible Causes

(1) No. 2 flap skew mechanism

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(2) No. 2 flap skew sensor, T526

(3) No. 2 flap support

(4) FSEU, M1746

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-53410 FLAP 2 SKEW CON shows, then do the Fault Isolation Procedure for that fault, do this task: TE Flap Support No. 2 Skew Sensor Problem - Fault Isolation, 27-59 TASK 811.

(3) If the maintenance message 27-53251 FLAP 2 SKEW does not show, then there was an intermittent fault.

(4) If the maintenance message 27-53251 FLAP 2 SKEW shows, then continue.

(5) Do this check of the No. 2 and No. 7 flap drives to find if there is a skew:

(a) If the flaps are retracted, remove the aft fairings on flap supports No. 2 and 7. To remove the aft fairings, do this task: Outboard Flap Inboard Support Aft Fairing Removal, AMM TASK 27-51-28-000-804.

(b) Measure and record the distance from the ballscrew nut to the yoke on transmissions No. 2 and No. 7.

(c) If the distances from the ballscrew nuts to the yokes are the same ±0.5 inch, then do the Fault Isolation Procedure - Flap Not Skewed below.

NOTE: If the distances are in the limit, then the flap is not skewed.

(d) If the distances from the ballscrew nuts to the yokes are not the same ±0.5 inch, then do the Fault Isolation Procedure - Flap Skewed below.

NOTE: If the distances are not in the limit, then the flap is skewed.

F. Fault Isolation Procedure - Flap Skewed

(1) Visually examine these components on flap support No. 2 and replace those that have damage:

(a) The ballscrew and gimbal. These are the tasks:

- Outboard Flap Inboard Ballscrew and Gimbal Removal, AMM TASK 27-51-42-000-802
- Outboard Flap Inboard Ballscrew and Gimbal Installation, AMM TASK 27-51-42-400-802

(b) The transmission. These are the tasks:

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- Outboard Flap Inboard Transmission Removal, AMM TASK 27-51-41-000-802
- Outboard Flap Inboard Transmission Installation, AMM TASK 27-51-41-400-802

(c) The carriage and rollers. These are the tasks:
- Outboard Flap Inboard Carriage Removal, AMM TASK 27-51-23-000-802
- Outboard Flap Inboard Carriage Installation, AMM TASK 27-51-23-400-802

(d) The flap track. These are the tasks:
- Outboard Flap Inboard Track Removal, AMM TASK 27-51-25-000-802
- Outboard Flap Inboard Track Installation, AMM TASK 27-51-25-400-802

(e) If you replaced one of the components above, then do these steps:
1) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.
2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
3) If the maintenance message does not show, then you corrected the fault.
4) If the maintenance message shows, then continue.

(f) If there was no visible damage, then continue.

(2) Do this check of the operation of the No. 2 flap drive system:

(a) Disconnect the torque tubes from the transmission. To disconnect the torque tubes, do this task: Outboard Wing Flap Torque Tube Removal, AMM TASK 27-51-58-000-801.

(b) Turn the torque tube coupling on the transmission to see if the No. 2 flap drive system moves.

(c) If you cannot move the flap drive system, then do these steps:
1) Replace the applicable parts.
2) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.
3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
4) If the maintenance message does not show, then you corrected the fault.
5) If the maintenance message shows, then continue.

(d) If you can move the flap drive system, then continue.

(3) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

NOTE: This task will include steps to connect the torque tube to the transmission.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

G. Fault Isolation Procedure - Flap Not Skewed

(1) Adjust the outboard flap inboard skew sensor mechanism. To adjust the skew sensor mechanism, do this task: Flap Skew Detection System Adjustment, AMM TASK 27-59-00-820-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
1) If the maintenance message does not show, then you corrected the fault.
2) If the maintenance message shows, then continue.

(2) Replace the flap skew sensor, T526 on flap support No. 2. These are the tasks:
- Outboard Flap Inboard Skew Sensor Removal, AMM TASK 27-59-01-000-802
- Outboard Flap Inboard Skew Sensor Installation, AMM TASK 27-59-01-400-802

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(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 2:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin G13 and pin G14

2) Pin G14 and pin G15

3) Pin G15 and pin G13.

(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11816 from the flap skew sensor, T526.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11816 at the flap skew sensor, T526:

D728B		D11816
pin G13	- - - - - - - - - - - - - - - -	pin 4
pin G14	- - - - - - - - - - - - - - - -	pin 5
pin G15	- - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11816 to the flap skew sensor, T526.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

a) Re-connect the connector D11816 to the flap skew sensor, T526.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

803. TE Flap Support No. 3 Skew Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53252 FLAP 3 SKEW

(2) The signal to the FSEU from the No. 3 flap skew sensor does not agree with the signals from the left flap position transmitter and the No. 6 flap skew sensor.

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B. Possible Causes

(1) No. 3 flap skew mechanism

(2) No. 3 flap skew sensor, T527

(3) No. 3 flap support

(4) FSEU, M1746

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-53411 FLAP 3 SKEW CON shows, then do the Fault Isolation Procedure for that fault, do this task: TE Flap Support No. 3 Skew Sensor Problem - Fault Isolation, 27-59 TASK 812.

(3) If the maintenance message 27-53252 FLAP 3 SKEW does not show, then there was an intermittent fault.

(4) If the maintenance message 27-53252 FLAP 3 SKEW shows, then continue.

(5) Do this check of the No. 3 and No. 6 flap drives to find if there is a skew:

(a) If the flaps are retracted, remove the aft fairings on flap supports No. 3 and 6. To remove the aft fairings, do this task: Inboard Flap Support Aft Fairing Removal, AMM TASK 27-51-18-000-802.

(b) Measure and record the distance from the ballscrew nut to the yoke on transmissions No. 3 and No. 6.

(c) If the distances from the ballscrew nuts to the yokes are the same ±0.3 inch, then do the Fault Isolation Procedure - Flap Not Skewed below.

NOTE: If the distances are in the limit, then the flap is not skewed.

(d) If the distances from the ballscrew nuts to the yokes are not the same ±0.3 inch, then do the Fault Isolation Procedure - Flap Skewed below.

NOTE: If the distances are not in the limit, then the flap is skewed.

F. Fault Isolation Procedure - Flap Skewed

(1) Visually examine these components on flap support No. 3 and replace those that have damage:

(a) The ballscrew and gimbal. These are the tasks:

- Inboard Flap Outboard Ballscrew and Gimbal Removal, AMM TASK 27-51-32-000-801

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- Inboard Flap Outboard Ballscrew and Gimbal Installation, AMM TASK 27-51-32-400-801

(b) The transmission. These are the tasks:
- Inboard Flap Outboard Transmission Removal, AMM TASK 27-51-31-000-801
- Inboard Flap Outboard Transmission Installation, AMM TASK 27-51-31-400-801

(c) The carriage and rollers. These are the tasks:
- Inboard Flap Outboard Carriage Removal, AMM TASK 27-51-13-000-801
- Inboard Flap Outboard Carriage Installation, AMM TASK 27-51-13-400-801

(d) The flap track. These are the tasks:
- Inboard Flap Outboard Track Removal, AMM TASK 27-51-15-000-801
- Inboard Flap Outboard Track Installation, AMM TASK 27-51-15-400-801

(e) If you replaced one of the components above, then do these steps:
1) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.
2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
3) If the maintenance message does not show, then you corrected the fault.
4) If the maintenance message shows, then continue.

(f) If there was no visible damage, then continue.

(2) Do this check of the operation of the No. 3 flap drive system:
(a) Disconnect the torque tubes from the transmission. To disconnect the torque tubes, do this task: Inboard Wing Flap Torque Tube Removal, AMM TASK 27-51-58-000-802.
(b) Turn the torque tube coupling on the transmission to see if the No. 3 flap drive system moves.
(c) If you cannot move the flap drive system, then do these steps:
1) Replace the applicable parts.
2) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.
3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
4) If the maintenance message does not show, then you corrected the fault.
5) If the maintenance message shows, then continue.
(d) If you can move the flap drive system, then continue.

(3) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

NOTE: This task will include steps to connect the torque tube to the transmission.
(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
(b) If the maintenance message does not show, then you corrected the fault.

G. Fault Isolation Procedure - Flap Not Skewed

(1) Adjust the inboard flap outboard skew sensor mechanism. To adjust the skew sensor mechanism, do this task: Flap Skew Detection System Adjustment, AMM TASK 27-59-00-820-801.
(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
1) If the maintenance message does not show, then you corrected the fault.
2) If the maintenance message shows, then continue.

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(2) Replace the flap skew sensor, T527 on flap support No. 3. These are the tasks:
- Inboard Flap Outboard Skew Sensor Removal, AMM TASK 27-59-01-000-803
- Inboard Flap Outboard Skew Sensor Installation, AMM TASK 27-59-01-400-803

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 3:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin F13 and pin F14

2) Pin F14 and pin F15

3) Pin F15 and pin F13.

(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11818 from the flap skew sensor, T527.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11818 at the flap skew sensor, T527:

D728B		D11818
pin F13	- - - - - - - - - - - - - - - - -	pin 4
pin F14	- - - - - - - - - - - - - - - - -	pin 5
pin F15	- - - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11818 to the flap skew sensor, T527.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

a) Re-connect the connector D11818 to the flap skew sensor, T527.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

804. TE Flap Support No. 4 Skew Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53253 FLAP 4 SKEW

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(2) The signal to the FSEU from the No. 4 flap skew sensor does not agree with the signals from the left flap position transmitter and the No. 5 flap skew sensor.

B. Possible Causes

(1) No. 4 flap skew mechanism

(2) No. 4 flap skew sensor, T528

(3) No. 4 flap support

(4) FSEU, M1746

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-53412 FLAP 4 SKEW CON shows, then do the Fault Isolation Procedure for that fault, do this task: TE Flap Support No. 4 Skew Sensor Problem - Fault Isolation, 27-59 TASK 813.

(3) If the maintenance message 27-53253 FLAP 4 SKEW does not show, then there was an intermittent fault.

(4) If the maintenance message 27-53253 FLAP 4 SKEW shows, then continue.

(5) Do this check of the No. 4 and No. 5 flap drives to find if there is a skew:

(a) Measure and record the distance from the ballscrew nut to the yoke on transmissions No. 4 and No. 5.

(b) If the distances from the ballscrew nuts to the yokes are the same ±0.2 inch, then do the Fault Isolation Procedure - Flap Not Skewed below.

NOTE: If the distances are in the limit, then the flap is not skewed.

(c) If the distances from the ballscrew nuts to the yokes are not the same ±0.2 inch, then do the Fault Isolation Procedure - Flap Skewed below.

NOTE: If the distances are not in the limit, then the flap is skewed.

F. Fault Isolation Procedure - Flap Skewed

(1) Visually examine these components on flap support No. 4 and replace those that have damage:

(a) The ballscrew and gimbal. These are the tasks:

- Inboard Flap Inboard Ballscrew and Gimbal Removal, AMM TASK 27-51-32-000-802

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- Inboard Flap Inboard Ballscrew and Gimbal Installation, AMM TASK 27-51-32-400-802

(b) The transmission. These are the tasks:
- Inboard Flap Inboard Transmission Removal, AMM TASK 27-51-31-000-802
- Inboard Flap Inboard Transmission Installation, AMM TASK 27-51-31-400-802

(c) The carriage and rollers. These are the tasks:
- Inboard Flap Inboard Carriage Removal, AMM TASK 27-51-13-000-802
- Inboard Flap Inboard Carriage Installation, AMM TASK 27-51-13-400-802

(d) The flap track. These are the tasks:
- Inboard Flap Inboard Track Removal, AMM TASK 27-51-15-000-802
- Inboard Flap Inboard Track Installation, AMM TASK 27-51-15-400-802

(e) If you replaced one of the components above, then do these steps:
1) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.
2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
3) If the maintenance message does not show, then you corrected the fault.
4) If the maintenance message shows, then continue.

(f) If there was no visible damage, then continue.

(2) Do this check of the operation of the No. 4 flap drive system:
(a) Disconnect the torque tubes from the transmission. To disconnect the torque tubes, do this task: Wheel Well Flap Torque Tube Removal, AMM TASK 27-51-58-000-803.
(b) Turn the torque tube coupling on the transmission to see if the No. 4 flap drive system moves.
(c) If you cannot move the flap drive system, then do these steps:
1) Replace the applicable parts.
2) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.
3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
4) If the maintenance message does not show, then you corrected the fault.
5) If the maintenance message shows, then continue.
(d) If you can move the flap drive system, then continue.

(3) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

NOTE: This task will include steps to connect the torque tube to the transmission.
(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
(b) If the maintenance message does not show, then you corrected the fault.

G. Fault Isolation Procedure - Flap Not Skewed

(1) Adjust the inboard flap inboard skew sensor mechanism. To adjust the skew sensor mechanism, do this task: Flap Skew Detection System Adjustment, AMM TASK 27-59-00-820-801.
(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
1) If the maintenance message does not show, then you corrected the fault.
2) If the maintenance message shows, then continue.

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(2) Replace the flap skew sensor, T528 on flap support No. 4. These are the tasks:
- Inboard Flap Inboard Skew Sensor Removal, AMM TASK 27-59-01-000-804
- Inboard Flap Inboard Skew Sensor Installation, AMM TASK 27-59-01-400-804

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 4:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin E13 and pin E14

2) Pin E14 and pin E15

3) Pin E15 and pin E13.

(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11820 from the flap skew sensor, T528.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11820 at the flap skew sensor, T528:

D728B		D11820
pin E13	- - - - - - - - - - - - - - - - -	pin 4
pin E14	- - - - - - - - - - - - - - - - -	pin 5
pin E15	- - - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11820 to the flap skew sensor, T528.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

a) Re-connect the connector D11820 to the flap skew sensor, T528.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

END OF TASK

805. TE Flap Support No. 5 Skew Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53254 FLAP 5 SKEW

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(2) The signal to the FSEU from the No. 5 flap skew sensor does not agree with the signals from the right flap position transmitter and the No. 4 flap skew sensor.

B. Possible Causes

(1) No. 5 flap skew mechanism

(2) No. 5 flap skew sensor, T529

(3) No. 5 flap support

(4) FSEU, M1746

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-53413 FLAP 5 SKEW CON shows, then do the Fault Isolation Procedure for that fault, do this task: TE Flap Support No. 5 Skew Sensor Problem - Fault Isolation, 27-59 TASK 814.

(3) If the maintenance message 27-53254 FLAP 5 SKEW does not show, then there was an intermittent fault.

(4) If the maintenance message 27-53254 FLAP 5 SKEW shows, then continue.

(5) Do this check of the No. 4 and No. 5 flap drives to find if there is a skew:

(a) Measure and record the distance from the ballscrew nut to the yoke on transmissions No. 4 and No. 5.

(b) If the distances from the ballscrew nuts to the yokes are the same ±0.2 inch, then do the Fault Isolation Procedure - Flap Not Skewed below.

NOTE: If the distances are in the limit, then the flap is not skewed.

(c) If the distances from the ballscrew nuts to the yokes are not the same ±0.2 inch, then do the Fault Isolation Procedure - Flap Skewed below.

NOTE: If the distances are not in the limit, then the flap is skewed.

F. Fault Isolation Procedure - Flap Skewed

(1) Visually examine these components on flap support No. 5 and replace those that have damage:

(a) The ballscrew and gimbal. These are the tasks:

- Inboard Flap Inboard Ballscrew and Gimbal Removal, AMM TASK 27-51-32-000-802

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- Inboard Flap Inboard Ballscrew and Gimbal Installation, AMM TASK 27-51-32-400-802

(b) The transmission. These are the tasks:
- Inboard Flap Inboard Transmission Removal, AMM TASK 27-51-31-000-802
- Inboard Flap Inboard Transmission Installation, AMM TASK 27-51-31-400-802

(c) The carriage and rollers. These are the tasks:
- Inboard Flap Inboard Carriage Removal, AMM TASK 27-51-13-000-802
- Inboard Flap Inboard Carriage Installation, AMM TASK 27-51-13-400-802

(d) The flap track. These are the tasks:
- Inboard Flap Inboard Track Removal, AMM TASK 27-51-15-000-802
- Inboard Flap Inboard Track Installation, AMM TASK 27-51-15-400-802

(e) If you replaced one of the components above, then do these steps:
1) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.
2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
3) If the maintenance message does not show, then you corrected the fault.
4) If the maintenance message shows, then continue.

(f) If there was no visible damage, then continue.

(2) Do this check of the operation of the No. 5 flap drive system:
(a) Disconnect the torque tubes from the transmission. To disconnect the torque tubes, do this task: Wheel Well Flap Torque Tube Removal, AMM TASK 27-51-58-000-803.
(b) Turn the torque tube coupling on the transmission to see if the No. 5 flap drive system moves.
(c) If you cannot move the flap drive system, then do these steps:
1) Replace the applicable parts.
2) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.
3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
4) If the maintenance message does not show, then you corrected the fault.
5) If the maintenance message shows, then continue.
(d) If you can move the flap drive system, then continue.

(3) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

NOTE: This task will include steps to connect the torque tube to the transmission.
(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
(b) If the maintenance message does not show, then you corrected the fault.

G. Fault Isolation Procedure - Flap Not Skewed

(1) Adjust the inboard flap inboard skew sensor mechanism. To adjust the skew sensor mechanism, do this task: Flap Skew Detection System Adjustment, AMM TASK 27-59-00-820-801.
(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
1) If the maintenance message does not show, then you corrected the fault.
2) If the maintenance message shows, then continue.

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(2) Replace the flap skew sensor, T529 on flap support No. 5. These are the tasks:
- Inboard Flap Inboard Skew Sensor Removal, AMM TASK 27-59-01-000-804
- Inboard Flap Inboard Skew Sensor Installation, AMM TASK 27-59-01-400-804

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 5:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect connector D11822 from the flap skew sensor, T529.

(c) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin D13 and pin D14

2) Pin D14 and pin D15

3) Pin D15 and pin D13.

(d) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11822 at the flap skew sensor, T529:

D728B		D11820
pin D13	- - - - - - - - - - - - - - - -	pin 4
pin D14	- - - - - - - - - - - - - - - -	pin 5
pin D15	- - - - - - - - - - - - - - - -	pin 3

2) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11822 to the flap skew sensor, T529.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

3) If you did not find a problem with the wiring, then continue.

a) Re-connect the connector D11822 to the flap skew sensor, T529.

(e) If the resistances are in the range of 5-10 ohms, then continue.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

806. TE Flap Support No. 6 Skew Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53255 FLAP 6 SKEW

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(2) The signal to the FSEU from the No. 6 flap skew sensor does not agree with the signals from the right flap position transmitter and the No. 3 flap skew sensor.

B. Possible Causes

(1) No. 6 flap skew mechanism

(2) No. 6 flap skew sensor, T530

(3) No. 6 flap support

(4) FSEU, M1746

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-53414 FLAP 6 SKEW CON shows, then do the Fault Isolation Procedure for that fault, do this task: TE Flap Support No. 6 Skew Sensor Problem - Fault Isolation, 27-59 TASK 815.

(3) If the maintenance message 27-53255 FLAP 6 SKEW does not show, then there was an intermittent fault.

(4) If the maintenance message 27-53255 FLAP 6 SKEW shows, then continue.

(5) Do this check of the No. 3 and No. 6 flap drives to find if there is a skew:

(a) If the flaps are retracted, remove the aft fairings on flap supports No. 3 and 6. To remove the aft fairings, do this task: Inboard Flap Support Aft Fairing Removal, AMM TASK 27-51-18-000-802.

(b) Measure and record the distance from the ballscrew nut to the yoke on transmissions No. 3 and No. 6.

(c) If the distances from the ballscrew nuts to the yokes are the same ±0.3 inch, then do the Fault Isolation Procedure - Flap Not Skewed below.

NOTE: If the distances are in the limit, then the flap is not skewed.

(d) If the distances from the ballscrew nuts to the yokes are not the same ±0.3 inch, then do the Fault Isolation Procedure - Flap Skewed below.

NOTE: If the distances are not in the limit, then the flap is skewed.

F. Fault Isolation Procedure - Flap Skewed

(1) Visually examine these components on flap support No. 6 and replace those that have damage:

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(a) The ballscrew and gimbal. These are the tasks:
- Inboard Flap Outboard Ballscrew and Gimbal Removal, AMM TASK 27-51-32-000-801
- Inboard Flap Outboard Ballscrew and Gimbal Installation, AMM TASK 27-51-32-400-801

(b) The transmission. These are the tasks:
- Inboard Flap Outboard Transmission Removal, AMM TASK 27-51-31-000-801
- Inboard Flap Outboard Transmission Installation, AMM TASK 27-51-31-400-801

(c) The carriage and rollers. These are the tasks:
- Inboard Flap Outboard Carriage Removal, AMM TASK 27-51-13-000-801
- Inboard Flap Outboard Carriage Installation, AMM TASK 27-51-13-400-801

(d) The flap track. These are the tasks:
- Inboard Flap Outboard Track Removal, AMM TASK 27-51-15-000-801
- Inboard Flap Outboard Track Installation, AMM TASK 27-51-15-400-801

(e) If you replaced one of the components above, then do these steps:

1) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If the maintenance message shows, then continue.

(f) If there was no visible damage, then continue.

(2) Do this check of the operation of the No. 6 flap drive system:

(a) Disconnect the torque tubes from the transmission. To disconnect the torque tubes, do this task: Inboard Wing Flap Torque Tube Removal, AMM TASK 27-51-58-000-802.

(b) Turn the torque tube coupling on the transmission to see if the No. 6 flap drive system moves.

(c) If you cannot move the flap drive system, then do these steps:

1) Replace the applicable parts.

2) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

5) If the maintenance message shows, then continue.

(d) If you can move the flap drive system, then continue.

(3) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

NOTE: This task will include steps to connect the torque tube to the transmission.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

G. Fault Isolation Procedure - Flap Not Skewed

(1) Adjust the inboard flap outboard skew sensor mechanism. To adjust the skew sensor mechanism, do this task: Flap Skew Detection System Adjustment, AMM TASK 27-59-00-820-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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1) If the maintenance message does not show, then you corrected the fault.
2) If the maintenance message shows, then continue.

(2) Replace the flap skew sensor, T530 on flap support No. 6. These are the tasks:
- Inboard Flap Outboard Skew Sensor Removal, AMM TASK 27-59-01-000-803
- Inboard Flap Outboard Skew Sensor Installation, AMM TASK 27-59-01-400-803

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
1) If the maintenance message does not show, then you corrected the fault.
2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 6:
(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.
(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:
1) Pin C13 and pin C14
2) Pin C14 and pin C15
3) Pin C15 and pin C13.
(c) If the resistances are not in the range of 5-10 ohms, then do these steps:
1) Disconnect connector D11824 from the flap skew sensor, T530.
2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11824 at the flap skew sensor, T530:

D728B		D11824
pin C13	- - - - - - - - - - - - - - - -	pin 4
pin C14	- - - - - - - - - - - - - - - -	pin 5
pin C15	- - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:
a) Repair the wiring.
b) Re-connect connector D11824 to the flap skew sensor, T530.
c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
e) If the maintenance message does not show, then you corrected the fault.
4) If you did not find a problem with the wiring, then continue.
a) Re-connect the connector D11824 to the flap skew sensor, T530.
(d) If the resistances are in the range of 5-10 ohms, then continue.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
(b) If the maintenance message does not show, then you corrected the fault.

END OF TASK

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807. TE Flap Support No. 7 Skew Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53256 FLAP 7 SKEW

(2) The signal to the FSEU from the No. 7 flap skew sensor does not agree with the signals from the right flap position transmitter and the No. 2 flap skew sensor.

B. Possible Causes

(1) No. 7 flap skew mechanism

(2) No. 7 flap skew sensor, T531

(3) No. 7 flap support

(4) FSEU, M1746

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-53415 FLAP 7 SKEW CON shows, then do the Fault Isolation Procedure for that fault, do this task: TE Flap Support No. 7 Skew Sensor Problem - Fault Isolation, 27-59 TASK 816.

(3) If the maintenance message 27-53256 FLAP 7 SKEW does not show, then there was an intermittent fault.

(4) If the maintenance message 27-53256 FLAP 7 SKEW shows, then continue.

(5) Do this check of the No. 2 and No. 7 flap drives to find if there is a skew:

(a) If the flaps are retracted, remove the aft fairings on flap supports No. 2 and 7. To remove the aft fairings, do this task: Outboard Flap Inboard Support Aft Fairing Removal, AMM TASK 27-51-28-000-804.

(b) Measure and record the distance from the ballscrew nut to the yoke on transmissions No. 2 and No. 7.

(c) If the distances from the ballscrew nuts to the yokes are the same ±0.5 inch, then do the Fault Isolation Procedure - Flap Not Skewed below.

NOTE: If the distances are in the limit, then the flap is not skewed.

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(d) If the distances from the ballscrew nuts to the yokes are not the same ±0.5 inch, then do the Fault Isolation Procedure - Flap Skewed below.

NOTE: If the distances are not in the limit, then the flap is skewed.

F. Fault Isolation Procedure - Flap Skewed

(1) Visually examine these components on flap support No. 7 and replace those that have damage:

(a) The ballscrew and gimbal. These are the tasks:
- Outboard Flap Inboard Ballscrew and Gimbal Removal, AMM TASK 27-51-42-000-802
- Outboard Flap Inboard Ballscrew and Gimbal Installation, AMM TASK 27-51-42-400-802

(b) The transmission. These are the tasks:
- Outboard Flap Inboard Transmission Removal, AMM TASK 27-51-41-000-802
- Outboard Flap Inboard Transmission Installation, AMM TASK 27-51-41-400-802

(c) The carriage and rollers. These are the tasks:
- Outboard Flap Inboard Carriage Removal, AMM TASK 27-51-23-000-802
- Outboard Flap Inboard Carriage Installation, AMM TASK 27-51-23-400-802

(d) The flap track. These are the tasks:
- Outboard Flap Inboard Track Removal, AMM TASK 27-51-25-000-802
- Outboard Flap Inboard Track Installation, AMM TASK 27-51-25-400-802

(e) If you replaced one of the components above, then do these steps:

1) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If the maintenance message shows, then continue.

(f) If there was no visible damage, then continue.

(2) Do this check of the operation of the No. 7 flap drive system:

(a) Disconnect the torque tubes from the transmission. To disconnect the torque tubes, do this task: Outboard Wing Flap Torque Tube Removal, AMM TASK 27-51-58-000-801.

(b) Turn the torque tube coupling on the transmission to see if the No. 7 flap drive system moves.

(c) If you cannot move the flap drive system, then do these steps:

1) Replace the applicable parts.

2) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

5) If the maintenance message shows, then continue.

(d) If you can move the flap drive system, then continue.

(3) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

NOTE: This task will include steps to connect the torque tube to the transmission.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

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G. Fault Isolation Procedure - Flap Not Skewed

(1) Adjust the outboard flap inboard skew sensor mechanism. To adjust the skew sensor mechanism, do this task: Flap Skew Detection System Adjustment, AMM TASK 27-59-00-820-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Replace the flap skew sensor, T531 on flap support No. 7. These are the tasks:

- Outboard Flap Inboard Skew Sensor Removal, AMM TASK 27-59-01-000-802
- Outboard Flap Inboard Skew Sensor Installation, AMM TASK 27-59-01-400-802

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 7:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin B13 and pin B14

2) Pin B14 and pin B15

3) Pin B15 and pin B13.

(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11826 from the flap skew sensor, T531.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11826 at the flap skew sensor, T531:

D728B		D11826
pin B13	- - - - - - - - - - - - - - - -	pin 4
pin B14	- - - - - - - - - - - - - - - -	pin 5
pin B15	- - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11826 to the flap skew sensor, T531.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

a) Re-connect the connector D11826 to the flap skew sensor, T531.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

—————— END OF TASK ——————

808. TE Flap Support No. 8 Skew Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53257 FLAP 8 SKEW

(2) The signal to the FSEU from the No. 8 flap skew sensor does not agree with the signals from the right flap position transmitter and the No. 1 flap skew sensor.

B. Possible Causes

(1) No. 8 flap skew mechanism

(2) No. 8 flap skew sensor, T532

(3) No. 8 flap support

(4) FSEU, M1746

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-53416 FLAP 8 SKEW CON shows, then do the Fault Isolation Procedure for that fault, do this task: TE Flap Support No. 8 Skew Sensor Problem - Fault Isolation, 27-59 TASK 817.

(3) If the maintenance message 27-53257 FLAP 8 SKEW does not show, then there was an intermittent fault.

(4) If the maintenance message 27-53257 FLAP 8 SKEW shows, then continue.

(5) Do this check of the No. 1 and No. 8 flap drives to find if there is a skew:

(a) If the flaps are retracted, remove the aft fairings on flap supports No. 1 and 8. To remove the aft fairings, do this task: Outboard Flap Outboard Support Aft Fairing Removal, AMM TASK 27-51-28-000-802.

(b) Measure and record the distance from the ballscrew nut to the yoke on transmissions No. 1 and No. 8.

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(c) If the distances from the ballscrew nuts to the yokes are the same ±0.3 inch, then do the Fault Isolation Procedure - Flap Not Skewed below.

NOTE: If the distances are in the limit, then the flap is not skewed.

(d) If the distances from the ballscrew nuts to the yokes are not the same ±0.3 inch, then do the Fault Isolation Procedure - Flap Skewed below.

NOTE: If the distances are not in the limit, then the flap is skewed.

F. Fault Isolation Procedure - Flap Skewed

(1) Visually examine these components on flap support No. 8 and replace those that have damage:

(a) The ballscrew and gimbal. These are the tasks:
- Outboard Flap Outboard Ballscrew and Gimbal Removal, AMM TASK 27-51-42-000-801
- Outboard Flap Outboard Ballscrew and Gimbal Installation, AMM TASK 27-51-42-400-801

(b) The transmission. These are the tasks:
- Outboard Flap Outboard Transmission Removal, AMM TASK 27-51-41-000-801
- Outboard Flap Outboard Transmission Installation, AMM TASK 27-51-41-400-801

(c) The carriage and rollers. These are the tasks:
- Outboard Flap Outboard Carriage Removal, AMM TASK 27-51-23-000-801
- Outboard Flap Outboard Carriage Installation, AMM TASK 27-51-23-400-801

(d) The flap track. These are the tasks:
- Outboard Flap Outboard Track Removal, AMM TASK 27-51-25-000-801
- Outboard Flap Outboard Track Installation, AMM TASK 27-51-25-400-801

(e) If you replaced one of the components above, then do these steps:
1) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.
2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
3) If the maintenance message does not show, then you corrected the fault.
4) If the maintenance message shows, then continue.

(f) If there was no visible damage, then continue.

(2) Do this check of the operation of the No. 8 flap drive system:

(a) Disconnect the torque tube from the transmission. To disconnect the torque tube, do this task: Outboard Wing Flap Torque Tube Removal, AMM TASK 27-51-58-000-801.

(b) Turn the torque tube coupling on the transmission to see if the No. 1 flap drive system moves.

(c) If you cannot move the flap drive system, then do these steps:
1) Replace the applicable parts.
2) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.
3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
4) If the maintenance message does not show, then you corrected the fault.
5) If the maintenance message shows, then continue.

(d) If you can move the flap drive system, then continue.

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(3) Do this task: Trailing Edge Flap Drive System Adjustment, AMM TASK 27-51-00-820-802.

NOTE: This task will include steps to connect the torque tube to the transmission.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

G. Fault Isolation Procedure - Flap Not Skewed

(1) Adjust the outboard flap outboard skew sensor mechanism. To adjust the skew sensor mechanism, do this task: Flap Skew Detection System Adjustment, AMM TASK 27-59-00-820-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Replace the flap skew sensor, T532 on flap support No. 8. These are the tasks:

- Outboard Flap Outboard Skew Sensor Removal, AMM TASK 27-59-01-000-801
- Outboard Flap Outboard Skew Sensor Installation, AMM TASK 27-59-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(3) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 8:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin A13 and pin A14

2) Pin A14 and pin A15

3) Pin A15 and pin A13.

(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11828 from the flap skew sensor, T532.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11828 at the flap skew sensor, T532:

D728B		D11828
pin A13	- - - - - - - - - - - - - - - -	pin 4
pin A14	- - - - - - - - - - - - - - - -	pin 5
pin A15	- - - - - - - - - - - - - - - -	pin 3

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector D11828 to the flap skew sensor, T532.

a) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

3) If you did not find a problem with the wiring, then continue.

(e) If the resistances are in the range of 5-10 ohms, then continue.

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(4) Do this check of the power supply to the flap skew sensor on flap support No. 8:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(b) Disconnect connector D11828 from the flap skew sensor, T532.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(d) Do a check for 28 VAC between pin 1 and pin 2 of connector D11828.

(e) If there is not 28 VAC between pin 1 and pin 2 of connector D11828, then do this check of the wiring:

1) Disconnect connector D11826 from the flap skew sensor, T531 at flap support No. 7.

2) Do a wiring check between these pins of the flap skew sensor, T532 and flap skew sensor, T531:

D11828		D11826
pin 1	- - - - - - - - - - - - - - - - - -	pin 7
pin 2	- - - - - - - - - - - - - - - - - -	pin 6

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11828 to the flap skew sensor, T532.

c) Re-connect connector D11826 to the flap skew sensor, T531.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If there is 28 VAC between pin 1 and pin 2 of connector D11828, then continue.

1) Re-connect the connector D11828 to the flap skew sensor, T532.

(5) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

809. TE Flap Skew Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53258 FLAP SKEW

(2) The signals to the FSEU from two or more pairs of flap skew sensors do not agree. The following flap skew sensors are pairs:

(a) Flap skew sensors No. 1 and No. 8.

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(b) Flap skew sensors No. 2 and No. 7.

(c) Flap skew sensors No. 3 and No. 6.

(d) Flap skew sensors No. 4 and No. 5.

B. Possible Causes

(1) Flap supports

(2) Flap skew mechanisms

(3) Flap skew sensors

(4) FSEU, M1746

(5) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Use the FSEU to find which pairs of flap skew sensor outputs are not in the limits:

(a) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?

(b) Select OTHER FUNCTNS? from the MAIN MENU on the FSEU.

(c) Select I/O MONITOR? from the OTHER FUNCTNS? menu.

(d) Select SYNCHRO INPUTS? from the I/O MONITOR? menu.

(e) Write down the values for F1 SKEW, F2 SKEW, F3 SKEW, F4 SKEW, F5 SKEW, F6 SKEW, F7 SKEW and F8 SKEW.

NOTE: Push the arrow keys to step through the sensor values.

(f) If the value for a skew sensor is -88, then the FSEU did not receive a valid signal from that skew sensor.

(g) Add the following pairs of sensor values together:

1) F1 SKEW and F8 SKEW

2) F2 SKEW and F7 SKEW

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3) F3 SKEW and F6 SKEW

4) F4 SKEW and F5 SKEW

(h) If there is a pair of sensor values that is not in the limit, then continue.

NOTE: The sensor values that do not add up to a value of 0 to 15, 345 to 375, or 705 to 720 are not in the limit.

(2) Visually examine these components on the flap supports for the pairs of flap skew sensors that are not in the limit:

(a) For flap supports No. 1 and 8, examine these components and replace those that have damage:

1) The ballscrew and gimbal. These are the tasks:
- Outboard Flap Outboard Ballscrew and Gimbal Removal, AMM TASK 27-51-42-000-801
- Outboard Flap Outboard Ballscrew and Gimbal Installation, AMM TASK 27-51-42-400-801

2) The transmission. These are the tasks:
- Outboard Flap Outboard Transmission Removal, AMM TASK 27-51-41-000-801
- Outboard Flap Outboard Transmission Installation, AMM TASK 27-51-41-400-801

3) The carriage and rollers. These are the tasks:
- Outboard Flap Outboard Carriage Removal, AMM TASK 27-51-23-000-801
- Outboard Flap Outboard Carriage Installation, AMM TASK 27-51-23-400-801

4) The flap track. These are the tasks:
- Outboard Flap Outboard Track Removal, AMM TASK 27-51-25-000-801
- Outboard Flap Outboard Track Installation, AMM TASK 27-51-25-400-801

(b) For flap supports No. 2 and 7, examine these components and replace those that have damage:

1) The ballscrew and gimbal. These are the tasks:
- Outboard Flap Inboard Ballscrew and Gimbal Removal, AMM TASK 27-51-42-000-802
- Outboard Flap Inboard Ballscrew and Gimbal Installation, AMM TASK 27-51-42-400-802

2) The transmission. These are the tasks:
- Outboard Flap Inboard Transmission Removal, AMM TASK 27-51-41-000-802
- Outboard Flap Inboard Transmission Installation, AMM TASK 27-51-41-400-802

3) The carriage and rollers. These are the tasks:
- Outboard Flap Inboard Carriage Removal, AMM TASK 27-51-23-000-802
- Outboard Flap Inboard Carriage Installation, AMM TASK 27-51-23-400-802

4) The flap track. These are the tasks:
- Outboard Flap Inboard Track Removal, AMM TASK 27-51-25-000-802
- Outboard Flap Inboard Track Installation, AMM TASK 27-51-25-400-802

(c) For flap supports No. 3 and 6, examine these components and replace those that have damage:

1) The ballscrew and gimbal. These are the tasks:
- Inboard Flap Outboard Ballscrew and Gimbal Removal, AMM TASK 27-51-32-000-801

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- Inboard Flap Outboard Ballscrew and Gimbal Installation, AMM TASK 27-51-32-400-801

2) The transmission. These are the tasks:
   - Inboard Flap Outboard Transmission Removal, AMM TASK 27-51-31-000-801
   - Inboard Flap Outboard Transmission Installation, AMM TASK 27-51-31-400-801
3) The carriage and rollers. These are the tasks:
   - Inboard Flap Outboard Carriage Removal, AMM TASK 27-51-13-000-801
   - Inboard Flap Outboard Carriage Installation, AMM TASK 27-51-13-400-801
4) The flap track. These are the tasks:
   - Inboard Flap Outboard Track Removal, AMM TASK 27-51-15-000-801
   - Inboard Flap Outboard Track Installation, AMM TASK 27-51-15-400-801

(d) For flap supports No. 4 and 5, examine these components and replace those that have damage:

1) The ballscrew and gimbal. These are the tasks:
   - Inboard Flap Inboard Ballscrew and Gimbal Removal, AMM TASK 27-51-32-000-802
   - Inboard Flap Inboard Ballscrew and Gimbal Installation, AMM TASK 27-51-32-400-802
2) The transmission. These are the tasks:
   - Inboard Flap Inboard Transmission Removal, AMM TASK 27-51-31-000-802
   - Inboard Flap Inboard Transmission Installation, AMM TASK 27-51-31-400-802
3) The carriage and rollers. These are the tasks:
   - Inboard Flap Inboard Carriage Removal, AMM TASK 27-51-13-000-802
   - Inboard Flap Inboard Carriage Installation, AMM TASK 27-51-13-400-802
4) The flap track. These are the tasks:
   - Inboard Flap Inboard Track Removal, AMM TASK 27-51-15-000-802
   - Inboard Flap Inboard Track Installation, AMM TASK 27-51-15-400-802

(e) If you replaced one of the components above, then, do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.
2) If the maintenance message shows, then continue.

(f) If there was no visible damage, then continue.

(g) If you replaced one or more of the components above, then, do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.
2) If the maintenance message shows, then continue.

(h) If there was no visible damage, then continue.

(3) Adjust the applicable flap skew sensor mechanisms. To adjust the skew sensor mechanisms, do this task: Flap Skew Detection System Adjustment, AMM TASK 27-59-00-820-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the maintenance message does not show, then you corrected the fault.
2) If the maintenance message shows, then continue.

(4) Do this check of the wiring between the FSEU and the applicable flap skew sensors:

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(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect the electrical connector from the applicable flap skew sensors:

1) Disconnect connector D11814 from the flap skew sensor No. 1, T525.
2) Disconnect connector D11816 from the flap skew sensor No. 2, T526.
3) Disconnect connector D11818 from the flap skew sensor No. 3, T527.
4) Disconnect connector D11820 from the flap skew sensor No. 4, T528.
5) Disconnect connector D11822 from the flap skew sensor No. 5, T529.
6) Disconnect connector D11824 from the flap skew sensor No. 6, T530.
7) Disconnect connector D11826 from the flap skew sensor No. 7, T531.
8) Disconnect connector D11828 from the flap skew sensor No. 8, T532.

(c) Do a wiring check between these pins of connector D728B at the E1-1 shelf and the electrical connector on the applicable flap skew sensor:

1) Flap Skew Sensor No. 1, T525:

D728B		D11814
pin H13	- - - - - - - - - - - - - - - -	pin 4
pin H14	- - - - - - - - - - - - - - - -	pin 5
pin H15	- - - - - - - - - - - - - - - -	pin 3

2) Flap Skew Sensor No. 2, T526:

D728B		D11816
pin G13	- - - - - - - - - - - - - - - -	pin 4
pin G14	- - - - - - - - - - - - - - - -	pin 5
pin G15	- - - - - - - - - - - - - - - -	pin 3

3) Flap Skew Sensor No. 3, T527:

D728B		D11818
pin F13	- - - - - - - - - - - - - - - -	pin 4
pin F14	- - - - - - - - - - - - - - - -	pin 5
pin F15	- - - - - - - - - - - - - - - -	pin 3

4) Flap Skew Sensor No. 4, T528:

D728B		D11820
pin E13	- - - - - - - - - - - - - - - -	pin 4
pin E14	- - - - - - - - - - - - - - - -	pin 5
pin E15	- - - - - - - - - - - - - - - -	pin 3

5) Flap Skew Sensor No. 5, T529:

D728B		D11822
pin D13	- - - - - - - - - - - - - - - -	pin 4
pin D14	- - - - - - - - - - - - - - - -	pin 5
pin D15	- - - - - - - - - - - - - - - -	pin 3

6) Flap Skew Sensor No. 6, T530:

D728B		D11824
pin C13	- - - - - - - - - - - - - - - -	pin 4
pin C14	- - - - - - - - - - - - - - - -	pin 5
pin C15	- - - - - - - - - - - - - - - -	pin 3

7) Flap Skew Sensor No. 7, T531:

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D728B		D11826
pin B13	- - - - - - - - - - - - - - - -	pin 4
pin B14	- - - - - - - - - - - - - - - -	pin 5
pin B15	- - - - - - - - - - - - - - - -	pin 3

8) Flap Skew Sensor No. 8, T532:

D728B		D11828
pin A13	- - - - - - - - - - - - - - - -	pin 4
pin A14	- - - - - - - - - - - - - - - -	pin 5
pin A15	- - - - - - - - - - - - - - - -	pin 3

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connector to the applicable flap skew sensors.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If you did not find a problem with the wiring, then continue.

1) Re-connect the connector to the applicable flap skew sensor.

(5) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

810. TE Flap Support No. 1 Skew Sensor Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53409 FLAP 1 SKEW CON

(2) The FSEU did not receive a valid signal from the No. 1 flap skew sensor.

B. Possible Causes

(1) No. 1 flap skew sensor, T525

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-53-21)

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(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

(4) If the maintenance message shows for more than one sensor, do the power supply check for the most inboard sensor that has a fault.

F. Fault Isolation Procedure

(1) Replace the flap skew sensor, T525 on flap support No. 1. These are the tasks:
- Outboard Flap Outboard Skew Sensor Removal, AMM TASK 27-59-01-000-801
- Outboard Flap Outboard Skew Sensor Installation, AMM TASK 27-59-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 1:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin H13 and pin H14

2) Pin H14 and pin H15

3) Pin H15 and pin H13.

(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11814 from the flap skew sensor, T525.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11814 at the flap skew sensor, T525:

D728B		D11814
pin H13	- - - - - - - - - - - - - - - -	pin 4
pin H14	- - - - - - - - - - - - - - - -	pin 5
pin H15	- - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector D11814 to the flap skew sensor, T525.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(3) Do this check of the power supply to the flap skew sensor on flap support No. 1:

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(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(b) Disconnect connector D11814 from the flap skew sensor, T525.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(d) Do a check for 28 VAC between pin 1 and pin 2 of connector D11814.

(e) If there is not 28 VAC between pin 1 and pin 2 of connector D11814, then do this check of the wiring:

1) Disconnect connector D11816 from the flap skew sensor, T526 at flap support No. 2.

2) Do a wiring check between these pins of the flap skew sensor, T525 and flap skew sensor, T526:

D11814		**D11816**
pin 1	- - - - - - - - - - - - - - - - - -	pin 7
pin 2	- - - - - - - - - - - - - - - - - -	pin 6

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Reconnect connector D11814 to the flap skew sensor, T525.

c) Reconnect connector D11816 to the flap skew sensor, T526.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If there is 28 VAC between pin 1 and pin 2 of connector D11814, then continue.

1) Re-connect the connector D11814 to the flap skew sensor, T525.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

811. TE Flap Support No. 2 Skew Sensor Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53410 FLAP 2 SKEW CON

(2) The FSEU did not receive a valid signal from the No. 2 flap skew sensor.

B. Possible Causes

(1) No. 2 flap skew sensor, T526

(2) FSEU, M1746

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(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

(4) If the maintenance message shows for more than one sensor, do the power supply check for the most inboard sensor that has a fault.

F. Fault Isolation Procedure

(1) Replace the flap skew sensor, T526 on flap support No. 2. These are the tasks:
- Outboard Flap Inboard Skew Sensor Removal, AMM TASK 27-59-01-000-802
- Outboard Flap Inboard Skew Sensor Installation, AMM TASK 27-59-01-400-802

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 2:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin G13 and pin G14

2) Pin G14 and pin G15

3) Pin G15 and pin G13.

(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11816 from the flap skew sensor, T526.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11816 at the flap skew sensor, T526:

D728B		D11816
pin G13	- - - - - - - - - - - - - - - -	pin 4
pin G14	- - - - - - - - - - - - - - - -	pin 5
pin G15	- - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

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b) Re-connect the connector D11816 to the flap skew sensor, T526.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

a) Re-connect the connector D11816 to the flap skew sensor, T526.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(3) Do this check of the power supply to the flap skew sensor on flap support No. 2:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(b) Disconnect connector D11816 from the flap skew sensor, T526.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(d) Do a check for 28 VAC between pin 1 and pin 2 of connector D11816.

(e) If there is not 28 VAC between pin 1 and pin 2 of connector D11816, then do this check of the wiring:

1) Disconnect connector D11818 from the flap skew sensor, T527 at flap support No. 3.

2) Do a wiring check between these pins of the flap skew sensor, T526 and flap skew sensor, T527:

D11816		D11818
pin 1	- - - - - - - - - - - - - - - - - -	pin 7
pin 2	- - - - - - - - - - - - - - - - - -	pin 6

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Reconnect connector D11816 to the flap skew sensor, T526.

c) Reconnect connector D11818 to the flap skew sensor, T527.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If there is 28 VAC between pin 1 and pin 2 of connector D11816, then continue.

1) Re-connect the connector D11816 to the flap skew sensor, T526.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

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812. TE Flap Support No. 3 Skew Sensor Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53411 FLAP 3 SKEW CON

(2) The FSEU did not receive a valid signal from the No. 3 flap skew sensor.

B. Possible Causes

(1) No. 3 flap skew sensor, T527

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

(4) If the maintenance message shows for more than one sensor, do the power supply check for the most inboard sensor that has a fault.

F. Fault Isolation Procedure

(1) Replace the flap skew sensor, T527 on flap support No. 3. These are the tasks:
- Inboard Flap Outboard Skew Sensor Removal, AMM TASK 27-59-01-000-803
- Inboard Flap Outboard Skew Sensor Installation, AMM TASK 27-59-01-400-803

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 3:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin F13 and pin F14

2) Pin F14 and pin F15

3) Pin F15 and pin F13.

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(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11818 from the flap skew sensor, T527.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11818 at the flap skew sensor, T527:

D728B		D11818
pin F13	- - - - - - - - - - - - - - - - -	pin 4
pin F14	- - - - - - - - - - - - - - - - -	pin 5
pin F15	- - - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector D11818 to the flap skew sensor, T527.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

a) Re-connect the connector D11818 to the flap skew sensor, T527.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(3) Do this check of the power supply to the flap skew sensor on flap support No. 3

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(b) Disconnect connector D11818 from the flap skew sensor, T527.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

(d) Do a check for 28 VAC between pin 1 and pin 2 of connector D11818.

(e) If there is not 28 VAC between pin 1 and pin 2 of connector D11818, then do this check of the wiring:

1) Disconnect connector D11820 from the flap skew sensor, T528 at flap support No. 4.

2) Do a wiring check between these pins of the flap skew sensor, T527 and flap skew sensor, T528:

D11818		D11820
pin 1	- - - - - - - - - - - - - - - - - -	pin 7
pin 2	- - - - - - - - - - - - - - - - - -	pin 6

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Reconnect connector D11818 to the flap skew sensor, T527.

c) Reconnect connector D11820 to the flap skew sensor, T528.

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d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If there is 28 VAC between pin 1 and pin 2 of connector D11818, then continue.

1) Re-connect the connector D11818 to the flap skew sensor, T527.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

813. TE Flap Support No. 4 Skew Sensor Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53412 FLAP 4 SKEW CON

(2) The FSEU did not receive a valid signal from the No. 4 flap skew sensor.

B. Possible Causes

(1) No. 4 flap skew sensor, T528

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

(4) If the maintenance message shows for more than one sensor, do the power supply check for the most inboard sensor that has a fault.

F. Fault Isolation Procedure

(1) Replace the flap skew sensor, T528 on flap support No. 4. These are the tasks:
- Inboard Flap Inboard Skew Sensor Removal, AMM TASK 27-59-01-000-804
- Inboard Flap Inboard Skew Sensor Installation, AMM TASK 27-59-01-400-804

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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1) If the maintenance message does not show, then you corrected the fault.
2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 4:
   (a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.
   (b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:
      1) Pin E13 and pin E14
      2) Pin E14 and pin E15
      3) Pin E15 and pin E13.
   (c) If the resistances are not in the range of 5-10 ohms, then do these steps:
      1) Disconnect connector D11820 from the flap skew sensor, T528.
      2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11820 at the flap skew sensor, T528:

D728B		D11820
pin E13	- - - - - - - - - - - - - - - - -	pin 4
pin E14	- - - - - - - - - - - - - - - - -	pin 5
pin E15	- - - - - - - - - - - - - - - - -	pin 3

      3) If you find a problem with the wiring, then do these steps:
         a) Repair the wiring.
         b) Re-connect the connector D11820 to the flap skew sensor, T528.
         c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
         d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
         e) If the maintenance message does not show, then you corrected the fault.
      4) If you did not find a problem with the wiring, then continue.
         a) Re-connect the connector D11820 to the flap skew sensor, T528.
   (d) If the resistances are in the range of 5-10 ohms, then continue.

(3) Do this check of the power supply to the flap skew sensor on flap support No. 4
   (a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

   (b) Disconnect connector D11820 from the flap skew sensor, T528.
   (c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	12	C00213	FC TE FLAP POS/SKEW SNSR & IND LEFT

   (d) Do a check for 28 VAC between pin 1 and pin 2 of connector D11820.
   (e) If there is not 28 VAC between pin 1 and pin 2 of connector D11820, then do this check of the wiring:
      1) Do a check for 28 VAC between pin 1 on connector D11820 and structure ground.

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2) Do a check for 28 VAC between pin 2 on connector D11820 and the circuit breaker C00213, FLT CONT TE FLAP POS/SKEW SNSR & IND LEFT.

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Reconnect connector D11820 to the flap skew sensor, T528.

c) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If there is 28 VAC between pin 1 and pin 2 of connector D11820, then continue.

1) Re-connect the connector D11820 to the flap skew sensor, T528.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

814. TE Flap Support No. 5 Skew Sensor Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53413 FLAP 5 SKEW CON

(2) The FSEU did not receive a valid signal from the No. 5 flap skew sensor.

B. Possible Causes

(1) No. 5 flap skew sensor, T529

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

(4) If the maintenance message shows for more than one sensor, do the power supply check for the most inboard sensor that has a fault.

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F. Fault Isolation Procedure

(1) Replace the flap skew sensor, T529 on flap support No. 5. These are the tasks:
- Inboard Flap Inboard Skew Sensor Removal, AMM TASK 27-59-01-000-804
- Inboard Flap Inboard Skew Sensor Installation, AMM TASK 27-59-01-400-804

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 5:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Disconnect connector D11822 from the flap skew sensor, T529.

(c) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin D13 and pin D14

2) Pin D14 and pin D15

3) Pin D15 and pin D13.

(d) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11822 at the flap skew sensor, T529:

D728B		D11822
pin D13	- - - - - - - - - - - - - - - -	pin 4
pin D14	- - - - - - - - - - - - - - - -	pin 5
pin D15	- - - - - - - - - - - - - - - -	pin 3

2) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector D11822 to the flap skew sensor, T529.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

3) If you did not find a problem with the wiring, then continue.

a) Re-connect the connector D11822 to the flap skew sensor, T529.

(e) If the resistances are in the range of 5-10 ohms, then continue.

(3) Do this check of the power supply to the flap skew sensor on flap support No. 8:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(b) Disconnect connector D11822 from the flap skew sensor, T529.

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(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(d) Do a check for 28 VAC between pin 1 and pin 2 of connector D11822.

(e) If there is not 28 VAC between pin 1 and pin 2 of connector D11822, then do this check of the wiring:

1) Do a check for 28 VAC between pin 1 on connector D11822 and structure ground.

2) Do a check for 28 VAC between pin 2 on connector D11822 and the circuit breaker C01443, FLT CONT TE FLAP POS/SKEW SNSR & IND RIGHT.

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11822 to the flap skew sensor, T529.

c) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If there is 28 VAC between pin 1 and pin 2 of connector D11822, then continue.

1) Re-connect the connector D11822 to the flap skew sensor, T529.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

815. TE Flap Support No. 6 Skew Sensor Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53414 FLAP 6 SKEW CON

(2) The FSEU did not receive a valid signal from the No. 6 flap skew sensor.

B. Possible Causes

(1) No. 6 flap skew sensor, T530

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

D. Related Data

(1) (SSM 27-53-21)

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(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

(4) If the maintenance message shows for more than one sensor, do the power supply check for the most inboard sensor that has a fault.

F. Fault Isolation Procedure

(1) Replace the flap skew sensor, T530 on flap support No. 6. These are the tasks:
- Inboard Flap Outboard Skew Sensor Removal, AMM TASK 27-59-01-000-803
- Inboard Flap Outboard Skew Sensor Installation, AMM TASK 27-59-01-400-803

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 6:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin C13 and pin C14

2) Pin C14 and pin C15

3) Pin C15 and pin C13.

(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11824 from the flap skew sensor, T530.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11824 at the flap skew sensor, T530:

D728B		D11824
pin C13	- - - - - - - - - - - - - - - -	pin 4
pin C14	- - - - - - - - - - - - - - - -	pin 5
pin C15	- - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector D11824 to the flap skew sensor, T530.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

a) Re-connect the connector D11824 to the flap skew sensor, T530.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(3) Do this check of the power supply to the flap skew sensor on flap support No. 6:

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(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(b) Disconnect connector D11824 from the flap skew sensor, T530.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(d) Do a check for 28 VAC between pin 1 and pin 2 of connector D11824.

(e) If there is not 28 VAC between pin 1 and pin 2 of connector D11824, then do this check of the wiring:

1) Disconnect connector D11822 from the flap skew sensor, T529 at flap support No. 5.

2) Do a wiring check between these pins of the flap skew sensor, T530 and flap skew sensor, T529:

D11824		D11822
pin 1	- - - - - - - - - - - - - - - - - -	pin 7
pin 2	- - - - - - - - - - - - - - - - - -	pin 6

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11824 to the flap skew sensor, T530.

c) Re-connect connector D11822 to the flap skew sensor, T529.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If there is 28 VAC between pin 1 and pin 2 of connector D11824, then continue.

1) Re-connect the connector D11824 to the flap skew sensor, T530.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

816. TE Flap Support No. 7 Skew Sensor Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53415 FLAP 7 SKEW CON

(2) The FSEU did not receive a valid signal from the No. 7 flap skew sensor.

B. Possible Causes

(1) No. 7 flap skew sensor, T531

(2) FSEU, M1746

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(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

(4) If the maintenance message shows for more than one sensor, do the power supply check for the most inboard sensor that has a fault.

F. Fault Isolation Procedure

(1) Replace the flap skew sensor, T531 on flap support No. 7. These are the tasks:
- Outboard Flap Inboard Skew Sensor Removal, AMM TASK 27-59-01-000-802
- Outboard Flap Inboard Skew Sensor Installation, AMM TASK 27-59-01-400-802

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 7:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin B13 and pin B14

2) Pin B14 and pin B15

3) Pin B15 and pin B13.

(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11826 from the flap skew sensor, T521.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11826 at the flap skew sensor, T531:

D728B		D11826
pin B13	- - - - - - - - - - - - - - - -	pin 4
pin B14	- - - - - - - - - - - - - - - -	pin 5
pin B15	- - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

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b) Re-connect the connector D11826 to the flap skew sensor, T531.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

a) Re-connect the connector D11826 to the flap skew sensor, T531.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(3) Do this check of the power supply to the flap skew sensor on flap support No. 7:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(b) Disconnect connector D11826 from the flap skew sensor, T531.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(d) Do a check for 28 VAC between pin 1 and pin 2 of connector D11826.

(e) If there is not 28 VAC between pin 1 and pin 2 of connector D11826, then do this check of the wiring:

1) Disconnect connector D11824 from the flap skew sensor, T530 at flap support No. 6.

2) Do a wiring check between these pins of the flap skew sensor, T531 and flap skew sensor, T530:

D11826		**D11824**
pin 1	- - - - - - - - - - - - - - - - - -	pin 7
pin 2	- - - - - - - - - - - - - - - - - -	pin 6

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11826 to the flap skew sensor, T531.

c) Re-connect connector D11824 to the flap skew sensor, T530.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If there is 28 VAC between pin 1 and pin 2 of connector D11826, then continue.

1) Re-connect the connector D11826 to the flap skew sensor, T531.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

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817. TE Flap Support No. 8 Skew Sensor Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-53416 FLAP 8 SKEW CON

(2) The FSEU did not receive a valid signal from the No. 8 flap skew sensor.

B. Possible Causes

(1) No. 8 flap skew sensor, T532

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

D. Related Data

(1) (SSM 27-53-21)

(2) (WDM 27-53-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

(4) If the maintenance message shows for more than one sensor, do the power supply check for the most inboard sensor that has a fault.

F. Fault Isolation Procedure

(1) Replace the flap skew sensor, T532 on flap support No. 8. These are the tasks:
- Outboard Flap Outboard Skew Sensor Removal, AMM TASK 27-59-01-000-801
- Outboard Flap Outboard Skew Sensor Installation, AMM TASK 27-59-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

2) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the flap skew sensor on flap support No. 8:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pairs of pins of connector D728B at the E1-1 shelf:

1) Pin A13 and pin A14

2) Pin A14 and pin A15

3) Pin A15 and pin A13.

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(c) If the resistances are not in the range of 5-10 ohms, then do these steps:

1) Disconnect connector D11828 from the flap skew sensor, T532.

2) Do a wiring check between these pins of connector D728B at the E1-1 shelf and connector D11828 at the flap skew sensor, T532:

D728B		D11828
pin A13	- - - - - - - - - - - - - - - -	pin 4
pin A14	- - - - - - - - - - - - - - - -	pin 5
pin A15	- - - - - - - - - - - - - - - -	pin 3

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect the connector D11828 to the flap skew sensor, T532.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

4) If you did not find a problem with the wiring, then continue.

(d) If the resistances are in the range of 5-10 ohms, then continue.

(3) Do this check of the power supply to the flap skew sensor on flap support No. 8:

(a) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(b) Disconnect connector D11828 from the flap skew sensor, T532.

(c) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	11	C01443	FC TE FLAP POS/SKEW SNSR & IND RIGHT

(d) Do a check for 28 VAC between pin 1 and pin 2 of connector D11828.

(e) If there is not 28 VAC between pin 1 and pin 2 of connector D11828, then do this check of the wiring:

1) Disconnect connector D11826 from the flap skew sensor, T531 at flap support No. 7.

2) Do a wiring check between these pins of the flap skew sensor, T532 and flap skew sensor, T531:

D11828		D11826
pin 1	- - - - - - - - - - - - - - - - - -	pin 7
pin 2	- - - - - - - - - - - - - - - - - -	pin 6

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D11828 to the flap skew sensor, T532.

c) Re-connect connector D11826 to the flap skew sensor, T531.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If there is 28 VAC between pin 1 and pin 2 of connector D11828, then continue.

1) Re-connect the connector D11828 to the flap skew sensor, T532.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

END OF TASK

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801. Spoiler Panels Float - Fault Isolation

A. Description

(1) The speed brake lever moves cables that control the spoilers control valve. The valve supplies pressure to the actuators to raise the spoilers.

B. Possible Causes

(1) Flight spoiler actuator or inboard ground spoiler actuator or outboard ground spoiler actuator

C. Initial Evaluation

(1) Do a check of the applicable spoiler. To do the check, do this task: Spoiler Inspection, AMM TASK 27-09-91-200-805.

(2) If the check on the applicable spoiler is not satisfactory, then do the Fault Isolation Procedure below.

(3) If the check on the applicable spoiler is satisfactory, then the fault was an intermittent fault.

D. Fault Isolation Procedure

(1) If spoiler float is on spoilers No. 2, 3, 4, 5, 8, 9, 10 or 11 then do these steps:

(a) Examine the applicable spoiler actuator control rod for wear.

1) Repair or replace the applicable spoiler actuator. These are the tasks:
- Flight Spoiler Actuator Removal, AMM TASK 27-61-51-000-801
- Flight Spoiler Actuator Installation, AMM TASK 27-61-51-400-801

2) Do a check of the applicable spoiler. To do it, do this task: Spoiler Inspection, AMM TASK 27-09-91-200-805.

3) If the check is satisfactory, then you corrected the fault.

(2) If spoiler float is on spoilers No. 1 or 12 then do these steps:

(a) Examine the applicable spoiler actuator control rod for wear.

1) Repair or replace the applicable spoiler actuator. These are the tasks:
- Outboard Ground Spoiler Actuator Removal, AMM TASK 27-62-94-000-801
- Outboard Ground Spoiler Actuator Installation, AMM TASK 27-62-94-400-801

2) Do a check of the applicable spoiler. To do it, do this task: Spoiler Inspection, AMM TASK 27-09-91-200-805.

3) If the check is satisfactory, then you corrected the fault.

(3) If spoiler float is on spoilers No. 6 and 12 then do these steps:

(a) Examine the applicable spoiler actuator control rod for wear.

1) Repair or replace the applicable spoiler actuator. These are the tasks:
- Inboard Ground Spoiler Actuator Removal, AMM TASK 27-62-71-000-801
- Inboard Ground Spoiler Actuator Installation, AMM TASK 27-62-71-400-801

2) Do a check of the applicable spoiler. To do it, do this task: Spoiler Inspection, AMM TASK 27-09-91-200-805.

3) If the check is satisfactory, then you corrected the fault.

END OF TASK

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802. Flight spoilers do not operate - Fault Isolation

A. Description

(1) The flight crew uses the speed brake lever to control the speed brake operation. The speed brake lever supplies mechanical inputs through the spoiler mixer and ratio changer to the flight spoiler actuators.

B. Possible Causes

(1) Spoiler ratio changer

(2) Spoiler mixer

C. Initial Evaluation

(1) Do this check of the flight spoilers:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

(b) Turn the captain's aileron control wheel fully clockwise.

1) Make sure the No. 8, 9, 10, and 11 flight spoilers move to the up position.

(c) Turn the captain's aileron control wheel fully counterclockwise.

1) Make sure the No. 2, 3, 4 and 5 flight spoilers move to the up position.

(d) Turn the captain's aileron control wheel to the neutral position.

1) Make sure the flight spoilers move to the retracted position.

(e) Move the speed brake lever from the DOWN position to the UP position.

1) Make sure the spoilers move to the UP position.

(f) Move the speed brake lever from the UP position to the DOWN position.

1) Make sure the flight spoilers move to the retracted position.

(g) Do this task: Put the Spoiler Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-61-00-840-801.

(2) If the check was satisfactory, then there was an intermittent fault.

(3) If the check was not satisfactory, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Do this check:

(a) Do a test of the spoiler mixer no-back assembly. To do it, do this task: Spoiler Ratio Changer No-Back Assembly Test, AMM TASK 27-61-00-820-809.

(b) If the test is not satisfactory, then do this:

1) Replace the spoiler ratio changer. These are the tasks:
- Spoiler Ratio Changer Removal, AMM TASK 27-61-31-000-801
- Spoiler Ratio Changer Installation, AMM TASK 27-61-31-400-801

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

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(c) If the test is satisfactory, then do this:

1) Replace the spoiler mixer. These are the tasks:
- Spoiler Mixer Removal, AMM TASK 27-61-21-000-801
- Spoiler Mixer Installation, AMM TASK 27-61-21-400-801

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

E. Repair Confirmation

(1) Do this check of the flight spoilers:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

(b) Turn the captain's aileron control wheel fully clockwise.

1) Make sure the No. 8, 9, 10, and 11 flight spoilers move to the up position.

(c) Turn the captain's aileron control wheel fully counterclockwise.

1) Make sure the No. 2, 3, 4 and 5 flight spoilers move to the up position.

(d) Turn the captain's aileron control wheel to the neutral position.

1) Make sure the flight spoilers move to the retracted position.

(e) Move the speed brake lever from the DOWN position to the UP position.

1) Make sure the spoilers move to the UP position.

(f) Move the speed brake lever from the UP position to the DOWN position.

1) Make sure the flight spoilers move to the retracted position.

(g) Do this task: Put the Spoiler Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-61-00-840-801.

(2) If the check was satisfactory, then you corrected the fault.

END OF TASK

803. Ground spoilers do not operate - Fault Isolation

A. Description

(1) The pilot uses the speed brake lever to manually move the ground spoilers when the airplane is on the ground. The auto speed brake actuators automatically controls the ground spoilers.

(2) The ground spoilers only move when the speed brake lever moves while the airplane is on the ground.

B. Possible Causes

(1) Ground spoiler interlock valve cable

(2) Ground spoiler interlock valve

(3) Ground spoiler control valve

C. Initial Evaluation

(1) Do this check of the ground spoilers:

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WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

(b) Make sure the airplane is on its landing gear or compress the right main gear strut a minimum of 5 inches.

NOTE: This will open the ground spoiler interlock valve.

(c) Make sure the speed brake lever is in the DOWN position.

(d) Make sure that the ground spoilers are in the full down position.

(e) Slowly move the speed brake lever aft 29 +/-2 degrees (2.66 +/-0.20 inch).

(2) If the ground spoilers extend, then there was an intermittent fault. Do these steps to complete the task:

(a) Move the speed brake lever to the DOWN position.

(b) Do this task: Put the Spoiler Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-61-00-840-801.

(3) If the ground spoilers do not move to the full up position, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Do this check the ground spoiler interlock valve cable:

(a) Examine the ground spoiler interlock valve cable and lower slider for unwanted objects and damaged components.

(b) If you find a problem with the spoiler interlock valve cable, then do these steps:

1) Repair or replace the spoiler interlock valve cable. These are the tasks:
- Ground Spoiler Interlock Valve Cable Removal, AMM TASK 27-62-51-000-801
- Ground Spoiler Interlock Valve Cable Installation, AMM TASK 27-62-51-400-801

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

(c) If you find a problem with the spoiler interlock lower slider, then do these steps:

1) Repair or replace the spoiler interlock valve lower slider. These are the tasks:
- Lower Slider Removal, AMM TASK 27-62-51-000-802
- Lower Slider Installation, AMM TASK 27-62-51-400-802

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

(d) If you do not find a problem with the ground spoiler interlock valve cable and lower slider, then continue.

(2) Do this check of the speed brake interlock valve:

(a) Do a test of the ground spoiler interlock valve. To do the test, do this task: Ground Spoiler Interlock Valve Functional Test - Jacking Method, AMM TASK 27-62-61-400-805.

(b) If the test is not satisfactory, then do this:

1) Replace the ground spoiler interlock valve. To replace it, hese are the tasks:
- Ground Spoiler Interlock Valve Removal, AMM TASK 27-62-61-000-801
- Ground Spoiler Interlock Valve Installation, AMM TASK 27-62-61-400-801

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

(c) If the test is satisfactory, then do this:

1) Replace the ground spoiler control valve. To replace it, these are the tasks:
- Ground Spoiler Control Valve Removal, AMM TASK 27-62-41-000-801
- Ground Spoiler Control Valve Installation, AMM TASK 27-62-41-400-801

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

E. Repair Confirmation

(1) Do this check of the ground spoilers:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

(b) Make sure the airplane is on its landing gear or compress the right main gear strut a minimum of 5 inches.

NOTE: This will open the ground spoiler interlock valve.

(c) Make sure the speed brake lever is in the DOWN position.

(d) Make sure that the ground spoilers are in the full down position.

(e) Slowly move the speed brake lever aft 29 +/-2 degrees (2.66 +/-0.20 inch).

(f) Make sure the ground spoilers extend.

(g) If the ground spoilers extend, then you corrected the fault.

(h) Move the speed brake lever to the DOWN position.

(i) Do this task: Put the Spoiler Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-61-00-840-801.

——————— END OF TASK ———————

804. Spoilers do not move in one direction - Fault Isolation

A. Description

(1) The speed brake lever moves cables that control the spoiler control valve. The valve supplies pressure to the actuators to raise the spoilers.

B. Possible Causes

(1) Control cables

(2) Air pressure seals

(3) Cable guard, pulleys, or brackets

C. Initial Evaluation

(1) Do a test of the speed brake control system. To do the check, do this task: Speed Brake Control System Operational Test, AMM TASK 27-62-00-710-801.

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

(3) If the test is satisfactory, then the fault was an intermittent fault.

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D. Fault Isolation Procedure

(1) Do a tension check of the speed brake control cables. To do the check, do this task: Speed Brake Control Cable Adjustment, AMM TASK 27-62-00-820-802.

(a) If you find a problem, then do these steps:

1) Re-rig the speed brake control cables. To rig them, do this task: Speed Brake Control Cable Adjustment, AMM TASK 27-62-00-820-802.

2) Do a test of the speed brake control system. To check, do this task: Speed Brake Control System Operational Test, AMM TASK 27-62-00-710-801.

3) If the test is OK, then you corrected the fault.

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

(2) Do a check of the air pressure seals:

(a) Examine the air pressure seals for unwanted objects and damaged components. To examine the air pressure seals, do this task: Location of the Flight Control Cables Air Pressure Seals, AMM TASK 27-09-17-860-801.

(b) If you find a problem, then do these steps:

1) Remove the unwanted objects or replace the air pressure seals. These are the tasks:
- Control Cable Air Seal Removal, AMM TASK 20-10-04-000-801
- Control Cable Air Seal Installation, AMM TASK 20-10-04-400-801

2) Do a test of the speed brake control system. To do the check, do this task: Speed Brake Control System Operational Test, AMM TASK 27-62-00-710-801.

3) If the test is satisfactory, then you corrected the fault.

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

(3) Do a check of the cable guards, control cable pulleys, and brackets on the control cable pulleys:

(a) Examine the cable guards, control cable pulleys, and brackets on the control cable pulleys. To examine the control cable pulleys, do this task: Inspection of Pulleys, AMM TASK 20-20-31-200-805.

(b) If you find a problem, then do these steps:

1) Remove all unwanted objects or replace the control cable guards.

2) Remove all unwanted objects or replace the control cable pulleys. These are the tasks:
- Control Cable Pulleys Removal, AMM TASK 20-10-09-000-801
- Control Cable Pulleys Installation, AMM TASK 20-10-09-400-801

3) Remove all unwanted objects or replace the brackets on the control cable pulleys.

4) Do a test of the speed brake control system. Do this task: Speed Brake Control System Operational Test, AMM TASK 27-62-00-710-801.

5) If the test is satisfactory, then you corrected the fault.

END OF TASK

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801. Auto Speed Brake/Antiskid Interface Test Figure 201

A. General

(1) The auto speed brake module, M980 is on the E4-2 shelf in the electronic equipment (EE) compartment.

(2) The front of the auto speed brake module, M980 has these four blue lights:

(a) DS 1 RT OUTBD

(b) DS 3 L INBD

(c) DS 4 RT INBD

(d) DS 2 L OUTBD

(3) The primary input to the electrical circuit in the auto speed brake module, that will power the speed brake lever actuator to raise the lever, is from the antiskid system. A wheel speed above 60 knots signal is required from one wheel of each of these pairs; left inboard or right outboard and left outboard or right inboard. The blue lights on the auto speed brake module will illuminate when the wheel speed signal is above 60 knots.

B. Procedure

(1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

(a) If the BITE test fails, then do the fault isolation task for the applicable maintenance message.

(b) If the BITE test passes, then continue.

(2) Do the auto speed brake/antiskid interface test:

(a) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

(b) Set the speed brake lever in the ARM position.

(c) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

1) Set the rotary switch on the antiskid/autobrake control unit, M162 to OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

2) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

3) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(d) Look at the four blue lights on the front of the auto speed brake module, M980 (Figure 201).

(e) If the DS 1 RT OUTBD and DS 2 L OUTBD lights do not come on, then do these steps:

1) Replace the auto speed brake module, M980. These are the tasks:

- Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801
- Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801

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(f) If the DS 1 RT OUTBD light does not come on, then do these steps:

1) Release the ENABLE/VERIFY switch and toggle switch.
2) Put the rotary switch on the antiskid/autobrake control unit to the NORM position.
3) Repair the wiring between these pins of connector D2586B at the E4-2 shelf and connector D1040A at the E1-3 shelf (WDM 27-62-11):

D2586B	D1040A
pin 47	pin D13

(g) If the DS 2 L OUTBD light does not come on, then do these steps:

1) Release the ENABLE/VERIFY switch and toggle switch.
2) Put the rotary switch on the antiskid/autobrake control unit to the NORM position.
3) Repair the wiring between these pins of connector D2586B at the E4-2 shelf and connector D1040A at the E1-3 shelf (WDM 27-62-11):

D2586B	D1040A
pin 39	pin A11

(h) If the DS 1 RT OUTBD and DS 2 L OUTBD lights come on, then continue.

(i) Set the rotary switch on the antiskid/autobrake control unit to the INBD position.

(j) Look at the four blue lights on the front of the auto speed brake module, M980.

(k) If the DS 3 L INBD and DS 4 RT INBD lights do not come on, then do these steps:

1) Replace the auto speed brake module, M980. These are the tasks:
   - Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801
   - Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801

(l) If the DS 3 L INBD light does not come on, then do these steps:

1) Release the ENABLE/VERIFY switch and toggle switch.
2) Put the rotary switch on the antiskid/autobrake control unit to the NORM position.
3) Repair the wiring between these pins of connector D2586B at the E4-2 shelf and connector D1040A at the E1-3 shelf (WDM 27-62-11):

D2586B	D1040A
pin 33	pin A9

(m) If the DS 4 RT INBD light does not come on, then do these steps:

1) Release the ENABLE/VERIFY switch and toggle switch.
2) Put the rotary switch on the antiskid/autobrake control unit to the NORM position.
3) Repair the wiring between these pins of connector D2586B at the E4-2 shelf and connector D1040A at the E1-3 shelf (WDM 27-62-11):

D2586B	D1040A
pin 31	pin D10

——————— END OF TASK ———————

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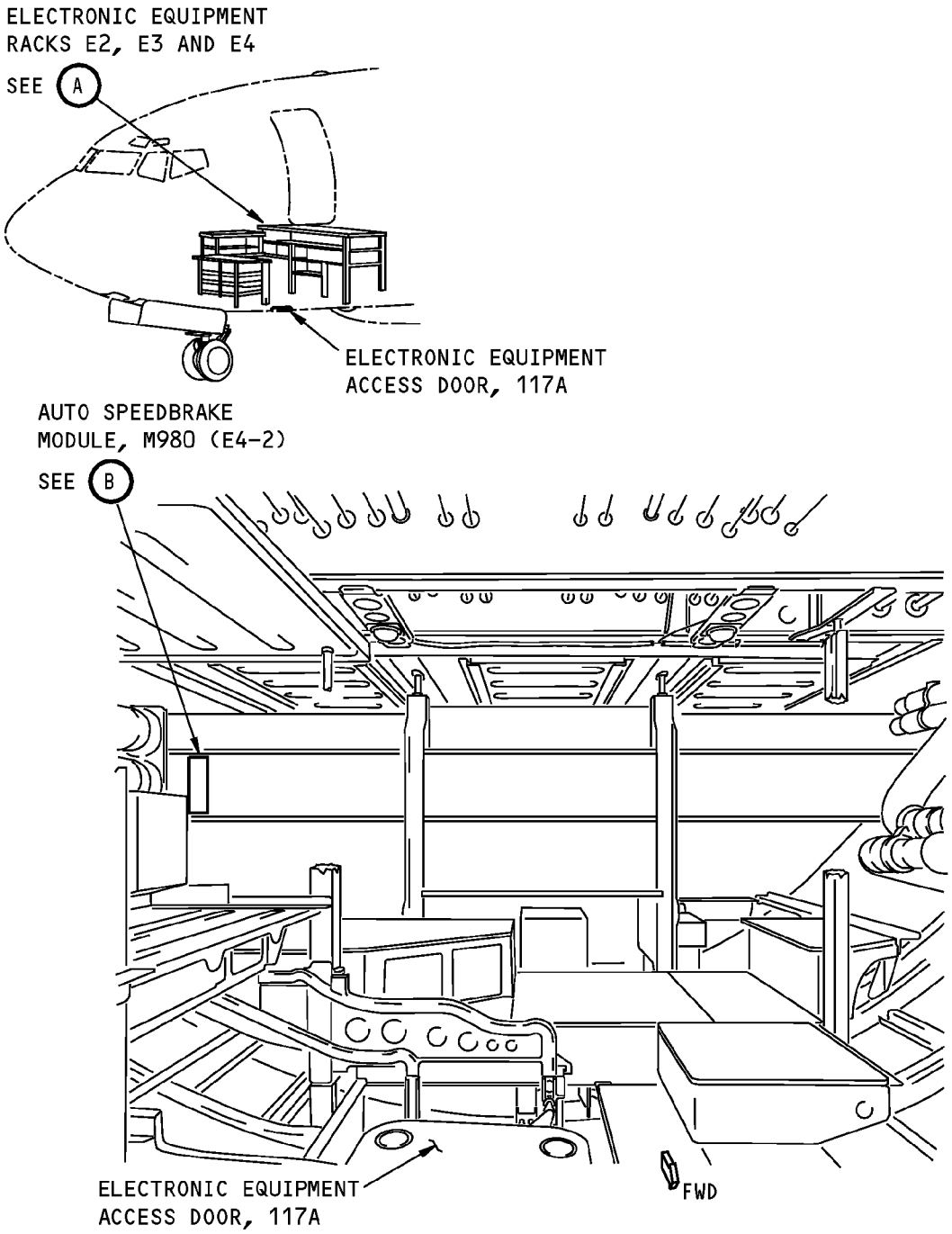

Auto Speedbrake Module, M980
Figure 201 (Sheet 1 of 2)/ 27-62-00-990-801

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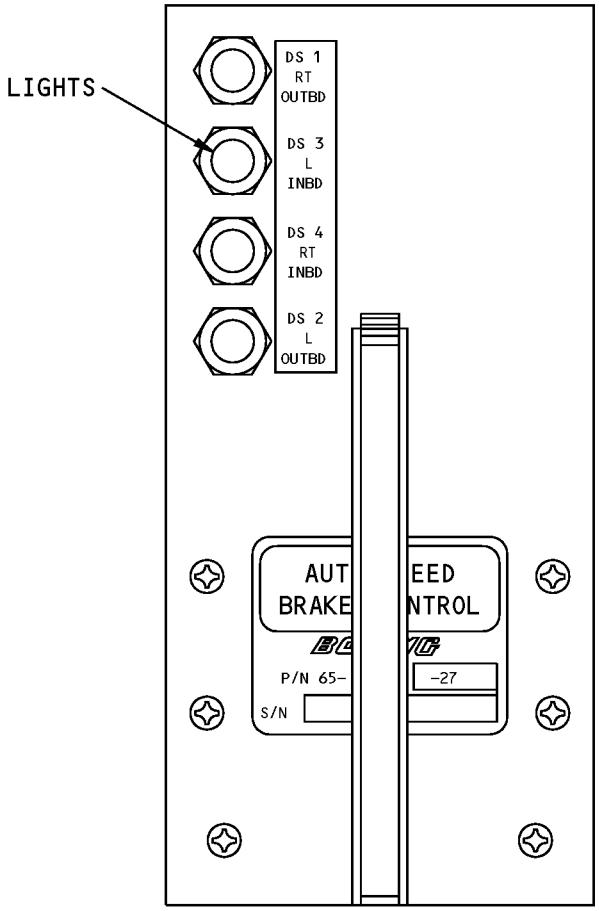

AUTO SPEEDBRAKE MODULE, M980 (E4-2)

B

Auto Speedbrake Module, M980
Figure 201 (Sheet 2 of 2)/ 27-62-00-990-801

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802. SPEED BRAKE DO NOT ARM Light is ON - Fault Isolation

A. Description

HAP 001-013, 015-023, 101-999

(1) If the SPEED BRAKE DO NOT ARM light came on while the Autostow Actuator was activated (airspeed greater than 320 knots and gross weight greater than 143,00 pounds), do this task: Speedbrake DO NOT ARM Light Is On (While Using the Autostow Actuator) - Fault Isolation, 27-62 TASK 811.

HAP ALL

(2) The SPEED BRAKE DO NOT ARM light comes on whenever the speed brake lever is moved to the ARMED position and at least one of these conditions occurs:

(a) Two anti-skid channels are off or inoperative.

(b) The speed brake lever actuator is not fully retracted to the speed brake lower position.

(c) The auto speed brake module, M980 does not operate correctly.

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(d) The switches do not function properly

(e) The relays do not function properly.

(3) The SPEED BRAKE DO NOT ARM light will come on whenever the speed brake handle is manually stowed during a landing sequence and all of these conditions occur:

(a) Either speed brake ARM is true or reverse thrust is true

(b) Wheel speed is greater than 60 knots

(c) Aircraft on ground

(d) Autothrottles retracted

HAP ALL

B. Possible Causes

(1) Antiskid/autobrake control unit, M162

(2) Auto speed brake module, M980

(3) Speed brake lever actuator, M359

(4) Wiring problem

HAP 037-054

(5) Switches: S918, S1131

(6) Relays: R588, R964, R965, R966, R967, R968, R969, R970

HAP ALL

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
HAP 037-054			
A	5	C01663	SPOILER PCU SOV SYS B
HAP ALL			
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

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F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

(1) (SSM 27-62-11)

(2) (WDM 27-62-11)

E. Initial Evaluation

(1) Do these steps to activate the auto speed brake system:

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

(c) Move the No. 1 and No. 2 thrust lever to the idle position.

WARNING: MAKE SURE THAT YOU PREPARE FOR THE AIR MODE BEFORE YOU OPEN THE CIRCUIT BREAKER THAT FOLLOWS. AUTOMATIC OPERATION OF THE AIRPLANE SYSTEMS IN THE AIR MODE CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(e) Make sure the ground spoilers are full down.

(f) Make sure the speed brake lever is in the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(h) Move one of the thrust levers to full forward.

(i) Move the thrust lever back to the idle position.

(2) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

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(a) Set the rotary switch on the antiskid/autobrake control unit, M162 to INBD or OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

(b) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(c) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(3) Move the speed brake lever to the ARMED position.

(4) Wait 5 seconds.

NOTE: The circuit has a time delay.

HAP 001-013, 015-026, 028-036, 101-999

(5) If the SPEED BRAKE DO NOT ARM light does not come on, then there was an intermittent fault. Do these steps to complete the task:

(a) Release the ENABLE/VERIFY switch and the toggle switch.

(b) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(c) Move the speed brake lever to the DOWN position.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(e) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-62-00-840-801.

HAP ALL

(6) If the SPEED BRAKE DO NOT ARM light comes on, then do the Fault Isolation Procedure (light illuminates) below.

(a) Release the ENABLE/VERIFY switch and the toggle switch.

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(7) If the SPEED BRAKE DO NOT ARM light does not come on, then do the Fault Isolation Procedure (light does not illuminate) below.

HAP ALL

F. Fault Isolation Procedure (light illuminates)

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(1) Check the flight spoilers:

(a) If all eight flight spoilers are extended to approximately 60 degrees, do these steps:

1) Check for continuity between pins D1 and D2 of relay R588:

a) If there is continuity between pins D1 and D2, then replace the relay R588 and do the repair confirmation at the end of this task.

b) If there is no continuity between pins D1 and D2, then continue with the fault isolation.

2) Open and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	5	C01663	SPOILER PCU SOV SYS B

a) Wait 5 seconds.

NOTE: The circuit has a time delay.

b) If the SPEED BRAKE DO NOT ARM light is on, then continue with the fault isolation.

c) If the SPEED BRAKE DO NOT ARM light is off, then the light was set because the speedbrake handle was manually stowed during the landing before the wheel speed went below 60 kts, or there was an intermittent fault. Do the repair confirmation at the end of this task.

3) Check for continuity between pins A1 and A2 of relay R969:

a) If there is continuity between pins A1 and A2, then replace the relay R969 and do the repair confirmation at the end of this task.

b) If there is no continuity between pins A1 and A2, then continue to with the fault isolation.

4) Do a wiring check between each of the following pairs of connector pins:

D13950 pin X2	- - - - - - - - - - - - - - - - -	**D13948** pin A3
D13948 pin C2	- - - - - - - - - - - - - - - - -	**D11010** pin D1
D13950 pin X2	- - - - - - - - - - - - - - - - -	**D13952** pin A1
D13952 pin A2	- - - - - - - - - - - - - - - - -	**D13946** pin D3
D13950 pin X2	- - - - - - - - - - - - - - - - -	**D13946** pin A1
D13946 pin A2	- - - - - - - - - - - - - - - - -	**D13944** pin C3

a) If you find a problem, then repair the wiring and do the Repair Confirmation at the end of this task.

b) If you do not find any problem, then there was an intermittent fault. Do the Repair Confirmation at the end of this task:

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(b) If only four of the flight spoilers are extended 60 degrees, do these steps:

1) Inspect the relay, either R964 or R965, that is connected to the flight spoilers that are not extended 60 degrees.

NOTE: Relay R964 is connected to spoilers No. 2, 4, 9 and 11. Relay R965 is connected to spoilers No. 3, 5, 8, and 10.

2) Check for loose wires and connections.

3) Make sure that pin X2 is connected to ground.

4) If there is a problem with the wiring repair the problem.

5) If there is not a problem with the wiring, replace the relay.

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

(c) If none of the flight spoilers are extended 60 degrees, continue with the fault isolation.

(2) Do this wiring check between the following pairs of connector pins at the speed brake lever actuator, M359, and the auto speed brake module, M980.

D2586A		D1084
26	- -	5

D2586B		D1084
5	- -	3

(a) If you find a problem with the wiring, do these steps:

1) Repair the wiring.

2) Do the repair confirmation at the end of this task.

(b) If you do not find a problem with wiring, continue with the fault isolation.

(3) Check for continuity between pins B and C on the Speedbrake Ground Proximity Switch S1131:

(a) If there is no continuity between pins B and C, then replace switch S1131 and do the Repair Confirmation at the end of this task.

(b) If there is continuity between pins B and C, then continue with the fault isolation.

(4) Check the voltage between pins X1 and X2 of connector D13948 at relay R968:

(a) If the voltage between pins X1 and X2 is not 28V, then check the wiring for loose connections.

1) Repair the wiring as needed and do the Repair Confirmation at the end of this task.

(b) If the voltage between pins X1 and X2 is 28V, then continue with the fault isolation.

(5) Check the voltage between pins X1 and B2 on connector D13948 at relay R968:

(a) If the voltage between pins X1 and B2 is not 28V, then check the voltage between pins X1 and X2 of connector D13946 at R967:

1) If the voltage between pins X1 and X2 on connector D13946 is 28V, then replace relay R967 and do the Repair Confirmation at the end of this task.

2) If the voltage between pins X1 and X2 on connector D13946 is not 28V, then check the circuitry for loose wires and connections, and make sure R967 is connected to ground.

a) If you find any problems, repair the wiring as needed and do the Repair Confirmation at the end of this task.

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HAP 037-054 (Continued)

b) If you do not find any problems, replace switch S918 and do the Repair Confirmation at the end of this task.

(b) If the voltage between pins X1 and B2 on connector D13948 is 28V, then continue with the fault isolation.

(6) Check the voltage between pins X1 and A2 on connector D13948 at relay R968:

(a) If the voltage between pins X1 and A2 is 28V, then replace relay R968 and do the Repair Confirmation at the end of this task.

(b) If the voltage between pins X1 and A2 is not 28V, then continue with the fault isolation.

(7) Check the voltage between pins X1 and X2 of connector D13944 at relay R966:

(a) If the voltage between pins X1 and X2 is 28V, then replace relay R966 and do the Repair Confirmation at the end of this task.

(b) If the voltage between pins X1 and X2 is not 28V, then check the wiring for loose wires or connections.

1) If you find a problem, repair the wiring and do the Repair Confirmation at the end of this task.

2) If you do not find a problem, continue with the fault isolation.

HAP ALL

(8) Do this check of the antiskid control unit, M162:

(a) Look at the four blue lights on the auto speed brake module.

(b) Make sure that the rotary switch is in the INBD or OUTB position.

(c) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(d) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(e) If two of the four blue lights on the auto speed brake module are not on, then do this task: Auto Speed Brake/Antiskid Interface Test, 27-62 TASK 801.

1) If you find a problem, then do the corrective action in this task: Auto Speed Brake/Antiskid Interface Test, 27-62 TASK 801.

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

(f) If two of the four lights on the auto speed brake module are on, then continue with the fault isolation.

(9) Do this check of the speed brake lever actuator, M359:

(a) Disconnect connector D1084 from the speed brake lever actuator, M359.

(b) Do a continuity check between pins 7 and 1 of connector D1084.

(c) If there is no continuity between pins 7 and 1 of connector D1084, adjust the speed brake lever brake backlash:

1) Do this task: Speed Brake Lever Brake Backlash Adjustment, AMM TASK 27-62-00-000-802.

2) Repeat the continuity check between pins 7 and 1 of connector D1084

3) If there is still no continuity between pins 7 and 1, replace the speed brake lever actuator, M359. These are the tasks:

- Auto Speed Brake Actuator Removal, AMM TASK 27-62-31-000-801

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- Auto Speed Brake Actuator Installation, AMM TASK 27-62-31-400-801

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

(d) If there is continuity between pins 7 and 1 of connector D1084, then continue with the fault isolation.

HAP 001-013, 015-026, 028-036, 101-999

(10) Do this wiring check between the following pairs of connector pins at the speed brake lever actuator, M359, and the auto speed brake module, M980.

D2586A		D1084
26	- -	5

D2586B		D1084
5	- -	3

(a) If you find a problem with the wiring, do these steps:

1) Repair the wiring.

2) Do the repair confirmation at the end of this task.

(b) If you do not find a problem with wiring, continue with the fault isolation.

HAP ALL

(11) Install a new auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

(a) Reconnect connector D1084 to the auto speedbrake lever actuator, M359.

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

1) If there is still a problem, then continue with the fault isolation.

(12) Replace the auto speed brake lever actuator, M359. These are the tasks:

- Auto Speed Brake Actuator Removal, AMM TASK 27-62-31-000-801
- Auto Speed Brake Actuator Installation, AMM TASK 27-62-31-400-801

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

HAP 037-054

G. Fault Isolation Procedure (light does not illuminate)

(1) Do these steps:

(a) Release the ENABLE/VERIFY switch and the toggle switch.

(b) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(c) Move the speed brake lever to the DOWN position.

(2) Put the speed brake lever in the ARM position.

(a) Wait 5 seconds.

NOTE: The circuit has a time delay.

(b) If the SPEED BRAKE DO NOT ARM light comes on, then replace the relay R970 and do the Repair Confirmation at the end of this task.

(c) If the SPEED BRAKE DO NOT ARM light does not come on, then continue with the fault isolation.

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HAP 037-054 (Continued)

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	4	C01662	SPOILER PCU SOV SYS A

(a) Wait 5 seconds.

NOTE: The circuit has a time delay.

(4) If the SPEED BRAKE DO NOT ARM light comes on, then do the steps below.

(a) Check for continuity between pins A1 and A2 of relay R964:

1) If there is continuity between pins A1 and A2, then replace relay R964 and do the Repair Confirmation at the end of this task.

2) If there is no continuity between pins A1 and A2 of relay R964, then continue with the fault isolation.

(b) Check for continuity between pins A1 and A2 of relay R965:

1) If there is continuity between pins A1 and A2, then replace relay R965 and do the Repair Confirmation at the end of this task.

2) If there is no continuity between pins A1 and A2 of relay R965, then continue with the fault isolation.

(c) Check for continuity between pins A1 and A2 of relay R967:

1) If there is continuity between pins A1 and A2, then replace relay R967 and do the Repair Confirmation at the end of this task.

2) If there is no continuity between pins A1 and A2 of relay R967, then continue with the fault isolation.

(d) Check for continuity between pins A1 and A2 of relay R966:

1) If there is continuity between pins A1 and A2, then replace the relay R966 and do the Repair Confirmation at the end of this task.

2) If there is no continuity between pins A1 and A2 of relay R966, then continue with the fault isolation.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	4	C01662	SPOILER PCU SOV SYS A

(6) If the SPEED BRAKE DO NOT ARM light does not come on, then do the steps below.

(a) Check for continuity between pins A1 and A2 on relay R968:

1) If there is continuity between pins A1 and A2, then replace the relay R968 and do the Repair Confirmation at the end of this task.

2) If there is no continuity between pins A1 and A2 on relay R968, then replace the Ground Proximity Switch S1131 and do the Repair Confirmation at the end of this task.

HAP ALL

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H. Repair Confirmation

(1) Do these steps to activate the auto speed brake system:

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

(c) Move the No. 1 and No. 2 thrust lever to the idle position.

WARNING: MAKE SURE THAT YOU PREPARE FOR THE AIR MODE BEFORE YOU OPEN THE CIRCUIT BREAKER THAT FOLLOWS. AUTOMATIC OPERATION OF THE AIRPLANE SYSTEMS IN THE AIR MODE CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(e) Make sure the ground spoilers are full down.

(f) Make sure the speed brake lever is in the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(h) Move one of the thrust levers to full forward.

(i) Move the thrust lever back to the idle position.

(2) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

(a) Set the rotary switch on the antiskid/autobrake control unit, M162 to INBD or OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

(b) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(c) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(3) Move the speed brake lever to the ARMED position.

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(4) If the SPEED BRAKE DO NOT ARM light does not come on, then you corrected the fault. Do these steps to complete the task:

(a) Release the ENABLE/VERIFY switch and the toggle switch.

(b) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(c) Move the speed brake lever to the DOWN position.

(d) Move one of the thrust levers to full forward.

(e) Move the thrust lever back to the idle position.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(g) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-62-00-840-801.

———————— END OF TASK ————————

803. SPEED BRAKE ARMED Light Does Not Operate - Fault Isolation

A. Description

(1) The SPEED BRAKE ARMED light comes on whenever the speed brake lever is moved to the ARMED position and at least one of these conditions occurs:

(a) Two anti-skid channels are operative.

(b) The speed brake lever actuator is fully retracted to the speed brake lower position.

(c) The auto speed brake module, M980 operate correctly.

B. Possible Causes

(1) SPEED BRAKE ARMED light, L2

(2) Wiring problem

(3) Speed brake arm switch, S276

(4) Auto speed brake module, M980

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

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D. Related Data

(1) (SSM 27-62-11)

(2) (WDM 27-62-11)

E. Initial Evaluation

(1) Do these steps to activate the auto speed brake system:

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

(c) Move the No. 1 and No. 2 thrust lever to the idle position.

WARNING: MAKE SURE THAT YOU PREPARE FOR THE AIR MODE BEFORE YOU OPEN THE CIRCUIT BREAKER THAT FOLLOWS. AUTOMATIC OPERATION OF THE AIRPLANE SYSTEMS IN THE AIR MODE CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(e) Make sure the ground spoilers are full down.

(f) Make sure the speed brake lever is in the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(h) Move one of the thrust levers to full forward.

(i) Move the thrust lever back to the idle position.

(2) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

(a) Set the rotary switch on the antiskid/autobrake control unit, M162 to INBD or OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

(b) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

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(c) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(3) Move the speed brake lever to the ARMED position.

(4) If the SPEED BRAKE ARMED light comes on, then there was an intermittent fault. Do these steps to complete the task:

(a) Release the ENABLE/VERIFY switch and the toggle switch.

(b) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(c) Move the speed brake lever to the DOWN position.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(e) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-62-00-840-801.

(5) If the SPEED BRAKE ARMED light does not come on, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the SPEED BRAKE ARMED light, L2:

(a) At the captain's main instrument panel, P1, set the switch for the master dim and test lights to TEST.

(b) If the SPEED BRAKE ARMED light does not come on, then do these steps:

1) Replace the SPEED BRAKE ARMED light, L2.

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

(c) If the SPEED BRAKE ARMED light comes on, then continue.

(2) Do this voltage check at the auto speed brake module:

(a) Move the speed brake lever to the ARMED position.

(b) Remove the auto speed brake module, M980. To remove it, do this task: Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801.

(c) Do a check for 28v DC from pin 8 of connector D2586A to structure ground.

(d) If there is 28v DC at pin 8 of connector D2586A, then do these steps:

1) Remove the captain's instrument panel, P1-3.

2) Disconnect connector D895 from the captain's instrument panel, P1-3.

3) Do a wiring check between these pins on connector D2586A at the E4-2 shelf and connector D895 at the captain's instrument panel, P1-3:

D2586A		**D895**
pin 40	- - - - - - - - - - - - - - - - - -	pin 5

4) If you find a problem with the wiring, then do these steps:

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a) Repair the wiring.

b) Re-connect connector D895.

c) Re-install the captain's instrument panel, P1-3.

d) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

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

5) If you do not find a problem with the wiring, then do these steps:

a) Re-connect connector D895.

b) Re-install the captain's instrument panel, P1-3.

c) Install a new auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

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

(e) If there is not 28v DC at pin 8 of connector D5286A, then continue.

1) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

(3) Do the voltage check of the speed brake arm switch, S276:

(a) Disconnect connector D10199 from the speed brake arm switch, S276.

(b) Do a check for 28v DC from pin 7 of connector D10199 to structure ground.

(c) If there is not 28v DC at pin 7 of connector D10199, then do these steps:

1) Do a check of 28v DC from the load terminal of this circuit breaker, C440, to structure ground:

a) This is the circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

2) If there is not 28v DC at circuit breaker, C440, then do these steps:

a) Replace the circuit breaker, C440.

b) Reconnect connector D10199.

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

3) If there is 28v DC at circuit breaker, C440, then do these steps:

a) Repair the wiring between these pin 7 of connector D10199 at speed brake arm switch, S276 to the load terminal of circuit breaker C440.

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

(d) If there is 28v DC at pin 7 of connector D10199, then continue.

(4) Do this wiring check:

(a) Remove the auto speed brake module, M980. To remove it, do this task: Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801.

(b) Do a wiring check between these pins on connector D2586A at the E4-2 shelf and connector D10199 at the speed brake arm switch S276:

D2586A		D10199
pin 8	- - - - - - - - - - - - - - - - - -	pin 5

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(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D10199.

3) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

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

(d) If you do not find a problem with the wiring, then continue.

1) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

(5) Replace the speed arm switch, S276. These are the tasks:

- Speed Brake Armed Switch and Speed Brake Handle Position Switch Removal, AMM TASK 27-62-34-000-801
- Speed Brake Armed Switch and Speed Brake Handle Position Switch Installation, AMM TASK 27-62-34-400-801

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

G. Repair Confirmation

(1) Do these steps to activate the auto speed brake system:

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

(c) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

(d) Move the No. 1 and No. 2 thrust lever to the idle position.

WARNING: MAKE SURE THAT YOU PREPARE FOR THE AIR MODE BEFORE YOU OPEN THE CIRCUIT BREAKER THAT FOLLOWS. AUTOMATIC OPERATION OF THE AIRPLANE SYSTEMS IN THE AIR MODE CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

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(f) Make sure the ground spoilers are full down.

(g) Make sure the speed brake lever is in the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(i) Move one of the thrust levers to full forward.

(j) Move the thrust lever back to the idle position.

(2) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

(a) Set the rotary switch on the antiskid/autobrake control unit, M162 to INBD or OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

(b) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(c) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(3) Move the speed brake lever to the ARMED position.

(4) If the SPEED BRAKE ARM light comes on, then you corrected the fault. Do these steps to complete the task:

(a) Release the ENABLE/VERIFY switch and the toggle switch.

(b) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(c) Move the speed brake lever to the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(e) Move one of the thrust levers to full forward.

(f) Move the thrust lever back to the idle position.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(h) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-62-00-840-801.

——————— END OF TASK ———————

804. Speed Brake Auto Extend Does Not Operate - Fault Isolation

A. Description

(1) The speed brakes auto extend operate whenever the speed brake lever is moved to the ARMED position and all of these conditions occur:

(a) The main landing gear is on the ground or the main landing gear wheels spin up

(b) The left and right thrust levers are at idle

(c) Aircraft altitude is less than 10 feet (3 meters).

B. Possible Causes

(1) Antiskid/autobrake control unit, M162

(2) Speed brake lever actuator, M359

(3) Wiring problem

(4) Auto speed brake module, M980

(5) Radio altitude < 10 FT A relay, R710

(6) Radio altitude < 10 FT B relay, R709

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

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D. Related Data

(1) (SSM 27-62-11)

(2) (WDM 27-62-11)

E. Initial Evaluation

(1) Do these steps to activate the auto speed brake extend:

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

(c) Move the No. 1 and No. 2 thrust lever to the idle position.

WARNING: MAKE SURE THAT YOU PREPARE FOR THE AIR MODE BEFORE YOU OPEN THE CIRCUIT BREAKER THAT FOLLOWS. AUTOMATIC OPERATION OF THE AIRPLANE SYSTEMS IN THE AIR MODE CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(e) Make sure the ground spoilers are full down.

(f) Make sure the speed brake lever is in the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(h) Move one of the thrust levers to full forward.

(i) Move the thrust lever back to the idle position.

(2) Move the speed brake lever to the ARMED position.

(3) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

(a) Set the rotary switch on the antiskid/autobrake control unit, M162 to INBD or OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

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(b) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(c) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(4) Make sure the speed brake lever moves to the full UP position.

(5) Make sure the flight spoilers and ground spoilers move to the full up position.

(6) If the speed brake lever moves to the full up position, then there was an intermittent fault. Do these steps to complete the task:

(a) Release the ENABLE/VERIFY switch and the toggle switch.

(b) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(c) Move the speed brake lever to the DOWN position.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(e) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-62-00-840-801.

(7) If the flight spoilers and ground spoilers do not move to the full up position, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the antiskid control unit, M162:

(a) Set the speed brake lever to the ARM position.

(b) Look at the four blue lights on the auto speed brake module.

(c) Make sure that the rotary switch is in the INBD or OUTB position.

(d) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(e) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(f) If two of the four blue lights on the auto speed brake module are not on, then do this task: (Auto Speed Brake/Antiskid Interface Test, 27-62 TASK 801).

1) If you find a problem, then do the corrective action in the: Auto Speed Brake/Antiskid Interface Test.

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

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

(g) If two of the four lights on the auto speed brake module are on, then continue.

(2) Do this check of the auto speed brake actuator, M359:

(a) Disconnect connector D1084 from the auto speed brake actuator, M359.

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(b) Do a continuity check between pins 7 and 1 of connector D1084 at the auto speed brake actuator, M359.

(c) If there is no continuity between pins 7 and 1 of connector D1084, then do these steps:

1) Replace the auto speed brake actuator, M359. These are the tasks:
- Auto Speed Brake Actuator Removal, AMM TASK 27-62-31-000-801
- Auto Speed Brake Actuator Installation, AMM TASK 27-62-31-400-801

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

(d) If there is continuity between pins 7 and 1 of connector D1084, then continue.

(3) Do this wiring check:

(a) Disconnect connector D1084 from the auto speed brake actuator, M359.

(b) Remove the auto speed brake module, M980. To remove it, do this task: Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801.

(c) Do a wiring check between these pins on connectors D2586A and D2586B at the E4-2 shelf and connector D1084 at the speed brake lever actuator, M359:

D2586A		D1084
pin 26	- - - - - - - - - - - - - - - - - -	pin 5

D2586B		D1084
pin 12	- - - - - - - - - - - - - - - - - -	pin 7

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1084 to the auto speed brake actuator, M359.

3) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

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

(e) If you do not find a problem with the wiring, then continue.

(4) Do this wiring check:

HAP 001, 006, 007

(a) Do a wiring check between these pins on connector D2586A at the E4-2 shelf and terminal block TB602 at the STA 261:

D2586A		TB602
pin 8	- - - - - - - - - - - - - - - - - -	term YB59

HAP 002-005, 008-013, 015-026, 028-054, 101-999

(b) Do a wiring check between these pins on connector D2586A at the E4–2 shelf and terminal block TB664 in the J46 junction box:

D2586A		TB664
pin 8	- - - - - - - - - - - - - - - - - -	term YA5

HAP ALL

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

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

(d) If you do not find a problem with the wiring, then continue.

(5) Install a new auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

(a) Re-connect connector D1084 to the auto speed brake lever actuator, M359.

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

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

(6) Do this wiring check:

(a) Disconnect connector D10569 from the speed brake actuator enable relay R708 on junction box J20

(b) Disconnect connector D10571 from the RA < 10FT B relay R709 on junction box J22

(c) Disconnect connector D10573 from the RA < 10FT A relay R710 on junction box J20

(d) Do a wiring check between these pins on connector D10569 at the speed brake actuator enable relay R708 and connector D10571 on the RA < 10FT B relay R709

D10569		**D10571**
pin X2	- - - - - - - - - - - - - - - - - -	pin A1

(e) Do a wiring check between these pins on connector D10569 at the speed brake actuator enable relay R708 and connector D10573 on the RA < 10FT A relay R710

D10569		**D10573**
pin X2	- - - - - - - - - - - - - - - - - -	pin A1

(f) If you find a problem with the wiring, then do these steps:

1) Repair the wiring

2) Reconnect connector D10573 to the RA < 10FT A relay R710 on the junction box J20

3) Reconnect connector D10571 to the RA < 10FT B relay R709 on the junction box J22

4) Reconnect connector D10569 to the speed brake actuator enable relay R708 on the junction box J20

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

(g) If you do not find a problem with the wiring, then continue.

(7) Do these steps:

(a) Replace the RA < 10 FT A relay R710

(b) Reconnect connector D10573 to the RA < 10FT A relay R710 on the junction box J20

(c) Reconnect connector D10571 to the RA < 10FT B relay R709 on the junction box J22

(d) Reconnect connector D10569 to the speed brake actuator enable relay R708 on the junction box J20

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

1) If the Repair Confirmation is not satisfactory, continue

(f) Replace the RA < 10 FT B relay R709

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

G. Repair Confirmation

(1) Do these steps to activate the auto speed brake system:

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(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

(d) Move the No. 1 and No. 2 thrust lever to the idle position.

WARNING: MAKE SURE THAT YOU PREPARE FOR THE AIR MODE BEFORE YOU OPEN THE CIRCUIT BREAKER THAT FOLLOWS. AUTOMATIC OPERATION OF THE AIRPLANE SYSTEMS IN THE AIR MODE CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(f) Make sure the ground spoilers are full down.

(g) Make sure the speed brake lever is in the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(i) Move one of the thrust levers to full forward.

(j) Move the thrust lever back to the idle position.

(2) Move the speed brake lever to the ARMED position.

(3) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

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(a) Set the rotary switch on the antiskid/autobrake control unit, M162 to INBD or OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

(b) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(c) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(4) Make sure the speed brake lever moves to the full UP position.

(5) Make sure the flight spoilers and ground spoilers move to the full up position.

(6) If the flight spoilers and ground spoilers move to the full up position, then you corrected the fault. Do these steps to complete the task:

(a) Release the ENABLE/VERIFY switch and the toggle switch.

(b) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(c) Move the speed brake lever to the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(e) Move one of the thrust levers to full forward.

(f) Move the thrust lever back to the idle position.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(h) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-62-00-840-801.

———————— END OF TASK ————————

805. Speed Brake Auto Retract Does Not Operate - Fault Isolation

A. Description

(1) The speed brakes auto retract operates when one of the thrust levers is more than the idle position.

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B. Possible Causes

(1) Speed brake lever actuator, M359

(2) Wiring problem

(3) Auto speed brake module, M980

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

(1) (SSM 27-62-11)

(2) (WDM 27-62-11)

E. Initial Evaluation

(1) Do these steps to activate the auto speed brake retract:

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

(c) Move the No. 1 and No. 2 thrust lever to the idle position.

WARNING: MAKE SURE THAT YOU PREPARE FOR THE AIR MODE BEFORE YOU OPEN THE CIRCUIT BREAKER THAT FOLLOWS. AUTOMATIC OPERATION OF THE AIRPLANE SYSTEMS IN THE AIR MODE CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(e) Make sure the ground spoilers are full down.

(f) Make sure the speed brake lever is in the DOWN position.

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WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(h) Move one of the thrust levers to full forward.

(i) Move the thrust lever back to the idle position.

(2) Move one of the reverse thrust levers to the REVERSE thrust position.

(a) Make sure the ARMED light comes on.

(3) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

(a) Set the rotary switch on the antiskid/autobrake control unit, M162 to INBD or OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

(b) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(c) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(4) Make sure the speed brake lever moves to the full UP position.

(5) Make sure the flight spoilers and ground spoilers move to the full up position.

(6) Release the ENABLE/VERIFY switch and the toggle switch on the antiskid/autobrake control unit.

(a) Make sure that the ARMED light goes off and the DO NOT ARM light comes on.

(7) Move the reverse thrust lever, that was at the REVERSE thrust position, to the down position.

(8) Move one of the thrust levers forward.

(9) If the speed brake lever moves to the DOWN position, then there was an intermittent fault. Do these steps to complete the task:

(a) Move the reverse thrust lever to the idle position.

(b) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(c) Move the speed brake lever to the DOWN position.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

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F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(e) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-62-00-840-801.

(10) If the speed brake lever does not move to the DOWN position, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the speed brake lever actuator, M359:

(a) Disconnect connector D1084 from the speed brake lever actuator, M359.

(b) Do a continuity check between pins 7 and 1 of connector D1084 at the speed brake lever actuator, M359.

(c) If there is no continuity between pins 7 and 1 of connector D1084, then do these steps:

1) Replace the speed brake lever actuator, M359. These are the tasks:
- Auto Speed Brake Actuator Removal, AMM TASK 27-62-31-000-801
- Auto Speed Brake Actuator Installation, AMM TASK 27-62-31-400-801

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

(d) If there is continuity between pins 7 and 1 of connector D1084, then continue.

(2) Do this wiring check:

(a) Disconnect connector D1084 from the speed brake lever actuator, M359.

(b) Remove the auto speed brake module, M980. To remove it, do this task: Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801.

(c) Do a wiring check between these pins on connector D2586B at the E4-2 shelf and connector D10569 at the speed brake lever actuator, M359:

D2586B		**D1084**
pin 5	- - - - - - - - - - - - - - - - - -	pin 3
pin 26	- - - - - - - - - - - - - - - - - -	pin 5

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connector D1084 to the auto speed brake lever actuator, M359.

3) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

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

(e) If you do not find a problem with the wiring, then continue.

1) Re-connect connector D1084 to the auto speed brake lever actuator, M359.

(3) Do this wiring check:

(a) Do a wiring check between these pins on connector D2586B at the E4-2 shelf and terminal block TB604 at the STA 261:

D2586B		**TB604**
pin 24	- - - - - - - - - - - - - - - - - -	term YB5

(b) If you find a problem with the wiring, then do these steps:

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1) Repair the wiring.
2) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.
3) Do the Repair Confirmation at the end of this task.

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

(4) Install a new auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

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

1) If the Repair Confirmation is not OK, then continue.

(5) Replace the auto speed brake lever actuator, M359. These are the tasks:
- Auto Speed Brake Actuator Removal, AMM TASK 27-62-31-000-801
- Auto Speed Brake Actuator Installation, AMM TASK 27-62-31-400-801

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

G. Repair Confirmation

(1) Do these steps to activate the auto speed brake system:

(a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

(c) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

(d) Move the No. 1 and No. 2 thrust lever to the idle position.

WARNING: MAKE SURE THAT YOU PREPARE FOR THE AIR MODE BEFORE YOU OPEN THE CIRCUIT BREAKER THAT FOLLOWS. AUTOMATIC OPERATION OF THE AIRPLANE SYSTEMS IN THE AIR MODE CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(f) Make sure the ground spoilers are full down.

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(g) Make sure the speed brake lever is in the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(i) Move one of the thrust levers to full forward.

(j) Move the thrust lever back to the idle position.

(2) Move one of the reverse thrust lever to the REVERSE thrust position.

(a) Make sure the ARMED light comes on.

(3) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

(a) Set the rotary switch on the antiskid/autobrake control unit, M162 to INBD or OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

(b) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(c) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(4) Make sure the speed brake lever moves to the full UP position.

(5) Make sure the flight spoilers and ground spoilers move to the full up position.

(6) Release the ENABLE/VERIFY switch and the toggle switch on the antiskid/autobrake control unit.

(a) Make sure that the ARMED light goes off and the DO NOT ARM light comes on.

(7) Move the reverse thrust lever, that was at the REVERSE thrust position, to the down position.

(8) Move one of the thrust levers forward.

(9) If the speed brake lever moves to the DOWN position, then you corrected the fault. Do these steps to complete the task:

(a) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(b) Move the speed brake lever to the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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(WARNING PRECEDES)

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(d) Move one of the thrust levers to full forward.

(e) Move the thrust lever back to the idle position.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(g) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-62-00-840-801.

——————— END OF TASK ———————

806. Speed Brake Lever Chatters - Fault Isolation

A. Description

(1) The pilots use the speed brake lever to move the spoilers.

(2) The speed brake lever sends mechanical inputs to the spoiler ratio changer. The ratio changer sends the inputs to the spoiler mixer. When the speed brake lever moves 31 degrees, the spoiler mixer moves the ground spoiler control valve.

B. Possible Causes

(1) Speed brake forward drum and lever brake

C. Initial Evaluation

(1) Do this check of the speed brake lever:

(a) Move the speed brake lever 3 times through full travel.

(b) If the speed brake lever chatters, then do the Fault Isolation Procedure below.

(c) If the speed brake lever does not chatter, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Do the speed brake actuator lever brake lubrication. To do it, do this task: Speedbrake Lever Brake Assembly Lubrication, AMM TASK 12-22-81-600-801.

(a) Move the speed brake lever 3 times through full travel.

(b) If the speed brake lever does not chatter, then you corrected the fault.

(c) If the speed brake lever chatters, then continue.

(d) Replace the speed brake forward drum and brake lever. These are the tasks:

- Speed Brake Forward Drum and Lever Brake Removal, AMM TASK 27-62-21-000-801

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- Speed Brake Forward Drum and Lever Brake Installation, AMM TASK 27-62-21-400-801

(e) Move the speed brake lever 3 times through full travel.

(f) If the speed brake lever does not chatter, then you corrected the fault.

——————— END OF TASK ———————

807. Speed Brake Lever Does Not Move Freely - Fault Isolation

A. Description

(1) The pilots use the speed brake lever to move the spoilers.

(2) The speed brake lever sends mechanical inputs to the spoiler ratio changer. The ratio changer sends the inputs to the spoiler mixer. When the speed brake lever moves 31 degrees, the spoiler mixer moves the ground spoiler control valve.

B. Possible Causes

(1) Speed brake lever sticks or binds.

(2) Speed brake control cables

(3) Speed brake forward drum and lever brake

(4) Spoiler mixer

(5) Spoiler ratio changer

(6) Ground spoiler control valve

C. Initial Evaluation

(1) Do this check of the speed brake lever:

(a) Move the speed brake lever 3 times through full travel.

(b) If the speed brake lever does not move freely, then do the Fault Isolation Procedure below.

(c) If the speed brake lever moves freely, then there was an intermittent fault.

D. Fault Isolation Procedure

(1) Lubricate the speed brake control lever.

(a) Mask off the area around the speed brake control lever to protect from overspray.

(b) Generously apply lubricant, D50117 or lubricant, D50116 to the sliding part of the speedbrake control lever. Use an extension straw to allow spray in hard to reach areas.

NOTE: Allow to air dry if possible. The lubricant will dry within minutes; however, the coating will not be cured for several hours depending on the ambient temperature. The lubricant will cure within 6 hours at 77 +/- 3 degrees F (25 +/- 2 degrees C). 24 hours gives the best wear and corrosion protection.

(c) If the lever no longer sticks or binds, then you have corrected the fault.

(2) Do a check of the speed brake control cables. To do it, do this task: Inspection of the Control Cable Wire Rope, AMM TASK 20-20-31-200-801.

(a) If you find a problem with the speed brake control cables, then do these steps:

1) Replace or repair the speed brake control cables. These are the tasks:

- Control Cables Removal, AMM TASK 20-10-91-000-801
- Control Cables Installation, AMM TASK 20-10-91-400-801

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2) Move the speed brake lever 3 times through full travel.

3) If the speed brake lever moves freely, then you corrected the fault.

(b) If you do not find a problem with the speed brake control cables, then continue.

(3) Do a tension check of the speed brake control cables. To do it, do this task: Speed Brake Control Cable Adjustment, AMM TASK 27-62-00-820-802.

(a) If the tension of the elevator control cables is low, then do these steps:

1) Re-adjust the speed brake control cables (AMM TASK 27-62-00-820-802).

2) Move the speed brake lever 3 times through full travel.

3) If the speed brake lever moves freely, then you corrected the fault.

(b) If the tension of the speed brake control cables is satisfactory, then continue.

(4) Examine the speed brake forward drum and lever brake for unwanted objects and damaged components.

(a) If you find a problem with the speed brake forward drum and lever brake, then do these steps:

1) Repair or replace the speed brake forward drum and lever brake. These are the tasks:

- Speed Brake Forward Drum and Lever Brake Removal, AMM TASK 27-62-21-000-801
- Speed Brake Forward Drum and Lever Brake Installation, AMM TASK 27-62-21-400-801

2) Move the speed brake lever 3 times through full travel.

3) If the speed brake lever moves freely, then you corrected the fault.

(b) If you do not find a problem with the speed brake forward drum and lever brake, then continue.

(5) Do this check of the spoiler ratio changer:

(a) Do a test of the spoiler mixer no-back assembly. To do it, do this task: Spoiler Ratio Changer No-Back Assembly Test, AMM TASK 27-61-00-820-809.

(b) If the test is not satisfactory, then do these steps:

1) Replace the spoiler ratio changer. These are the tasks:

- Spoiler Ratio Changer Removal, AMM TASK 27-61-31-000-801
- Spoiler Ratio Changer Installation, AMM TASK 27-61-31-400-801

2) Move the speed brake lever 3 times through full travel.

3) If the speed brake lever moves freely, then you corrected the fault.

(c) If the test is satisfactory, then continue.

(6) Do this check of the spoiler control valve:

(a) Disconnect the spoiler mixer control rod at the control valve input lever. To do it, do this task: Ground Spoiler Control Valve Removal, AMM TASK 27-62-41-000-801.

(b) Move the speed brake lever 3 times through full travel.

(c) If the speed brake lever moves freely, then do these steps:

1) Replace the ground spoiler control valve. These are the tasks:

- Ground Spoiler Control Valve Removal, AMM TASK 27-62-41-000-801
- Ground Spoiler Control Valve Installation, AMM TASK 27-62-41-400-801

2) Move the speed brake lever 3 times through full travel.

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3) If the speed brake lever moves freely, then you corrected the fault.

(d) If the speed brake lever does not move freely, then do these:

1) Replace the spoiler mixer. These are the tasks:
- Spoiler Mixer Removal, AMM TASK 27-61-21-000-801
- Spoiler Mixer Installation, AMM TASK 27-61-21-400-801

2) Move the speed brake lever 3 times through full travel.

3) If the speed brake lever moves freely, then you corrected the fault.

———————— END OF TASK ————————

808. Speed Brake Takeoff Warning Signal to PSEU Problems - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-62001 SPDBRK DN FAULT

(b) 27-65004 SPDBRK DOWN

(c) 31-55005 SPDBRK UP

(d) 31-53007 SPDBRK HDL UP

(e) 31-52010 SPDBRK UP FAULT

(2) The proximity switch electronics unit (PSEU) has detected a fault from the speed brake takeoff warning signal.

B. Possible Causes

(1) Wiring problem

(2) Speed brake takeoff warning switch, S651

(3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

(1) (SSM 27-62-21)

(2) (WDM 27-62-21)

E. Initial Evaluation

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

(a) If the maintenance message does not show, then there was an intermittent fault.

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this wiring check:

(a) Disconnect connector D5148P from the speed brake takeoff warning switch, S651.

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(b) Do a wiring check between these pins of connectors D10982 and D10984 at the PSEU and D10984 and connector D5148P at the speed brake takeoff warning switch, S651:

D10984	D5148P
pin 29	pin 12

D10982	D5148P
pin 29	pin 10

(c) Do a check for ground at pin 11 of connector D5148P.

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

a) Repair the wiring.

b) Re-connect connector D5148P.

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

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

(d) If you do not find a problem with the wiring, then continue.

(2) Replace the speed brake takeoff warning switch, S651. These are the tasks:
- Speedbrake Takeoff Warning Switch Removal, AMM TASK 31-51-03-000-801
- Speedbrake Takeoff Warning Switch Installation, AMM TASK 31-51-03-400-801

(a) Re-install the PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

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

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

(d) If the maintenance message shows, then continue.

(3) Replace the PSEU, M2061. These are the tasks:
- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
- Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801

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

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

——————— END OF TASK ———————

809. Speed Brake Handle Position Signal to PSEU Problems - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-62002 SPRK GT ARMD FLT

(b) 27-65003 SBRK GT ARMED

(2) The proximity switch electronics unit (PSEU) has detected a fault from the speed brake handle position switch, S918.

B. Possible Causes

(1) Wiring problem

(2) Speed Brake Handle Position Switch, S918

(3) Proximity switch electronics unit (PSEU), M2061

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

(1) (SSM 27-62-21)

(2) (WDM 27-62-21)

E. Initial Evaluation

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

(a) If the maintenance message does not show, then there was an intermittent fault.

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this wiring check:

(a) Remove the proximity switch electronics unit (PSEU), M2061. To remove it, do this task: Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801.

(b) Disconnect connector D10199 from the speed brake handle position switch, S918.

(c) Do a wiring check between these pins of connector D10986 at the E11 ELEC GEAR AND DOOR SYS LRU and connector D10199 from the speed brake handle position switch, S918:

D10986		**D10199**
pin 3	- - - - - - - - - - - - - - - - - -	pin 11

(d) Do a check for ground at pin 10 of connector D10199.

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

a) Repair the wiring.

b) Re-connect connector D10199.

c) Re-install the PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

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

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

(e) If you do not find a problem with the wiring, then continue.

(2) Replace the speed brake handle position switch, S918. These are the tasks:

- Speed Brake Armed Switch and Speed Brake Handle Position Switch Removal, AMM TASK 27-62-34-000-801
- Speed Brake Armed Switch and Speed Brake Handle Position Switch Installation, AMM TASK 27-62-34-400-801

(a) Re-install the PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

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

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

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(d) If the maintenance message shows, then continue.

(3) Replace the PSEU, M2061. These are the tasks:
- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
- Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801

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

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

——————— END OF TASK ———————

810. Spoiler Deployed Signal to PSEU Problems - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-66001 SPDBRK EXT FLT

(2) The proximity switch electronics unit (PSEU) has detected a fault from the speed brake handle position switch, S918.

B. Possible Causes

(1) SPOILERS DEPLOYED Light, L1

(2) Wiring problem

(3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

(1) (SSM 27-62-21)

(2) (WDM 27-62-21)

E. Initial Evaluation

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

(a) If the maintenance message does not show, then there was an intermittent fault.

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the SPOILERS DEPLOYED light, L1:

(a) At the captain's main instrument panel, P1, set the switch for the master dim and test lights to TEST.

(b) If the SPOILERS DEPLOYED light does not come on, then do these steps:

1) Replace the SPOILERS DEPLOYED light, L2.

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

(c) If the SPOILERS DEPLOYED light comes on, then continue.

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(2) Do this wiring check:

(a) Remove the P3-1 panel.

(b) Disconnect connector D3991 from the SPOILERS DEPLOYED light, L2.

(c) Do a wiring check between these pins of connector D10986 at the PSEU and connector D3991 from the SPOILERS DEPLOYED light, L2:

D3991		D10986
pin 10	- - - - - - - - - - - - - - - - - -	pin 49

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

a) Repair the wiring.

b) Re-connect connector D13991.

c) Re-install the P3-1 panel.

d) Re-install the PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

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

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

(d) If you do not find a problem with the wiring, then continue.

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

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

——————— END OF TASK ———————

HAP 001-013, 015-023, 101-999

811. Speedbrake DO NOT ARM Light Is On (While Using the Autostow Actuator) - Fault Isolation

A. Description

(1) The speedbrake DO NOT ARM light illuminates when one or more of the following conditions occur:

(a) Number 2 SMYD is powered

(b) Power applied to the autostow system and No. 2 SMYD

(c) Power applied to master DIM.

(2) The following SMYD messages may be generated:

(a) 27-62001 Autostow Fault

(b) 27-62002 Internal Autostow

B. Possible Causes

(1) Autostow Actuator

(2) Wiring problem

(3) Autostow Actuator

(4) Defective No. 2 SMYD

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	10	C01611	SPDBRK AUTOSTOW

D. Related Data

(1) (27-32 TASK 801)

E. Initial Evaluation

(1) Check to see if the DO NOT ARM light comes on only when the speedbrake lever is moved to the armed position. If the speedbrake DO NOT ARM light is on all of the time, do the following:

(a) Remove power from the SMYD No. 2 and autostow systems by opening the SMYD breakers and the autostow actuator breaker:

1) This is the circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	10	C01611	SPDBRK AUTOSTOW

(b) Do this task: SPEED BRAKE DO NOT ARM Light is ON - Fault Isolation, 27-62 TASK 802.

1) If the system is satisfactory after doing the above fault isolation, apply power to the SMYD No. 2 and the autostow actuator.

(c) Check the system for SMYD faults, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(d) Run the autostow actuator automatic ground test, do this task: Speedbrake Autostow Actuator Automatic Ground Test, AMM TASK 27-62-33-820-801.

F. Fault Isolation Procedure

(1) Do the following if you get MSG 27-62002 during the SMYD BITE test:

(a) Check the system for SMYD No. 2 faults, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(b) Run the autostow actuator automatic ground test, do this task: Speedbrake Autostow Actuator Automatic Ground Test, AMM TASK 27-62-33-820-801.

(c) If the SMYD in the No. 1 location is a -105 or -106 (on -800 airplanes with no light fence), a -106 (on -800 airplanes with a light fence), or a -106 (on -700 airplanes), swap the No. 1 and No. 2 SMYD locations. To remove and install the SMYDs, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801 or (AMM TASK 27-32-42-400-801).

NOTE: Install the old No. 2 SMYD in the No. 1 SMYD location and install the old No. 1 SMYD in the No. 2 SMYD location. Do not replace SMYD No. 2 with a known good unit until you complete the following steps to check for wiring problems related to SMYD No. 2.

(d) With the SMYD No. 2, M1748, removed, and with master dim and power on, the DO NOT ARM light should not come on.

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(e) If the DO NOT ARM light comes on, check the wiring between the SMYD No. 2 and the and the DO NOT ARM light.

(f) If the speedbrake DO NOT ARM light does not come on, then continue.

1) Replace SMYD No. 2, M1748, with a known good unit.

(g) Do this task: Speedbrake Autostow Actuator - Functional Test, AMM TASK 27-62-33-010-801.

(2) Do the following if you get MSG 27-62001 during the SMYD BITE test:

(a) Do this task: Speedbrake Autostow Actuator - Functional Test, AMM TASK 27-62-33-010-801.

1) While doing the autostow actuator functional test, make sure that the autostow actuator moves speedbrake handle to the 50% position.

2) Make sure that the speedbrake lever can be moved to the full up position with normal feel forces after the completion of the autostow actuator functional test.

(b) If the autostow actuator does not move the speedbrake handle from the UP position, do the following:

1) Do this task: Speedbrake Autostow Actuator - Functional Test, AMM TASK 27-62-33-010-801.

a) While doing the functional test of the autostow actuator, hold the actuator in the "RETRACT POSITION" with the power on.

2) Remove connector, D11841, at the autostow actuator and verify the following:

a) There is continuity at connector D11841, between pins 2 and 4.

b) There is not continuity at connector D11841, between pins 5 and 6.

3) If the above two checks are not satisfactory, replace the autostow actuator. Do this task: Speed Brake Autostow Actuator Removal, AMM TASK 27-62-33-000-801.

4) If the above two checks are satisfactory, check the following pins at the autostow actuator connector, D11841:

a) Check pin 3 for 28V DC.

b) Check pin 1 for a ground.

c) Check pin 7 for 0V DC.

5) If the above three checks are satisfactory, replace the autostow actuator. Do this task: Speed Brake Autostow Actuator Removal, AMM TASK 27-62-33-000-801.

6) If the above three checks are not satisfactory, check the following pins of connector, D11839, of the Auto Stow Retract Relay, R897 located in the P6 control panel:

NOTE: When doing these checks, the actuator should be powered and in the retract position.

a) Check pin A1 for 28V DC.

7) If there is no voltage at pin A1, check the following pins of connector, D11839, of the Auto Stow Retract Relay, R897:

NOTE: If there is no voltage, check to make sure that autostow breaker is closed.

a) Check pin A2 for 28V DC.

b) Check pin X1 for 28V DC.

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c) Check pin X2 for a ground.

8) If the above three checks are satisfactory, replace the Auto Stow Retract Relay, R897.

9) If the above three checks are not satisfactory at pins X1, X2, or A2, do the following checks:

a) Check the wiring for continuity between circuit breaker C1611 on the P6-2 panel and the Auto Stow Retract Relay, R897.

b) Check the wiring for continuity between pin 104 of D3685A at SMYD No. 2, M1748 and and pin X2 of connector D11839 at the Auto Stow Retract Relay, R897.

10) If the above three checks are satisfactory do the following checks:

a) Check the wiring for continuity between pin 3 of the autostow actuator connector, D11841, and and pin A1 of connector D11839 of the Auto Stow Retract Relay, R897.

b) Check the wiring for continuity between pin 7 of the autostow actuator connector, D11841, and and pin A3 of connector D11839 of the Auto Stow Retract Relay, R897.

11) Repair wiring, if required, and repeat the autostow actuator functional test. Do this task: Speedbrake Autostow Actuator - Functional Test, AMM TASK 27-62-33-010-801.

(3) Do the following if the autostow actuator moves or is at the 50% detent and stays there:

(a) Do this task: Speedbrake Autostow Actuator Automatic Ground Test, AMM TASK 27-62-33-820-801.

1) Check the following pins at the autostow actuator connector, D11841:

a) Check pin 7 for 28V DC.

b) Check pin 1 for a ground.

c) Check pin 3 for 0V DC.

2) If the above three checks are satisfactory, replace the autostow actuator. Do this task: Speed Brake Autostow Actuator Removal, AMM TASK 27-62-33-000-801.

3) If the above three checks are not satisfactory, check the following pins of connector, D11839, of the Auto Stow Retract Relay, R897 located in the P6 control panel:

NOTE: When doing these checks, the actuator should be powered and in the extend position.

a) Check pin A3 for 28V DC.

b) Check pin A1 for 0V DC.

4) If the voltage at pins A1 and A3 is not correct, remove the Auto Stow Retract Relay, R897:

a) Check pin A2 for 28V DC.

b) Check pin X1 for 28V DC.

5) If the above two checks are not satisfactory at pins X1 or A2, do the following checks:

a) Check the wiring for continuity between circuit breaker C1611 on the P6-2 panel and the Auto Stow Retract Relay, R897.

b) Check the wiring for continuity between pin 104 of D3685A at SMYD No. 2, M1748 and pin X2 of connector D11839 at the Auto Stow Retract Relay, R897.

c) If the voltage at pin X2 is correct, replace the Auto Stow Retract Relay, R897.

(4) Do the following if the actuator moves as required but the speedbrake DO NOT ARM light is on:

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(a) Do this task: Speedbrake Autostow Actuator - Functional Test, AMM TASK 27-62-33-010-801.

1) While doing the functional test of the autostow actuator, hold the actuator in the "EXTEND POSITION" and do the following checks:

a) There is continuity at connector D11841, between pins 2 and 4.

b) There is not continuity at connector D11841, between pins 5 and 6.

2) If the above two checks are not satisfactory, replace the autostow actuator. Do this task: Speed Brake Autostow Actuator Removal, AMM TASK 27-62-33-000-801.

3) If the above two checks are satisfactory, do the Autostow Actuator Functional Test again, but this time, stop the test with the autostow actuator in the RETRACT position and do the following checks at connector D11841 (with the connector removed):

a) There is not continuity at connector D11841, between pins 2 and 4.

b) There is continuity at connector D11841, between pins 5 and 6.

4) If the above two checks are not satisfactory, replace the autostow actuator. Do this task: Speed Brake Autostow Actuator Removal, AMM TASK 27-62-33-000-801.

5) Check the wiring for damage between pin 6 of D3685B at SMYD No. 2, M1748 and ground to make sure that no short to ground would cause the speedbrake DO NOT ARM light to remain on.

6) Repair wiring, if required, and repeat the autostow actuator functional test and check for proper light illumination. do this task: Speedbrake Autostow Actuator - Functional Test, AMM TASK 27-62-33-010-801.

———————— END OF TASK ————————

812. SPEED BRAKE ARMED Light Does Not Operate During Autostow Actuator Functional Test - Fault Isolation

A. Description

(1) The speed brake DO NOT ARM light remains off during the automatic ground test portion of the Speedbrake Autostow Actuator Functional Test (AMM TASK 27-62-33-010-801).

B. Possible Causes

(1) SPEED BRAKE ARMED light, L2

(2) Wiring problem

(3) Autostow Actuator

(4) SMYD

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	10	C01611	SPDBRK AUTOSTOW

D. Related Data

(1) Do this task: SPEED BRAKE ARMED Light Does Not Operate - Fault Isolation, 27-62 TASK 803.

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(2) (WDM 27-62-11)

E. Initial Evaluation

(1) Verify that the SPEED BRAKE ARMED light does not operate (27-62 TASK 803).

(a) If the speed brake DO NOT ARM light does not operate during this check, do the suggested repairs.

(b) If the speed brake DO NOT ARM light operates during this test, proceed with the following in-flight speed brake autostow evaluation:

1) Check the SMYD for faults, do the BITE procedure per Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

2) Do this task: Speedbrake Autostow Actuator Automatic Ground Test, AMM TASK 27-62-33-820-801.

(2) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

(a) Set the rotary switch on the antiskid/autobrake control unit, M162 to INBD or OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

(b) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(c) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(3) Move the speed brake lever to the ARMED position.

(4) If the SPEED BRAKE ARMED light comes on, then there was an intermittent fault. Do these steps to complete the task:

(a) Release the ENABLE/VERIFY switch and the toggle switch.

(b) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(c) Move the speed brake lever to the DOWN position.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(e) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-62-00-840-801.

(5) If the SPEED BRAKE ARMED light does not come on, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the SPEED BRAKE ARMED light, L2:

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(a) At the captain's main instrument panel, P1, set the switch for the master dim and test lights to TEST.

(b) If the SPEED BRAKE ARMED light does not come on, then do these steps:

1) Replace the SPEED BRAKE ARMED light, L2.

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

(c) If the SPEED BRAKE ARMED light comes on, then continue.

(2) Do this voltage check at the auto speed brake module:

(a) Move the speed brake lever to the ARMED position.

(b) Remove the auto speed brake module, M980. To remove it, do this task: Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801.

(c) Do a check for 28v DC from pin 8 of connector D2586A to structure ground.

(d) If there is 28v DC at pin 8 of connector D2586A, then do these steps:

1) Remove the captain's instrument panel, P1-3.

2) Disconnect connector D895 from the captain's instrument panel, P1-3.

3) Do a wiring check between these pins on connector D2586A at the E4-2 shelf and connector D895 at the captain's instrument panel, P1-3:

D2586A		D895
pin 40	- - - - - - - - - - - - - - - - - -	pin 5

4) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D895.

c) Re-install the captain's instrument panel, P1-3.

d) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

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

5) If you do not find a problem with the wiring, then do these steps:

a) Re-connect connector D895.

b) Re-install the captain's instrument panel, P1-3.

c) Install a new auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

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

(e) If there is not 28v DC at pin 8 of connector D5286A, then continue.

1) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

(3) Do the voltage check of the speed brake arm switch, S276:

(a) Disconnect connector D10199 from the speed brake arm switch, S276.

(b) Do a check for 28v DC from pin 7 of connector D10199 to structure ground.

(c) If there is not 28v DC at pin 7 of connector D10199, then do these steps:

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1) Do a check of 28v DC from the load terminal of the following circuit breaker to structure ground:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

2) If there is not 28v DC at circuit breaker, C440, then do these steps:
   a) Replace the circuit breaker, C440.
   b) Reconnect connector D10199.
   c) Do the Repair Confirmation at the end of this task.
3) If there is 28v DC at circuit breaker, C440, then do these steps:
   a) Repair the wiring between these pin 7 of connector D10199 at speed brake arm switch, S276 to the load terminal of circuit breaker C440.
   b) Do the Repair Confirmation at the end of this task.

(d) If there is 28v DC at pin 7 of connector D10199, then continue.

(4) Do this wiring check:
   (a) Remove the auto speed brake module, M980. To remove it, do this task: Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801.
   (b) Do a wiring check between these pins on connector D2586A at the E4-2 shelf and connector D10199 at the speed brake arm switch S276:

D2586A		D10199
pin 8	- - - - - - - - - - - - - - - - - -	pin 5

   (c) If you find a problem with the wiring, then do these steps:
      1) Repair the wiring.
      2) Re-connect connector D10199.
      3) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.
      4) Do the Repair Confirmation at the end of this task.
   (d) If you do not find a problem with the wiring, then continue.
      1) Re-install the auto speed brake module, M980. To install it, do this task: Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801.

(5) Replace the speed arm switch, S276. These are the tasks:
- Speed Brake Armed Switch and Speed Brake Handle Position Switch Removal, AMM TASK 27-62-34-000-801
- Speed Brake Armed Switch and Speed Brake Handle Position Switch Installation, AMM TASK 27-62-34-400-801

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

G. Repair Confirmation

(1) Do these steps to activate the auto speed brake system:
   (a) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

(c) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

(d) Move the No. 1 and No. 2 thrust lever to the idle position.

WARNING: MAKE SURE THAT YOU PREPARE FOR THE AIR MODE BEFORE YOU OPEN THE CIRCUIT BREAKER THAT FOLLOWS. AUTOMATIC OPERATION OF THE AIRPLANE SYSTEMS IN THE AIR MODE CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(f) Make sure the ground spoilers are full down.

(g) Make sure the speed brake lever is in the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(i) Move one of the thrust levers to full forward.

(j) Move the thrust lever back to the idle position.

(2) Do these steps to activate the antiskid/autobrake control unit to simulate high speed:

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(a) Set the rotary switch on the antiskid/autobrake control unit, M162 to INBD or OUTBD position.

NOTE: The antiskid/autobrake control unit, M162 is on E1-3 shelf in the electronic equipment (EE) compartment.

(b) Push and hold the ENABLE/VERIFY switch on the antiskid/autobrake control unit.

(c) Push and hold the toggle switch on the antiskid/autobrake control unit to the PRESS/TEST position.

(3) Move the speed brake lever to the ARMED position.

(4) If the SPEED BRAKE ARM light comes on, then you corrected the fault. Do these steps to complete the task:

(a) Release the ENABLE/VERIFY switch and the toggle switch.

(b) Set the rotary switch on the antiskid/autobrake control unit to the NORM position.

(c) Move the speed brake lever to the DOWN position.

WARNING: MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

(e) Move one of the thrust levers to full forward.

(f) Move the thrust lever back to the idle position.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	15	C01401	LANDING GEAR AIR/GND RELAY

(h) Do this task: Put the Speed Brake Hydraulic systems A and B Back to the Condition Before the Pressurization, AMM TASK 27-62-00-840-801.

——————— END OF TASK ———————

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813. Speedbrake DO NOT ARM Light Does Not Operate During Autostow Actuator Automatic Ground Test - Fault Isolation

A. Description

(1) This task is for these SMYD messages:

(a) 27-62001 Autostow Fault

(b) 27-62002 Internal Autostow

(2) The speedbrake DO NOT ARM light remains off during Autostow Actuator Automatic Ground Test (AMM TASK 27-62-33-820-801).

B. Possible Causes

(1) Speedbrake ARMED light, L2

(2) Wiring problem

(3) Autostow Actuator

(4) Defective SMYD

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	10	C01611	SPDBRK AUTOSTOW

D. Related Data

(1) Do this task: Speedbrake Autostow Actuator Automatic Ground Test, AMM TASK 27-62-33-820-801.

E. Initial Evaluation

(1) Do this task: SPEED BRAKE ARMED Light Does Not Operate - Fault Isolation, 27-62 TASK 803.

(a) If the speedbrake DO NOT ARM light does not operate during this check, do the suggested repairs in the FIM.

(b) If the speedbrake DO NOT ARM light does operate during this check, do the following speedbrake autostow evaluation:

1) Check the SMYD for faults, do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

2) Run the autostow actuator automatic ground test, do this task: Speedbrake Autostow Actuator Automatic Ground Test, AMM TASK 27-62-33-820-801.

F. Fault Isolation Procedure

(1) Do the following if you get MSG 27-62002 during the SMYD BITE test:

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(a) If the SMYD in the No. 1 location is a -105 or -106 (on -800 airplanes with no light fence), a -106 (on -800 airplanes with a light fence), or a -106 (on -700 airplanes), swap the No. 1 and No. 2 SMYD locations. To remove and install the SMYDs, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801 or (AMM TASK 27-32-42-400-801).

NOTE: Install the old No. 2 SMYD in the No. 1 SMYD location and install the old No. 1 SMYD in the No. 2 SMYD location. Do not replace SMYD No. 2 with a known good unit until you complete the following steps to check for wiring problems related to SMYD No. 2.

(b) With the SMYD No. 2, M1748, removed, ground pin 6 at the SMYD connector D36858 (with master dim power on).

1) The speedbrake DO NOT ARM light should come on.

2) If the speedbrake DO NOT ARM light does not come on, check the wiring between the SMYD No. 2, M1748, and the DO NOT ARM light.

(c) If the speedbrake DO NOT ARM light comes on, then continue.

1) Replace SMYD No. 2, M1748, with a known good unit.

(2) Do the following if you get MSG 27-62001 during the SMYD BITE test:

(a) Do this task: Speedbrake Autostow Actuator Automatic Ground Test, AMM TASK 27-62-33-820-801.

1) While doing the autostow automatic ground test, make sure that the autostow actuator moves speedbrake handle to the 50% position.

2) Make sure that the speedbrake lever can be moved to the full up position with normal feel forces after the completion of the autostow actuator automatic ground test.

(b) If the autostow actuator moves per the above two checks, but the light does not come on, do the following:

1) Do this task: Speedbrake Autostow Actuator - Functional Test, AMM TASK 27-62-33-010-801.

2) Make sure the actuator is in the extended position.

3) Remove connector, D11841, at the autostow actuator and verify the following:

a) There is continuity at connector D11841, between pins 2 and 4.

D11841		**D11841**
pin 2	- - - - - - - - - - - - - - - - -	pin 4

b) There is not continuity at connector D11841, between pins 5 and 6.

D11841		**D11841**
pin 5	- - - - - - - - - - - - - - - - -	pin 6

4) If the above two checks are not satisfactory, replace the autostow actuator. Do this task: Speed Brake Autostow Actuator Removal, AMM TASK 27-62-33-000-801.

5) If the above two checks are not satisfactory, replace the connector, D11841, and move the autostow actuator to the retracted position.

6) Remove connector, D11841, at the autostow actuator and verify the following:

a) There is not continuity at connector D11841, between pins 2 and 4.

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D11841		D11841
pin 2	- - - - - - - - - - - - - - - -	pin 4

b) There is continuity at connector D11841, between pins 5 and 6.

D11841		D11841
pin 5	- - - - - - - - - - - - - - - -	pin 6

7) If the above two checks are not satisfactory, replace the autostow actuator. Do this task: Speed Brake Autostow Actuator Removal, AMM TASK 27-62-33-000-801.

8) If the above two continuity checks are satisfactory, do the following two continuity checks:

a) Check the wiring for continuity between pin 98 of D3685A at SMYD No. 2, M1748, and and pin 5 of connector D11841 at the autostow actuator.

SMYD No. 2, M1748 D3685A		Autostow Actuator D11841
pin 98	- - - - - - - - - - - - - - - -	pin 5

b) Check the wiring for continuity between pin 99 of D3685A at SMYD No. 2, M1748 and and pin 4 of connector D11841 at the autostow actuator.

SMYD No. 2, M1748 D3685A		Autostow Actuator D11841
pin 99	- - - - - - - - - - - - - - - -	pin 4

9) Repair wiring, if required and repeat the autostow actuator functional test. Do this task: Speedbrake Autostow Actuator - Functional Test, AMM TASK 27-62-33-010-801.

HAP ALL

——————— END OF TASK ———————

814. SPEEDBRAKES EXTENDED Light Is On (Airplane On Ground) - Fault Isolation

A. Description

(1) The SPEEDBRAKES EXTENDED light shows on the ground when these conditions occur:
- Ground spoiler interlock valve pressure switch measures more than 750 psi
- Speedbrake lever in the down position

(2) This is a failure condition.

B. Possible Causes

(1) Proximity Switch Electronics Unit (PSEU), M2061

(2) Speed Brake Takeoff Warning switch, S651

(3) Ground Spoiler Up Pressure switch, S1049

C. Related Data

(1) (SSM 27-62-21)

(2) (WDM 27-62-21)

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D. Initial Evaluation

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

(2) Make sure the speedbrake lever is in the DOWN position.

(3) Make sure the ground spoilers are down.

(a) If the ground spoilers are not down, do this task: Ground spoilers do not operate - Fault Isolation, 27-61 TASK 803.

(b) If the ground spoilers are down, and the light is on, continue with the fault isolation.

NOTE: One of the switches that controls the SPEEDBRAKES EXTENDED light has a 5-second delay. Wait at least 5 seconds between steps to make sure that the light is in the correct condition.

(c) If the ground spoilers are down, and the light is off, there was an intermittent fault.

E. Fault Isolation Procedure

(1) Move the speedbrake lever to the UP position.

(a) If the SPEEDBRAKES EXTENDED light stays on, adjust or replace the SPDBRK TAKEOFF WARN switch, S651. These are the tasks:

- Speedbrake Takeoff Warning Switch Removal, AMM TASK 31-51-03-000-801
- Speedbrake Takeoff Warning Switch Installation, AMM TASK 31-51-03-400-801

(b) If the SPEEDBRAKES EXTENDED light turns off, continue with the fault isolation.

(2) Move the speedbrake lever to the DOWN position.

(a) If the SPEEDBRAKES EXTENDED light turns off, you corrected the fault.

(b) If the SPEEDBRAKES EXTENDED light turns on, do these steps:

1) Makes sure the ground spoiler interlock valve cable is correctly adjusted. These are the tasks:

- Ground Spoiler Interlock Valve Adjustment, AMM TASK 27-62-00-820-803
- Ground Spoiler Interlock Valve Adjustment (Alternate Method), AMM TASK 27-62-00-820-811.

2) If the cable is correctly adjusted, replace the GND SPOILER INTERLOCK VALVE PRESSURE switch, S1049. These are the tasks:

- Ground Spoiler Interlock Valve Pressure Switch Removal, AMM TASK 27-62-61-000-803
- Ground Spoiler Interlock Valve Pressure Switch Installation, AMM TASK 27-62-61-400-804.

———————— END OF TASK ————————

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801. Leading Edge Flap Droops Too Much with Hydraulic Pressure Off - Fault Isolation

A. Description

(1) With no hydraulic pressure, the leading edge (LE) flaps can droop due to leakage past the blocking valve.

B. Possible Causes

(1) Leading edge flap actuator

C. Initial Evaluation

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) If hydraulic system B is not pressurized, pressurize hydraulic system B. To pressurize hydraulic system B, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(2) Move the flap control lever to the UP position to make sure the flaps and slats are in the fully retracted position.

(3) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(4) Wait one minute after you remove hydraulic power, then measure the clearance between the lower surface of the LE flap trailing edge and the lower surface of the adjacent wing skin.

NOTE: The clearance can become larger if you wait more than one minute after removal of hydraulic power before you measure the clearance.

(5) Make sure the clearance is not more than 2.0 inches for a new or overhauled actuator and 4.0 inches for an in-service actuator.

(a) If the clearance is less than the specified limit, then there was an intermittent fault.

(b) If the clearance is more than the specified limit, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Replace the LE flap actuator. These are the tasks:

- Leading Edge Flap Actuator Removal, AMM TASK 27-81-31-000-801
- Leading Edge Flap Actuator Installation, AMM TASK 27-81-31-400-801

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Supply system B hydraulic power. To pressurize hydraulic system B, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(c) One minute after you removed hydraulic power, measure the clearance between the lower surface of the LE flap trailing edge and the lower surface of the adjacent wing skin.

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(d) If the clearance is not more than 2.0 inches for a new or overhauled actuator and 4.0 inches for an in-service actuator, then you corrected the fault.

——————— END OF TASK ———————

802. Leading Edge Flaps and Slats Fail to Extend during Alternate System Operation - Fault Isolation

A. Description

(1) The leading edge flaps and slats did not operate with alternate control.

(2) The leading edge flaps and slats can extend but not retract with alternate control.

(3) During the alternate operation, the leading edge standby shutoff valve supplies standby hydraulic system power.

B. Possible Causes

(1) Leading edge standby shutoff valve, V51

(2) Leading Edge Standby Hydraulic Fuse

(3) Leading Edge Flap Flow Limiting Valve

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

D. Related Data

(1) (SSM 27-53-11)

(2) (SSM 27-80-01)

(3) (WDM 27-53-11)

E. Initial Evaluation

(1) Make sure the leading edge flaps and slats are in the retracted position.

(2) Make sure there is no power to hydraulic system B. If it is necessary, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

WARNING: MAKE SURE PERSONS AND EQUIPMENT ARE CLEAR OF THE LEADING EDGE FLAPS AND SLATS AND THE TRAILING EDGE FLAPS. THESE SURFACES WILL MOVE. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

CAUTION: MAKE SURE THE ALTERNATE FLAP DRIVE UNIT IS KEPT TO A LIMIT OF 10 MINUTES OPERATION AND 25 MINUTES OFF. THIS WILL PREVENT THE ALTERNATE FLAP DRIVE UNIT FROM DAMAGE.

(3) Move the ALTERNATE FLAPS ARM switch to the ARM position.

(4) Make sure the standby hydraulic system operates and supplies hydraulic pressure to the leading edge standby shutoff valve:

NOTE: You should be able to hear the standby hydraulic pump operate when you arm the alternate system.

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(a) Do a check of the STANDBY HYD LOW PRESSURE light, on the flight controls panel, P5.

(b) If the STANDBY HYD LOW PRESSURE light is on, then do this task: STANDBY HYD LOW PRESSURE Light On - Fault Isolation, 29-30 TASK 814.

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

(c) If the STANDBY HYD LOW PRESSURE light is not on, then continue.

(5) Move the ALTERNATE FLAPS control switch to the DOWN position.

(6) Make sure the trailing edge flaps extend.

(a) If the trailing edge flaps do not extend, then do this task: Alternate Trailing Edge Flaps Operation Problem - Fault Isolation, 27-51 TASK 837.

(7) If the LE flaps and slats do not extend, then do the Fault Isolation Procedure below.

(8) If the LE flaps and slats extend, then there was an intermittent fault.

(a) Move the ALTERNATE FLAPS ARM and control switches to the OFF position.

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(b) Supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(c) Move the flap control lever to the UP position to retract the trailing edge flaps and the leading edge flaps and slats.

(d) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

F. Fault Isolation Procedure

(1) Move the ALTERNATE FLAPS ARM switch on the P5 panel to the ARM position to arm the alternate control system.

(2) Move the ALTERNATE FLAPS control switch to the DOWN position.

(3) Look at the position of the manual override lever on the leading edge standby drive shutoff valve, V51.

NOTE: The leading edge standby drive shutoff valve should move to POSITION 2 (standby hydraulic power ON). The leading edge standby drive shutoff valve is installed on the left side of the aft bulkhead of the main wheel well.

(4) If the leading edge standby drive shutoff valve, V51 does move to POSITION 2 (standby hydraulic power ON), then do these steps:

(a) Reset the leading edge flap and slat standby system hydraulic fuse. To reset the fuse, do this task: Flap and Slat Hydraulic Fuse (Standby System) Reset, AMM TASK 27-81-61-860-802.

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

2) If the Repair Confirmation test failed, then continue.

3) Replace the leading edge flap flow limiting valve. These are the tasks:

- Leading Edge Flap Flow Limiting Valve Removal, AMM TASK 27-81-71-000-801
- Leading Edge Flap Flow Limiting Valve Installation, AMM TASK 27-81-71-400-801

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

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(5) If the leading edge standby drive shutoff valve does not move to POSITION 2 (standby hydraulic power ON), continue.

(6) Do this check of the electrical power to the leading edge standby shutoff valve, V51:

(a) Disconnect the connector D1010 from the leading edge standby shutoff valve, V51.

(b) Move the ALTERNATE FLAPS ARM switch on the flight controls panel, P5, to the ARM position.

(c) Move the ALTERNATE FLAPS control switch to the DOWN position.

(d) Do a check for 28 VDC between pins 1 and 2 on connector D1010.

(e) If there is not 28 VDC between pins 1 and 2 on connector D1010, then do this check of the wiring:

1) Do a continuity check between pin 1 of connector D1010 and structure ground.

2) If there is not continuity between pin 1 of connector D1010 and structure ground, then do these steps:

a) Repair the wiring.

b) Connect the connector D1010 to the leading edge standby shutoff valve, V51.

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

3) Remove the flight controls module, P5-3.

4) Disconnect the connector D624 for the flight control module, P5-3.

5) Do a wiring check between these pins of connector D1010 at the leading edge standby shutoff valve, V51 and connector D624 for the flight control module, P5-3.

D1010		D624
pin 2	- - - - - - - - - - - - - - - - - -	pin 30

6) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D1010 to the leading edge standby shutoff valve, V51.

c) Re-connect connector D624 for the flight control module, P5-3.

d) Install the flight controls module, P5-3.

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

7) If you do not find a problem with the wiring, then do these steps:

a) Replace the LE standby shutoff valve relay, K3.

b) Install the flight controls module, P5-3.

c) Re-connect connector D1010 to the leading edge standby shutoff valve, V51.

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

(f) If there is 28 VDC between pins 1 and 2 on connector D1010, then continue.

(7) Replace the leading edge standby shutoff valve, V51. These are the tasks:

- Leading Edge Standby Shutoff Valve Removal, AMM TASK 27-81-91-000-801
- Leading Edge Standby Shutoff Valve Installation, AMM TASK 27-81-91-400-801

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

G. Repair Confirmation

(1) Do this check of the operation of the leading edge flap and slat system:

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(a) Make sure there is no power to hydraulic system B. If it is necessary, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

WARNING: MAKE SURE PERSONS AND EQUIPMENT ARE CLEAR OF THE LEADING EDGE FLAPS AND SLATS AND THE TRAILING EDGE FLAPS. THESE SURFACES WILL MOVE. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

CAUTION: MAKE SURE THE ALTERNATE FLAP DRIVE UNIT IS KEPT TO A LIMIT OF 10 MINUTES OPERATION AND 25 MINUTES OFF. THIS WILL PREVENT THE ALTERNATE FLAP DRIVE UNIT FROM DAMAGE.

(b) Put the ALTERNATE FLAPS ARM switch in the ARM position.

(c) Move the ALTERNATE FLAPS control switch to the DOWN position.

(d) If the LE flaps and slats extend, then you corrected the fault.

1) Move the ALTERNATE FLAPS control switch to the OFF position.

2) Move the ALTERNATE FLAPS ARM switch to the OFF position.

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) Supply system B hydraulic power. Do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(3) Move the flap control lever to the UP position to retract the trailing edge flaps and the leading edge flaps and slats.

(4) Remove system B hydraulic power. Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

END OF TASK

803. Leading Edge Flaps and Slats Fail to Operate During Normal System Operation - Fault Isolation (Figure 301)

A. Description

(1) Normal system operation uses the hydraulic system B to move the leading edge (LE) flaps and slats.

(2) Hydraulic pressure goes through the LE cruise depressurization valve to the LE flap and slat control valve. The LE flap and slat control valve sends extend pressure to the LE flap and slat actuators. This causes the LE flaps and slats to move to the extend position. The hydraulic fluid goes through hydraulic fuses in the lines.

B. Possible Causes

(1) LE slat actuator

(2) LE flap actuator

(3) Flap/Slat electronics unit (FSEU), M1746

(4) LE extend hydraulic fuse

(5) LE retract hydraulic fuse

(6) LE UCM shutoff valve, V162

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(7) LE cruise depressurization valve, V163

(8) Standby control module

(9) LE standby flow regulator

(10) Flap control unit

(11) Autoslat module

(12) LE flap and slat control valve

(13) LE lockout in the mid-extend position due to slat actuator internal leakage

C. Initial Evaluation

NOTE: If hydraulic power is on, keep it on. If the hydraulic fuses are set, they can be reset if you remove hydraulic power. This can make it more difficult to find the problem. It is important to follow these initial evaluation steps in order.

(1) Do a visual check of the position of the leading edge flaps and the leading edge slats.

(a) If the position of one surface is significantly different from the positions of the other surfaces, then do the Fault Isolation Procedure - Leading Edge Surface Does Not Align below.

NOTE: In-flight airload can cause misallignment between the slats and flaps.

(b) If the positions of the surfaces align, then continue.

(2) If the airplane has history (previous incidents) of the leading edge failing to retract from the mid-extend position, then do this task: Leading Edge Lockout Problem - Fault Isolation, 27-81 TASK 812.

(3) If the airplane does not have history of the leading edge failing to retract from the mid-extend position, then continue.

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) If it is not powered, supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE PERSONS AND EQUIPMENT ARE CLEAR OF THE LEADING EDGE FLAPS AND SLATS AND THE TRAILING EDGE FLAPS. THE FLAPS AND SLATS WILL EXTEND. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) Move the flap control lever to operate the trailing edge flaps and the LE flaps and slats with primary control to a different position. To operate them, do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.

(6) If the trailing edge flaps do not operate with the primary system, then do this task: Trailing Edge Flaps Primary Operation Problem - Fault Isolation, 27-51 TASK 836.

(7) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(a) If the FSEU shows one or more of the LE UCM maintenance messages, then do this task: Leading Edge Extend UCM Problem - Fault Isolation, 27-81 TASK 806.

(b) If the FSEU does not show LE UCM maintenance messages, then continue.

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(8) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

NOTE: This evaluation will not work if the hydraulic fuses have been reset.

(a) If the leading edge surfaces move to the commanded position when you open the circuit breaker, then do the Fault Isolation Procedure - Leading Edge Shutoff and Depressurization Valves below.

(b) If the leading edge surfaces do not move when you open the circuit breaker, then continue.

(9) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(10) Do a visual check of the position of the leading edge flap standby shutoff valve, V51.

NOTE: The valve is installed on the aft bulkhead of the main wheel well.

(a) If the valve is not in position 1, then do the Fault Isolation Procedure - Leading Edge Flap Standby Drive Shutoff below.

(b) If the valve is in position 1, then continue.

(11) Do this check of the operation of the flap control unit:

NOTE: In these steps, it is not necessary to measure the movement of the control valve precisely. You can make approximate measurements.

HAP 001-013, 015-026, 028-036, 101-999

(a) Move the flap control lever to the 10 unit position.

HAP 037-054

(b) Move the flap control lever to the 30 unit position.

HAP 001-013, 015-026, 028-036, 101-999

(c) Measure and record the distance between the valve slide and the index surface of the leading edge flap and slat control valve for the 10 unit position.

HAP 037-054

(d) Measure and record the distance between the valve slide and the index surface of the leading edge flap and slat control valve for the 30 unit position.

HAP ALL

(e) Move the flap control lever to the 5 unit position.

(f) Measure and record the distance between the valve slide and the index surface of the leading edge flap and slat control valve for the 5 unit position.

(g) Move the flap control lever to the UP position.

(h) Measure and record the distance between the valve slide and the index surface of the leading edge flap and slat control valve for the UP position.

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HAP 001-013, 015-026, 028-036, 101-999

(i) The dimension should be shortest when the flap control lever is at UP, longer when at 5 units, and longest when it is at 10 units.

NOTE: The valve slide and the index surface should be approximately flush when the flap lever is UP, approximately 0.22 inch longer at 5 units, and 0.46 inch longer at 10 units.

HAP 037-054

(j) The dimension should be shortest when the flap control lever is at UP, longer when at 5 units, and longest when it is at 30 units.

NOTE: The valve slide and the index surface should be approximately flush when the flap lever is UP, approximately 0.22 inch longer at 5 units, and 0.46 inch longer at 30 units.

HAP ALL

(k) If the control valve does not move correctly, then do the Fault Isolation Procedure - LE Control Valve Input below.

(l) If the control valve moves correctly, then continue.

(12) Do this check to see if the system B hydraulic fuses were set:

(a) Remove system B hydraulic power. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(b) Reset the system B hydraulic fuses. To reset them, do this task: Flap and Slat Hydraulic Fuses (System B) Reset, AMM TASK 27-81-61-860-801.

(c) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(d) Move the flap control lever to operate the leading edge flaps and slats.

(e) If the LE flaps and slats extend and retract, then do the Fault Isolation Procedure - Hydraulic Fuse Set below.

(13) If the LE flaps and slats do not extend and retract, then do the Fault Isolation Procedure - Leading Edge Fails to Operate below.

(14) Remove system B hydraulic power. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(15) If there has been a recurring problem, flush the system B hydraulic system. To flush the system, do this task: Hydraulic System A or B Flushing, AMM TASK 29-11-00-170-801.

D. Fault Isolation Procedure - Leading Edge Surface Does Not Align

(1) Replace the leading edge flap or slat actuator for the surface that does not align:

(a) If it is necessary, replace the applicable leading edge slat actuator. These are the tasks:
- Leading Edge Slat Actuator Removal, AMM TASK 27-81-41-000-801
- Leading Edge Slat Actuator Installation, AMM TASK 27-81-41-400-801

(b) If it is necessary, replace the applicable leading edge flap actuator. These are the tasks:
- Leading Edge Flap Actuator Removal, AMM TASK 27-81-31-000-801
- Leading Edge Flap Actuator Installation, AMM TASK 27-81-31-400-801

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

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E. Fault Isolation Procedure - Leading Edge Shutoff and Depressurization Valves (Figure 301)

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(2) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(3) Do this test of the leading edge slat control with the FSEU, M1746 off:

(a) Open these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

(b) Move the flap control lever to a different position to operate the leading edge flaps and slats.

(c) If the leading edge flaps and slats move, then do these steps:

1) Replace the FSEU, M1746. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

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

(d) If the leading edge flaps and slats do not move, then continue.

(e) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

(4) If the leading edge flaps and slats are in the retracted position, and they stay retracted when the trailing edge flaps extend, then do this check of the leading edge cruise depressurization valve:

HAP 001-013, 015-026, 028-036, 101-999

(a) Move the flap control lever to the 10 unit position to extend the trailing edge flaps.

HAP 037-054

(b) Move the flap control lever to the 30 unit position to extend the trailing edge flaps.

HAP ALL

(c) Put the ALTERNATE FLAPS ARM switch in the ARM position.

(d) Move and hold the ALTERNATE FLAPS control switch to the DOWN position for approximately 5 seconds.

NOTE: The leading edge flaps and slats should move to the fully extended position.

(e) Put the ALTERNATE FLAPS ARM switch in the OFF position to disarm the alternate control.

(f) If the leading edge flaps and slats move to the retracted position, then do these steps:

1) Replace the LE cruise depressurization valve, V163. These are the tasks:

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- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Removal, AMM TASK 27-81-52-000-801
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Installation, AMM TASK 27-81-52-400-801

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

(g) If the leading edge flaps and slats do not move to the retracted position, then continue.

(5) If the leading edge flaps and slats did not retract, then do these steps:

(a) Replace the leading edge uncommanded motion (UCM) valve, (V162). These are the tasks:
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Removal, AMM TASK 27-81-52-000-801
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Installation, AMM TASK 27-81-52-400-801

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

F. Fault Isolation Procedure - Leading Edge Flap Standby Drive Shutoff (Figure 301)

(1) Remove system B hydraulic power. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(2) Make sure the ALTERNATE FLAPS ARM switch and the control switch are in the OFF position.

(3) Do this check of the power supply to the leading edge standby drive shutoff valve, V51:

(a) Disconnect the electrical connector, D1010 from the leading edge standby drive shutoff valve, V51.

(b) Do a check for 28 VDC between pins 3 and 1 on connector D1010.

(c) If there is 28 VDC between pins 3 and 1 on connector D1010, then do these steps:

1) Replace the leading edge standby shutoff valve, V51. These are the tasks:
- Leading Edge Standby Shutoff Valve Removal, AMM TASK 27-81-91-000-801
- Leading Edge Standby Shutoff Valve Installation, AMM TASK 27-81-91-400-801

2) Connect the connector D1010 to the leading edge standby shutoff valve, V51.

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

(d) If there is not 28 VDC between pins 3 and 1 on connector D1010, then do these steps:

1) Do a continuity check between pin 1 of connector D1010 and structure ground.

2) If there is not continuity between pin 1 of connector D1010 and structure ground, then do these steps:

a) Repair the wiring.

b) Connect the connector D1010 to the leading edge standby shutoff valve, V51.

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

3) Remove the flight controls module, P5-3.

4) Disconnect the connector D624 for the flight control module, P5-3.

5) Do a wiring check between these pins of connector D1010 at the leading edge standby drive shutoff valve, V51 and connector D624 for the flight control module, P5-3.

D1010		D624
pin 3	- - - - - - - - - - - - - - - - - -	pin 17

6) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

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b) Re-connect connector D1010 to the leading edge standby shutoff valve, V51.

c) Re-connect connector D624 for the flight control module, P5-3.

d) Install the flight controls module, P5-3.

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

7) If you do not find a problem with the wiring, then do a check for continuity between pins 4 and 17 on connector D624 on the flight controls module, P5-3.

8) If there is not continuity between pins 4 and 17, then do these steps:

a) Replace the flight controls panel, P5-3. These are the tasks:

- Flight Controls Panel Removal, AMM TASK 27-09-45-000-801
- Flight Controls Panel Installation, AMM TASK 27-09-45-400-801

b) Re-connect connector D1010 to the leading edge standby shutoff valve, V51.

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

9) If there is continuity between pins 4 and 17, then replace the following circuit breaker:

a) This is the circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

10) Re-connect connector D1010 to the leading edge standby shutoff valve, V51.

11) Re-connect connector D624 for the flight control module, P5-3.

12) Install the flight controls module, P5-3.

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

G. Fault Isolation Procedure - LE Control Valve Input (Figure 301)

(1) Do this check of the LE flap and slat control valve:

(a) Remove the screws and washers and remove the lower pan from the flap control unit.

(b) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

HAP 001-013, 015-026, 028-036, 101-999

(c) Move the flap control lever between the UP and 10 unit position, and watch the input linkage for the LE flap and slat control valve.

HAP 037-054

(d) Move the flap control lever between the UP and 30 unit position, and watch the input linkage for the LE flap and slat control valve.

HAP 001-013, 015-026, 028-036, 101-999

(e) If the input linkage moves when the flaps move between the UP and 1 unit position, and between the 5 and 10 unit positions, then do these steps:

1) Replace the LE flap and slat control valve. These are the tasks:

- Leading Edge Flap and Slat Control Valve Removal, AMM TASK 27-81-81-000-801
- Leading Edge Flap and Slat Control Valve Installation, AMM TASK 27-81-81-400-801

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

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HAP 001-013, 015-026, 028-036, 101-999 (Continued)

HAP 037-054

(f) If the input linkage moves when the flaps move between the UP and 1 unit position, and between the 25 and 30 unit positions, then do these steps:

1) Replace the LE flap and slat control valve. These are the tasks:
   - Leading Edge Flap and Slat Control Valve Removal, AMM TASK 27-81-81-000-801
   - Leading Edge Flap and Slat Control Valve Installation, AMM TASK 27-81-81-400-801
2) Do the Repair Confirmation at the end of this task.

HAP ALL

(g) If the input linkage does not move, then do these steps:

1) Replace the flap control unit. These are the tasks:
   - Flap Control Unit Removal, AMM TASK 27-51-61-000-801
   - Flap Control Unit Installation, AMM TASK 27-51-61-400-801
2) Do the Repair Confirmation at the end of this task.

(h) Install the lower pan on the flap control unit with the screws and washers.

H. Fault Isolation Procedure - Hydraulic Fuse Set (Figure 301)

NOTE: This procedure will do a check for internal hydraulic leakage in the leading edge flap and slat system. The checks included are as follows:
- A check of the leading edge flap and slat actuators.
- A check of the solenoids in the autoslat valve.
- A check of the cruise depressurization valve.
- A check of the complete leading edge system at the retracted position.
- A check of the complete leading edge system at the extended position.
- A check of the complete leading edge system at the full extend position.

(1) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(2) Do these checks of the leading edge flap and slat actuators:

(a) If the flaps and slats are not retracted, move the flap control lever to the UP position to retract them.

(b) If one leading edge flap or slat moves to the retracted position more than one second before or after the others, then do these steps:

NOTE: Fast or slow retraction, or slow extension can be a sign of internal leakage in the actuator.

1) Replace the applicable leading edge flap or slat actuator.

a) If it is necessary, replace the applicable leading edge slat actuator. These are the tasks:
   - Leading Edge Slat Actuator Removal, AMM TASK 27-81-41-000-801
   - Leading Edge Slat Actuator Installation, AMM TASK 27-81-41-400-801

b) If it is necessary, replace the applicable leading edge flap actuator. These are the tasks:
   - Leading Edge Flap Actuator Removal, AMM TASK 27-81-31-000-801
   - Leading Edge Flap Actuator Installation, AMM TASK 27-81-31-400-801

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

HAP 001-013, 015-026, 028-036, 101-999

(c) Move the flap control lever to the 10-unit position to extend the leading edge flaps and slats.

HAP 037-054

(d) Move the flap control lever to the 30-unit position to fully extend the leading edge flaps and slats.

HAP 001-013, 015-026, 028-036, 101-999

(e) If one leading edge flap or slat moves to the extended position more than one second after the others, then do these steps:

1) Replace the applicable leading edge flap or slat actuator.

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

HAP 037-054

(f) If one leading edge flap or slat moves to the fully extended position more than one second after the others, then do these steps:

1) Replace the applicable leading edge flap or slat actuator.

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

HAP ALL

(g) Move the flap control lever to the UP position to retract the leading edge flaps and slats.

(h) If one leading edge flap or slat moves to the retracted position more than one second before or after the others, then do these steps:

1) Replace the applicable leading edge flap or slat actuator.

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

(i) If the leading edge flaps and slats move at the same time, then continue.

(3) Do a check for internal hydraulic leakage in the autoslat valve:

NOTE: It will be necessary to disconnect hydraulic lines and measure the fluid flow rate.

(a) If the trailing edge flaps are extended past the 15 unit position, then do these steps:

WARNING: KEEP PERSONS AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES. THE AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS, STABILIZER AND NOSE GEAR CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

1) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

2) Move the flap control lever to the 15 unit position to retract the trailing edge flaps.

3) Remove system B hydraulic power. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(b) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

NOTE: It is necessary to remove the pressure from the reservoir, because you will disconnect a hydraulic line below the level of the reservoir. All of the hydraulic fluid will drain out of the reservoir, if pressure is applied.

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(c) Put a measuring container, STD-6505 under the return line on the autoslat valve.

(d) Disconnect the return line from the autoslat valve.

NOTE: The return line goes to a tee, with one line to the hydraulic reservoir, and one line to the leading edge UCM valve.

(e) Install a cap or plug on the hydraulic line that goes to the tee.

(f) Pressurize the system B hydraulic reservoir. To pressurize the reservoir, do this task: Hydraulic Reservoirs Pressurization, AMM TASK 29-11-01-860-801 or Hydraulic Reservoirs Pressurization, AMM TASK 29-09-00-860-801.

(g) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(h) Measure the leakage from the autoslat valve with the solenoids not energized:

1) Measure and record the leakage rate from the return port on the autoslat valve.

2) If the leakage rate is more than 40 cc/minute, then replace the autoslat valve. To replace it, These are the tasks:
- Autoslat Control Valve Removal, AMM TASK 27-83-21-000-801
- Autoslat Control Valve Installation, AMM TASK 27-83-21-400-801

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

3) If the leakage rate is not more than 40 cc/minute, then continue.

(i) Measure the leakage from the autoslat valve after the solenoids have been cycled:

1) Use the Proximity Switch Electronics Unit (PSEU) to simulate air mode. To simulate air mode, do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.

2) Move the flap control lever to the 30 unit position to extend the trailing edge flaps.

NOTE: A small amount of hydraulic fluid will leak from the autoslat valve when the autoslat valve solenoids are energized. The solenoids will be energized for approximately 1/2 second, when the trailing edge flaps are between the 15 and 25 unit positions.

3) Measure and record the leakage rate from the return port on the autoslat valve again.

4) If the leakage rate is more than 40 cc/minute, then replace the autoslat valve. To replace it, these are the tasks:
- Autoslat Control Valve Removal, AMM TASK 27-83-21-000-801
- Autoslat Control Valve Installation, AMM TASK 27-83-21-400-801

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

5) If the leakage rate is not more than 40 cc/minute, then continue.

(j) Use the Proximity Switch Electronics Unit (PSEU) to return the airplane to ground mode. To return to ground mode, do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

(k) Move the flap control lever to the UP position to retract the leading and trailing edge flaps and slats.

(l) Remove system B hydraulic power. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(m) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

(n) Remove the cap or plug from the hydraulic line that goes to the hydraulic reservoir.

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(o) Connect the return line to the autoslat valve.

(4) Do a check for internal hydraulic leakage in the leading edge cruise depressurization valve:

NOTE: It will be necessary to disconnect hydraulic lines and measure the fluid flow rate.

(a) If the trailing edge flaps are not in the retracted position, then do these steps:

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROLS SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

1) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

2) Move the flap control lever to the UP position to retract the trailing edge flaps.

3) Remove system B hydraulic power. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(b) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

(c) Put a measuring container, STD-6505 under the return line on the cruise depressurization valve.

(d) Disconnect the return line from the cruise depressurization valve.

NOTE: The return line is the smaller of two hydraulic lines that go forward from the cruise depressurization valve.

(e) Install a cap or plug on the hydraulic line that goes to the hydraulic reservoir.

(f) Pressurize the system B hydraulic reservoir. To pressurize the reservoir, do this task: Hydraulic Reservoirs Pressurization, AMM TASK 29-11-01-860-801 or Hydraulic Reservoirs Pressurization, AMM TASK 29-09-00-860-801.

(g) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(h) Measure the leakage from the cruise depressurization valve with the solenoids energized:

1) Use the Proximity Switch Electronics Unit (PSEU) to simulate air mode. To simulate air mode, do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.

NOTE: The solenoids on the cruise depressurization valve will be energized three seconds after the PSEU is in air mode. A small amount of hydraulic fluid can leak while the valve moves.

2) Measure and record the leakage rate from the return port on the cruise depressurization valve.

3) If the leakage rate is more than 100 cc/minute, then replace the cruise depressurization valve. To replace it, these are the tasks:

- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Removal, AMM TASK 27-81-52-000-801
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Installation, AMM TASK 27-81-52-400-801

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

4) If the leakage rate is not more than 100 cc/minute, then continue.

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(i) Use the Proximity Switch Electronics Unit (PSEU) to return the airplane to ground mode. To return to ground mode, do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

NOTE: The solenoids on the cruise depressurization valve will be de-energized three seconds after the PSEU is in ground mode. A small amount of hydraulic fluid can leak while the valve moves.

(j) Measure the leakage from the cruise depressurization valve with the solenoids not energized:

1) Measure and record the leakage rate from the return port on the cruise depressurization valve again.

2) If the leakage rate is more than 100 cc/minute, then replace the cruise depressurization valve. To replace it, these are the tasks:
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Removal, AMM TASK 27-81-52-000-801
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Installation, AMM TASK 27-81-52-400-801

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

3) If the leakage rate is not more than 100 cc/minute, then continue.

(k) Remove system B hydraulic power. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(l) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

(m) Remove the cap or plug from the hydraulic line that goes to the hydraulic reservoir.

(n) Connect the return line to the cruise depressurization valve.

(5) Do a check for internal hydraulic leakage in the complete leading edge system:

NOTE: The leading edge flap and slat system connects to the hydraulic system return at these three locations:
- the leading edge standby line
- the return line on the LE flap and slat control valve
- the return line for the autoslat module and LE UCM shutoff valve.

(a) Pressurize the system B hydraulic reservoir. To pressurize the reservoir, do this task: Hydraulic Reservoirs Pressurization, AMM TASK 29-11-01-860-801 or Hydraulic Reservoirs Pressurization, AMM TASK 29-09-00-860-801.

(b) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(c) Move the flap control lever to the UP position.

(d) Do these steps to measure the hydraulic fluid leakage with the leading edge retracted:

NOTE: It will be necessary to disconnect hydraulic lines and measure the fluid flow rate.

1) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

2) Measure the hydraulic fluid leakage from the LE flap and slat control valve:

a) Put a graduated container, STD-6338 under the LE flap and slat control valve.

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b) Disconnect the return line from the LE flap and slat control valve.

c) Install a cap or plug on the hydraulic line that goes to the hydraulic reservoir.

d) Pressurize the system B hydraulic reservoir. To pressurize the reservoir, do this task: Hydraulic Reservoirs Pressurization, AMM TASK 29-11-01-860-801 or Hydraulic Reservoirs Pressurization, AMM TASK 29-09-00-860-801.

e) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

f) Measure and make a record of the leakage rate of the hydraulic fluid from the LE flap and slat control valve.

g) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

h) Remove the cap or plug from the hydraulic line.

i) Reconnect the return line to the LE flap and slat control valve.

3) Measure the hydraulic fluid leakage from the leading edge standby shutoff valve:

a) Put a graduated container, STD-6338 under the leading edge standby shutoff valve.

b) Disconnect the return line from the leading edge standby shutoff valve.

c) Install a cap or plug on the hydraulic line that goes to the hydraulic reservoir.

d) Pressurize the system B hydraulic reservoir. To pressurize the reservoir, do this task: Hydraulic Reservoirs Pressurization, AMM TASK 29-11-01-860-801 or Hydraulic Reservoirs Pressurization, AMM TASK 29-09-00-860-801.

e) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

f) Measure and make a record of the leakage rate of the hydraulic fluid from the leading edge standby shutoff valve.

g) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

h) Remove the cap or plug from the hydraulic line.

i) Reconnect the return line to the leading edge standby shutoff valve.

4) Measure the hydraulic fluid leakage from the LE UCM shutoff valve and the autoslat valve:

NOTE: The return lines for the LE UCM shutoff valve and the autoslat valve come together at a tee near the autoslat valve.

a) Put a graduated container, STD-6338 under the tee for the return line on the LE UCM shutoff valve and the autoslat valve.

b) Disconnect the return line from the tee.

c) Install a cap or plug on the hydraulic line that goes to the hydraulic reservoir.

d) Pressurize the system B hydraulic reservoir. To pressurize the reservoir, do this task: Hydraulic Reservoirs Pressurization, AMM TASK 29-11-01-860-801 or Hydraulic Reservoirs Pressurization, AMM TASK 29-09-00-860-801.

e) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

f) Measure and make a record of the leakage rate of the hydraulic fluid from the tee.

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g) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

h) Remove the cap or plug from the hydraulic line.

i) Reconnect the return line to the tee.

5) Add the three leakage rates together to find the total leakage rate with the leading edge in the retracted position.

6) If the total leakage rate is more than 0.1 gallon per minute (GPM) then there is excessive leakage in the leading edge system.

NOTE: The hydraulic fuse will set when the leakage rate is more than 0.6 GPM. When the leakage rate is between 0.1 GPM and 0.6 GPM, the fuse might set.

7) If the total leakage rate is not more than 0.1 gallon per minute (GPM) then continue.

HAP 001-013, 015-026, 028-036, 101-999

(e) Move the flap control lever to the 1-unit position to extend the leading edge flaps and slats.

HAP 037-054

(f) Move the flap control lever to the 30-unit position to extend the leading edge flaps and slats.

HAP ALL

(g) Do the steps above to measure the total hydraulic fluid leakage with the leading edge in the extended position:

1) If the total leakage rate is more than 0.1 gallon per minute (GPM) then there is excessive leakage in the leading edge system.

NOTE: The hydraulic fuse will set when the leakage rate is more than 0.6 GPM. When the leakage rate is between 0.1 GPM and 0.6 GPM, the fuse might set.

2) If the total leakage rate is not more than 0.1 gallon per minute (GPM) then continue.

(h) Move the flap control lever to the 10-unit position to fully extend the leading edge slats.

(i) Do the steps above to measure the total hydraulic fluid leakage with the leading edge in the fully extended position:

1) If the total leakage rate is more than 0.1 gallon per minute (GPM) then there is excessive leakage in the leading edge system.

NOTE: The hydraulic fuse will set when the leakage rate is more than 0.6 GPM. When the leakage rate is between 0.1 GPM and 0.6 GPM, the fuse might set.

2) If the total leakage rate is not more than 0.1 gallon per minute (GPM) then replace the leading edge retract fuse. These are the tasks:

- Leading Edge Flap and Slat Hydraulic Fuse Removal, AMM TASK 27-81-61-000-801
- Leading Edge Flap and Slat Hydraulic Fuse Installation, AMM TASK 27-81-61-400-801

NOTE: The hydraulic fuse should never set when the leakage rate is less than 0.1 GPM. If the hydraulic fuse sets with the leakage rate less than 0.1 GPM, the fuse is defective.

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

I. Fault Isolation Procedure - Leading Edge Fails to Operate

(1) Do this check of the LE cruise depressurization valve, V163:

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(a) Do a check of the position of the manual override lever on the LE cruise depressurization valve.

NOTE: The LE cruise depressurization valve is installed in the main landing gear wheel well.

(b) If the manual override lever on the LE cruise depressurization valve is in the off position, then do these steps;

NOTE: There can be a rig pin installed in the manual override lever to hold it in the off position.

1) If it is installed, remove the rig pin from the manual override lever on the LE cruise depressurization valve.
2) Move the manual override lever to the ON position.
3) Do the Repair Confirmation at the end of this task.

(c) If the manual override lever on the LE cruise depressurization valve is in the on position, then continue.

(2) Replace the standby hydraulic fuse. These are the tasks:
- Leading Edge Flap and Slat Hydraulic Fuse Removal, AMM TASK 27-81-61-000-801
- Leading Edge Flap and Slat Hydraulic Fuse Installation, AMM TASK 27-81-61-400-801

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

(3) Replace the leading edge flap flow limiting valve. These are the tasks:
- Leading Edge Flap Flow Limiting Valve Removal, AMM TASK 27-81-71-000-801
- Leading Edge Flap Flow Limiting Valve Installation, AMM TASK 27-81-71-400-801

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

(4) Replace the leading edge standby shutoff valve. These are the tasks:
- Leading Edge Standby Shutoff Valve Removal, AMM TASK 27-81-91-000-801
- Leading Edge Standby Shutoff Valve Installation, AMM TASK 27-81-91-400-801

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

(5) Replace the autoslat control valve. These are the tasks:
- Autoslat Control Valve Removal, AMM TASK 27-83-21-000-801
- Autoslat Control Valve Installation, AMM TASK 27-83-21-400-801

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

J. Repair Confirmation

WARNING: MAKE SURE PERSONS AND EQUIPMENT ARE CLEAR OF THE LEADING EDGE FLAPS AND SLATS AND THE TRAILING EDGE FLAPS. THE FLAPS AND SLATS WILL EXTEND. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Extend and retract the leading edge (LE) flaps and slats with primary control. To extend and retract the LE flaps and slats, do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.

(a) If all the LE flaps and slats extend and retract, then you corrected the fault.

(2) Do this task: Leading Edge Flaps and Slats Retraction, AMM TASK 27-81-00-860-804.

(3) Remove system B hydraulic power. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

END OF TASK

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805. One or More Leading Edge Surfaces Operate Slowly - Fault Isolation

A. Description

(1) Normal system operation uses the hydraulic system B to move the leading edge (LE) flaps and slats.

(2) Hydraulic pressure goes through the LE cruise depressurization valve to the LE flap and slat control valve. The LE flap and slat control valve sends extend pressure to the LE flap and slat actuators. This causes the LE flaps and slats to move to the extend position.

B. Possible Causes

(1) Leading edge flap or slat actuator

(2) Leading edge flap and slat control valve

C. Initial Evaluation

(1) Do this check of the LE flaps and slats extension and retraction time:

(a) Do this task: Leading Edge Flap and Slat Timing Test in Primary Mode, AMM TASK 27-81-00-700-802.

(b) If the LE flaps and slats extend and retract in the specified time limit, then there was an intermittent fault.

(c) If one LE flap did not extend and retract in the specified time limit, then do the Fault Isolation Procedure - One LE Flap Operates Slowly below.

(d) If one LE slat did not extend and retract in the specified time limit, then do the Fault Isolation Procedure - One LE Slat Operates Slowly below.

(e) If more than one LE flap or slat did not extend and retract in the specified time limit, then do the Fault Isolation Procedure - Multiple LE Flaps or Slats Operate Slowly below.

D. Fault Isolation Procedure - One LE Flap Operates Slowly

(1) Replace the applicable LE flap actuator. These are the tasks:
- Leading Edge Flap Actuator Removal, AMM TASK 27-81-31-000-801
- Leading Edge Flap Actuator Installation, AMM TASK 27-81-31-400-801

(a) If the test in the installation task for the LE flap actuator is satisfactory, then you corrected the fault.

E. Fault Isolation Procedure - One LE Slat Operates Slowly

(1) Replace the applicable LE slat actuator. These are the tasks:
- Leading Edge Slat Actuator Removal, AMM TASK 27-81-41-000-801
- Leading Edge Slat Actuator Installation, AMM TASK 27-81-41-400-801

(a) If the test in the installation task for the LE slat actuator is satisfactory, then you corrected the fault.

F. Fault Isolation Procedure - Multiple LE Flaps or Slats Operate Slowly

(1) Do this task: Leading Edge Flap and Slat Control Valve Adjustment, AMM TASK 27-81-81-820-801.

(a) If the test that follows the adjustment of the leading edge flap and slat control valve is satisfactory, then you corrected the fault.

——————— END OF TASK ———————

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806. Leading Edge Extend UCM Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81352 L LE SL EXT UCM

(b) 27-81353 R LE SL EXT UCM

(c) 27-81354 LE SL EXT UCM

(d) 27-81355 L LE SL FE UCM

(e) 27-81356 R LE SL FE UCM

(f) 27-81357 LE SLAT FE UCM

(g) 27-81358 L LE FL EXT UCM

(h) 27-81359 R LE FL EXT UCM

(i) 27-81360 LE FLAP EXT UCM

(j) 27-81224 MULTIPLE PROX Multiple Proximity Sensors Disagree Problem - Fault Isolation, 27-88 TASK 807

(2) Uncommanded motion of the leading edge flaps or slats from the extend or full extend position was detected.

(3) Three or more leading edge slats must drive away from the commanded position for a leading edge slat uncommanded motion fault to be detected. Two or more leading edge flaps must drive away from the commanded position for a leading edge slat uncommanded motion fault to be detected.

(4) Uncommanded motion faults can only be detected by the FSEU when the airspeed is more that 60 knots, thus uncommanded motion faults are normally not detected on the ground.

B. Possible Causes

(1) Trailing Edge Flap Control System

(2) Autoslat Control System

(3) Wiring problem

(4) LE cruise depressurization valve, V163

(5) Autoslat Control Valve, V132

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

(1) (SSM 27-80-01)

(2) (SSM 27-81-11)

(3) (SSM 27-81-12)

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(4) (SSM 27-81-21)

(5) (SSM 27-81-22)

(6) (SSM 27-83-11)

(7) (WDM 27-81-11)

(8) (WDM 27-81-12)

(9) (WDM 27-81-21)

(10) (WDM 27-81-22)

(11) (WDM 27-83-11)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-51351 TE FLAP UCM shows, then, do this task: Trailing Edge Flap Uncommanded Motion Problem - Fault Isolation, 27-51 TASK 830.

(3) If one of the LE SLAT FE UCM maintenance messages, 27-81355, 27-81356, or 27-81357 shows and AUTOSLAT INPUT 1 or 2 maintenance messages, 27-81281, 27-81282 shows, then do this task: FSEU Autoslat Fault - Fault Isolation, 27-83 TASK 806.

(4) If the none of the LE UCM maintenance message show, then there was an intermittent fault.

(5) If one or more of the maintenance messages show, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Open these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

NOTE: Opening and then closing these circuit breakers will reset the uncommanded motion fault in the FSEU.

(2) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) Supply system B hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(4) Move the flap control lever to the UP position to retract the trailing edge flaps and the leading edge flaps and slats.

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(a) If the trailing edge flaps did not retract, then, do this task: Trailing Edge Flaps Primary Operation Problem - Fault Isolation, 27-51 TASK 836.

(b) If the leading edge flaps and slats did not retract, then, do this task: Leading Edge Flaps and Slats Fail to Operate During Normal System Operation - Fault Isolation, 27-81 TASK 803.

(c) If all of the leading and trailing edge surfaces move to the retracted position, then continue.

(5) Do a check of the lights on the LE flap/slat annunciator panel on the overhead panel P5-12:

(a) If all of the FLAPS lights on the LE flap/slat annunciator panel are not off, then, do this task: Flap Retract Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 805.

(b) If all of the SLATS lights on the LE flap/slat annunciator panel are not off, then, do this task: Slat Retract Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 808.

(c) If all of the lights on the LE flap/slat annunciator panel are off, then continue.

(6) Move the flap control lever to the 1 unit position to extend the trailing edge flaps and the leading edge flaps and slats.

NOTE: The leading edge flaps and slats should move to the extended position.

(a) If the trailing edge flaps did not extend to the 1-unit position, then, do this task: Trailing Edge Flaps Primary Operation Problem - Fault Isolation, 27-51 TASK 836.

(b) If the leading edge flaps and slats did not move to the extended position, then, do this task: Leading Edge Flaps and Slats Fail to Operate During Normal System Operation - Fault Isolation, 27-81 TASK 803.

(c) If the leading edge slats move to the fully extended position, then replace the autoslat valve, V132. These are the tasks:

- Autoslat Control Valve Removal, AMM TASK 27-83-21-000-801
- Autoslat Control Valve Installation, AMM TASK 27-83-21-400-801

(d) If all of the leading and trailing edge surfaces move to the extended position, then continue.

(7) Do a check of the EXT lights on the LE flap/slat annunciator panel on the overhead panel P5-12:

(a) If all of the FLAPS EXT lights on the LE flap/slat annunciator panel are not on, then, do this task: Flap Extend Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 806.

(b) If all of the SLATS EXT lights on the LE flap/slat annunciator panel are not on, then do this task: Slat Inboard Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 804.

(c) If all of the EXT lights on the LE flap/slat annunciator panel are on, then continue.

HAP 001-013, 015-026, 028-036, 101-999

(8) Move the flap control lever to the 10 unit position to extend the trailing edge flaps and the leading edge and slats.

NOTE: The leading edge slats should move to the fully extended position.

(a) If the leading edge slats did not move to the fully extended position, then do this task: Leading Edge Flaps and Slats Fail to Operate During Normal System Operation - Fault Isolation, 27-81 TASK 803.

(b) If all of the leading edge slats move to the fully extended position, then continue.

HAP 037-054

(9) Move the flap control lever to the 30 unit position to extend the trailing edge flaps and the leading edge and slats.

NOTE: The leading edge slats should move to the fully extended position.

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HAP 037-054 (Continued)

(a) If the leading edge slats did not move to the fully extended position, then do this task: Leading Edge Flaps and Slats Fail to Operate During Normal System Operation - Fault Isolation, 27-81 TASK 803.

(b) If all of the leading edge slats move to the fully extended position, then continue.

HAP ALL

(10) Do a check of the FULL EXT lights on the LE flap/slat annunciator panel on the overhead panel P5-12:

(a) If all of the SLATS FULL EXT lights on the LE flap/slat annunciator panel are not on, then do this task: Slat Outboard Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 803.

(b) If all of the SLATS FULL EXT lights on the LE flap/slat annunciator panel are on, then continue.

(11) Move the flap control lever to the UP position to retract the trailing edge flaps and the leading edge and slats.

(a) If the leading edge flaps and slats did not retract, then do this task: Leading Edge Flaps and Slats Fail to Operate During Normal System Operation - Fault Isolation, 27-81 TASK 803.

(b) If all of the leading edge flaps and slats move to the retracted position, then continue.

(12) Do a check of the inputs to the FSEU, M1746 from the Stall Management Yaw Damper Computers, M1747 and M1748:

(a) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

to get access to the FSEU in the main equipment center.

(b) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?.

(c) Push the NO button until OTHER FUNCTNS? shows on the display.

(d) Push the YES button to select OTHER FUNCTNS? on the FSEU.

(e) Push the NO button until I/O MONITOR? shows on the display.

(f) Push the YES button to select I/O MONITOR? on the FSEU.

(g) Push the NO button until DISCRETE INPUTS? shows on the display.

(h) Push the YES button to select DISCRETE INPUTS? on the FSEU.

(i) Push the NO button until AUTOSLT1 shows on the display.

NOTE: Line 2 on the display will show either COMMAND or NOT CMD.

(j) Push the down arrow to show AUTOSLT2 on the display.

NOTE: Line 2 on the display will show either COMMAND or NOT CMD.

(k) If AUTOSLT1 or AUTOSLT2 shows COMMAND on the second line, do this task: FSEU Autoslat Fault - Fault Isolation, 27-83 TASK 806.

(l) If AUTOSLT1 and AUTOSLT2 show NOT CMD on the second line, then continue.

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(m) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

to the main equipment center.

(13) Replace the LE cruise depressurization valve, V193. These are the tasks:
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Removal, AMM TASK 27-81-52-000-801
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Installation, AMM TASK 27-81-52-400-801

——————— END OF TASK ———————

807. Leading Edge UCM Shutoff Valve Discrete Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-81424 LE UCM SOV

(2) Overcurrent was detected on the leading edge uncommanded motion (UCM) shutoff valve discrete output during the Existing Faults test.

B. Possible Causes

(1) LE UCM shutoff valve, V162

(2) Wiring problem

(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

D. Related Data

(1) (SSM 27-81-51)

(2) (WDM 27-81-51)

E. Initial Evaluation

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(3) If the maintenance message does not show, then there was an intermittent fault.

(4) If the maintenance message shows, then do the Fault Isolation Procedure below.

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F. Fault Isolation Procedure

(1) Do this check of the LE UCM shutoff valve, V162:

(a) Remove the connector D10533 from the LE UCM shutoff valve, V162.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the maintenance message does not show, replace the LE UCM shutoff valve. These are the tasks:

- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Removal, AMM TASK 27-81-52-000-801
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Installation, AMM TASK 27-81-52-400-801

2) If the maintenance message does show, then continue.

(2) Do this check of the wiring between the LE UCM shutoff valve, V162 and the FSEU, M1746:

(a) Do a voltage check between pin D2 of connector D10533 at the LE UCM shutoff valve and structure ground.

(b) If there is AC or DC voltage between pin D2 and structure ground, then do these steps:

1) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

2) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D10533 at the LE UCM shutoff valve:

D728A		D10533
pin D12	- - - - - - - - - - - - - - - -	pin 2

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D10533 to the LE UCM shutoff valve, V162.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(c) If there was not voltage at the pin, or if you did not find a problem with the wiring, then continue.

(3) Re-connect connector D10533 to the LE UCM shutoff valve, V162.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

808. Leading Edge Cruise Depressurization Valve Discrete Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-81425 LE CRZ DEPRESS

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(2) Overcurrent was detected on the leading edge (LE) cruise depressurization valve discrete output during the Existing Faults test.

B. Possible Causes

(1) LE cruise depressurization valve, V163

(2) Wiring problem

(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

D. Related Data

(1) (SSM 27-81-51)

(2) (WDM 27-81-51)

E. Initial Evaluation

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

(2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(3) If the maintenance message does not show, then there was an intermittent fault.

(4) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the LE cruise depressurization valve, V163:

(a) Remove the connector D10535 from the LE cruise depressurization valve, V163.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(c) If the maintenance message does not show, replace the LE cruise depressurization valve. These are the tasks:

- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Removal, AMM TASK 27-81-52-000-801
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Installation, AMM TASK 27-81-52-400-801

(d) If the maintenance message does show, then continue.

(2) Do this check of the wiring between the LE cruise depressurization valve, V163 and the FSEU, M1746:

(a) Do a voltage check between pin D2 of connector D10535 at the LE cruise depressurization valve and structure ground.

(b) If there is AC or DC voltage between the pin and structure ground, then do these steps:

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1) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

2) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D10535 at the LE cruise depressurization valve:

D728A		D10535
pin A11	- - - - - - - - - - - - - - - -	pin 2

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-connect connector D10535 to the LE cruise depressurization valve, V163.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(c) If there was not voltage on the pin, or if you did not find a problem with the wiring, then continue.

(3) Re-connect connector D10535 to the LE cruise depressurization valve, V163.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

809. Leading Edge Intransit Discrete Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-81420 LE INTRANS

(2) Overcurrent was detected on the LE intransit discrete output during the Existing Faults test.

B. Possible Causes

(1) SMYDC 1, M1747

(2) SMYDC 2, M1748

(3) Wiring problem

(4) FSEU, M1746

C. Related Data

(1) (SSM 27-32-11)

(2) (SSM 27-32-21)

(3) (SSM 27-81-31)

(4) (WDM 27-32-11)

(5) (WDM 27-32-21)

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(6) (WDM 27-81-31)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this check of the SMYDC 1, M1747:

(a) Remove the SMYDC 1, M1747. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the maintenance message does not show, replace the SMYDC 1. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) If the maintenance message does show, then continue.

(2) Do this check of the SMYDC 2, M1748:

(a) Remove the SMYDC 2, M1748. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the maintenance message does not show, replace the SMYDC 2. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) If the maintenance message does show, then continue.

(3) Do this check for DC voltage to the SMYDC 1, M1747:

(a) Measure the DC voltage between pin 79 of connector D3683A at the SMYDC 1, M1747, and structure ground.

(b) If the DC voltage is not equal to zero volts, then do these steps:

1) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

2) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D3683A at the SMYDC 1, M1747:

D728A		D3683A
pin D11	- - - - - - - - - - - - - - - -	pin 79

3) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D3685A at the SMYDC 2, M1748:

D728A		D3685A
pin D11	- - - - - - - - - - - - - - - -	pin 79

4) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

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b) Re-install the SMYDC 1 and SMYDC 2. To install them, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(c) If the DC voltage equals to zero volts, then continue.

(4) Do this check for AC voltage to the SMYDC 1, M1747:

(a) Measure the AC voltage between pin 48 of connector D3683A at the SMYDC 1, M1747, and structure ground.

(b) If the AC voltage is not equal to zero volts, then do these steps:

1) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

2) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D3683A at the SMYDC 1, M1747:

D728A		D3683A
pin D11	- - - - - - - - - - - - - - - -	pin 79

3) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D3685A at the SMYDC 2, M1748:

D728A		D3685A
pin D11	- - - - - - - - - - - - - - - -	pin 79

4) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the SMYDC 1 and SMYDC 2. To install them, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(c) If the AC voltage equals to zero volts, then continue.

1) Re-install the SMYDC 1 and SMYDC 2. To install them, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(5) Replace the FSEU. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

810. Leading Edge UCM Discrete Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

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(a) 27-81426 LE UCM

(2) Overcurrent was detected on the LE UCM discrete output during the Existing Fault test.

B. Possible Causes

(1) SMYDC 1, M1747

(2) SMYDC 2, M1748

(3) Wiring problem

(4) FSEU, M1746

C. Related Data

(1) (SSM 27-32-11)

(2) (SSM 27-32-21)

(3) (SSM 27-81-31)

(4) (WDM 27-32-11)

(5) (WDM 27-32-21)

(6) (WDM 27-81-31)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do this check of the SMYDC 1, M1747:

(a) Remove the SMYDC 1, M1747. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the maintenance message does not show, replace the SMYDC 1. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) If the maintenance message does show, then continue.

(2) Do this check of the SMYDC 2, M1748:

(a) Remove the SMYDC 2, M1748. To remove it, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the maintenance message does not show, replace the SMYDC 2. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) If the maintenance message does show, then continue.

(3) Do this check for DC voltage to the SMYDC 1, M1747:

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(a) Measure the DC voltage between pin 48 of connector D3683A at the SMYDC 1, M1747, and structure ground.

(b) If the DC voltage is not equal to zero volts, then do these steps:

1) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

2) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D3683A at the SMYDC 1, M1747:

D728A		D3683A
pin C10	- - - - - - - - - - - - - - - -	pin 48

3) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D3685A at the SMYDC 2, M1748:

D728A		D3685A
pin C10	- - - - - - - - - - - - - - - -	pin 48

4) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the SMYDC 1 and SMYDC 2. To install them, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(c) If the DC voltage equals to zero volts, then continue.

(4) Do this check for AC voltage to the SMYDC 1, M1747:

(a) Measure the AC voltage between pin 48 of connector D3683A at the SMYDC 1, M1747, and structure ground.

(b) If the AC voltage is not equal to zero volts, then do these steps:

1) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

2) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D3683A at the SMYDC 1, M1747:

D728A		D3683A
pin C10	- - - - - - - - - - - - - - - -	pin 48

3) Do a wiring check between these pins of connector D728A at the E1-1 shelf and connector D3685A at the SMYDC 2, M1748:

D728A		D3685A
pin C10	- - - - - - - - - - - - - - - -	pin 48

4) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the SMYDC 1 and SMYDC 2. To install them, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

c) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(c) If the AC voltage equals to zero volts, then continue.

1) Re-install the SMYDC 1 and SMYDC 2. To install them, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(5) Replace the FSEU. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

END OF TASK

811. Takeoff Warning Fault - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-81421 TAKEOFF WARNING

(2) An overcurrent condition was detected on the takeoff warning discrete output for the proximity switch electronics unit (PSEU) during an existing faults test.

B. Possible Causes

(1) Proximity switch electronics unit (PSEU), M2061

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	7	C01208	STALL WARN ASYM MODE

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

(1) (SSM 27-81-11)

(2) (SSM 31-53-11)

(3) (WDM 27-81-11)

(4) (WDM 31-53-11)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

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(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the Proximity Switch Electronics Unit (PSEU), M2061:

(a) Remove the PSEU, M2061. To remove it, do this task: Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

1) Install a new PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU, M1746 and the PSEU, M2061:

(a) Do a voltage check between the PSEU connector D10986, Pin 27 and structure ground.

(b) If there is AC or DC voltage between connector D10986, pin 27 and structure ground, then do this check of the wiring between the FSEU, M1746 and the PSEU, M1746:

1) Remove the FSEU. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

2) Do a wiring check between these pins of connector D728A at the FSEU and connector D10986 at the PSEU:

D728A		**D10986**
pin B12	- - - - - - - - - - - - - - - -	pin 27
pin B12	- - - - - - - - - - - - - - - -	pin 48

3) If you find a problem with the wiring, then do these steps:

a) Repair the wiring.

b) Re-install the PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

c) Re-install the FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(c) If there was not voltage on the pin, or if you did not find a problem with the wiring, then continue.

(3) Re-install the PSEU, M2061. To install it, do this task: Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801.

(4) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

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812. Leading Edge Lockout Problem - Fault Isolation (Figure 301)

A. Description

(1) This task is for these maintenance messages:

(a) 27-81303 SLAT 1 IN TRANSIT

(b) 27-81306 SLAT 2 IN TRANSIT

(c) 27-81309 SLAT 3 IN TRANSIT

(d) 27-81312 SLAT 4 IN TRANSIT

(e) 27-81315 SLAT 5 IN TRANSIT

(f) 27-81318 SLAT 6 IN TRANSIT

(g) 27-81321 SLAT 7 IN TRANSIT

(h) 27-81324 SLAT 8 IN TRANSIT

(2) LE device lockouts are usually caused by excessive internal leakage in the LE slat actuators that set the hydraulic fuses.

B. Possible Causes

(1) Electrical failure

(2) Excessive internal leakage in the LE slat actuators

C. Related Data

(1) (WDM 27-81-31)

D. Initial Evaluation

(1) Make sure that the LE system is still locked out in the mid-extend position.

NOTE: The following troubleshooting steps will not work if the LE lockout has cleared itself.

(a) If the LE has cleared itself, do the following steps to create the lockout condition:

1) Supply system B hydraulic power. To supply hydraulic power, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

2) Move the flap control lever to the 1-unit position to extend the leading edge flaps and slats.

3) Wait for 20 to 30 minutes after the LE flaps and slats had stopped moving.

4) Move the flap control lever to the UP position to retract the leading edge flaps and slats.

5) If the LE flaps and slats retract, then you had not created the lockout condition. Do these steps:

a) Move the flap control lever to the 1-unit position to extend the leading edge flaps and slats.

b) Wait for 60 minutes after the LE flaps and slats had stopped moving.

c) Move the flap control lever to the UP position to retract the leading edge flaps and slats.

d) If the LE flaps and slats retract, then you can not creat the lockout condition. Do the fault isolation procedure - Leading Edge Lockout below.

6) If the LE flaps and slats do not move, then you had created the lockout condition. Continue with the next step.

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7) Open this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

8) If the LE flaps and slats do not move, then the LE lockout was not caused by an electrical problem. Do the fault isolation procedure Leading Edge Lockout below.

9) If the flaps and slats retract, then the LE lockout was caused by an electrical problem.

10) Close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

E. Fault Isolation Procedure - Leading Edge Lockout

(1) Reset the system B hydraulic fuses. To reset them, do this task: Flap and Slat Hydraulic Fuses (System B) Reset, AMM TASK 27-81-61-860-801.

(2) Do the following steps to check for actuator internal leakage without breaking into the hydraulic system:

NOTE: Do this task, if you have the stethoscope, COM-1797 and Infrared Thermometer, COM-1572. If you do not have these tools, go to the next task.

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) If hydraulic system B is not pressurized, pressurize hydraulic system B. To pressurize hydraulic system B, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Move the flap control lever to the 1-unit position to extend the leading edge flaps and slats.

1) Make sure that the LE slats move to the mid-extend position.

(c) Use the Infrared Thermometer, COM-1572 to measure the temperatures of all 8 LE slat actuators and 4 LE flap actuators.

NOTE: The larger part of the actuator barrel is the good location to measure the temperature. Measure the temperature at the same location on all of the actuators.

1) If the temperature of one actuator is more than 10 degrees higher than other actuators, then there is internal leakage in the warmer actuator.

(d) If you do not have the Infrared Thermometer, COM-1572, use the stethoscope, COM-1797 to listen to the internal leakage of all 8 LE slat actuators and 4 LE flap actuators.

NOTE: The actuator manifold next to the "P" valve port is the good location to put the stethoscope. Listen to the internal leakage at the same location on all of the actuators.

1) Compare the noise you hear from each of the actuator. If the leaking noise from one actuator is significantly higher than other actuators, then there is internal leakage in that actuator.

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(e) If you are confident that there is one of more actuator that is leaking internally, replace the actuator:

1) For the leading edge flap, These are the tasks:
- Leading Edge Flap Actuator Removal, AMM TASK 27-81-31-000-801
- Leading Edge Flap Actuator Installation, AMM TASK 27-81-31-400-801

2) For the leading edge slats. These are the tasks:
- Leading Edge Slat Actuator Removal, AMM TASK 27-81-41-000-801
- Leading Edge Slat Actuator Installation, AMM TASK 27-81-41-400-801

(f) If you are not confident that there is one actuator that is leaking internally, then continue with the next steps to measure the total leakage in the LE system or do the steps to measure the internal leakage in each actuator.

(3) Do the following steps to measure the internal leakage in the leading edge system:

NOTE: The Leading Edge fuses will never net if the internal leakage (flow) is less than 0.1 gpm. The fuses will set if the internal leakage is more than 0.4 gpm. If the internal leakage is between 0.1 gpm and 0.4 gpm, it is difficult to say if the fuse will set or not. If the internal leakage is less than 0.1 gpm, you have a healthy leading edge system.

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) If hydraulic system B is not pressurized, pressurize hydraulic system B. To pressurize hydraulic system B, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Move the flap control lever to the 1-unit position to extend the leading edge flaps and slats.

1) Make sure that the LE slats move to the mid-extend position.

(c) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

(e) Disconnect the hydraulic lines at the three locations listed below:

1) Put a graduated (scaled) collector, STD-1223 under the tee [12] on the autoslat valve [13].

2) Disconnect the return line [11] from the tee [12].

3) Install a cap or plug on the return line [11].

4) Connect a hose to the tee [12] and collect the fluid from the hose into the graduated (scaled) collector, STD-1223.

5) Put a graduated (scaled) collector, STD-1223 under the return line [3] to the LE flap and slat control valve [2].

6) Disconnect the return line [3] from the control valve [2].

7) Install a cap or plug on the return line [3].

8) Connect a hose to the port from the control valve [2] and collect the fluid from the hose into the graduated (scaled) collector, STD-1223.

9) Put a graduated (scaled) collector, STD-1223 under the return line [8] to the LE standby shutoff valve [5].

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10) Disconnect the return line [8] from the LE standby shutoff valve [5].

11) Install a cap or plug on the port of the LE standby shutoff valve [5].

12) Connect a hose to the return line [8] and collect the fluid from the hose into the graduated (scaled) collector, STD-1223.

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(f) Pressurize hydraulic system B, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(g) Collect the fluid from the three hoses that you connect in the previous steps.

1) Record the total leakage from the three hoses for a period of 1 minute.

2) If the total leakage is more than 0.1 gpm, then do the steps to measure the internal leakage in each actuator.

3) If the total leakage is less than 0.1 gpm, then continue.

(4) Do the following steps to measure the internal leakage across the autoslat valve [13]:

(a) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(b) Remove the cap or plug that you installed on the return line [3].

(c) Connect the return line [3] to the control valve [2].

(d) Remove the cap or plug that you installed on the port of the LE standby shutoff valve [5].

(e) Connect the return line [8] to the LE standby shutoff valve [5].

(f) Leave the return line [11] disconnected from the tee [12].

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(g) Pressurize hydraulic system B using the EMDP, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

HAP 001-013, 015-026, 028-036, 101-999

(h) Move the flap control lever to the 10-unit position to extend the leading edge flaps and slats.

1) Make sure that the LE slats move to the extend position.

HAP 037-054

(i) Move the flap control lever to the 30-unit position to extend the leading edge flaps and slats.

1) Make sure that the LE slats move to the fully extended position.

HAP ALL

(j) Use the Proximity Switch Electronics Unit (PSEU) to simulate air mode. To simulate air mode, do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.

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HAP 001-013, 015-026, 028-036, 101-999

(k) Move the flap control lever to the 30 unit position to extend the trailing edge flaps.

NOTE: A small amount of hydraulic fluid will leak from the autoslat valve when the autoslat valve solenoids are energized. The solenoids will be energized for approximately 1/2 second, when the trailing edge flaps are between the 15 and 25 unit positions.

HAP 037-054

(l) Move the flap control lever to the 40 unit position to extend the trailing edge flaps.

NOTE: A small amount of hydraulic fluid will leak from the autoslat valve when the autoslat valve solenoids are energized. The solenoids will be energized for approximately 1/2 second, when the trailing edge flaps are between the 30 and 40 unit positions.

HAP ALL

(m) Measure and record the leakage rate from the port on the autoslat valve [13] again.

1) If the leakage rate is more than 140 cc/minute, then replace the autoslat valve [13] or the LE UCM valve [10].

a) If the leakage rate is more than 40 cc/minute for the autoslat valve [13], then replace the autoslat valve [13]. To replace it, these are the tasks:
- Autoslat Control Valve Removal, AMM TASK 27-83-21-000-801
- Autoslat Control Valve Installation, AMM TASK 27-83-21-400-801

b) If the leakage rate is more than 100 cc/minute for the LE UCM valve [10], then replace the LE UCM valve [10]. To replace it, these are the tasks:
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Removal, AMM TASK 27-81-52-000-801
- LE Uncommanded Motion (UCM) or LE Cruise Depressurization Valve Installation, AMM TASK 27-81-52-400-801

2) If the leakage rate is not more than 140 cc/minute, then continue.

(n) Use the Proximity Switch Electronics Unit (PSEU) to return the airplane to ground mode. To return to ground mode, do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

(o) Move the flap control lever to the UP position to retract the leading and trailing edge flaps and slats.

(p) Remove system B hydraulic power. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(q) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

(r) Remove the cap or plug from the hydraulic return line [11].

(s) Connect the return line [11] to the tee [12].

(5) Do the following steps to measure the internal leakage across the actuator:

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WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) If hydraulic system B is not pressurized, pressurize hydraulic system B. To pressurize hydraulic system B, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(b) Move the flap control lever to the 1-unit position to extend the leading edge flaps and slats.

1) Make sure that the LE slats move to the mid-extend position.

(c) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(d) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

CAUTION: DO NOT MOVE THE LEADING EDGE DEVICES FOR THE REMAINING OF THIS ACTUATOR LEAKAGE CHECK. IF THE LEADING EDGE DEVICES MOVE WITH THE HOSES CONNECTED, THEN THE HOSES CAN DAMAGE THE LEADING EDGE STRUCTURE.

(e) Disconnect the actuator's hydraulic lines at these two locations:

1) The actuator's Standby line:

a) Disconnect the line anywhere between the actuator and the "T".

b) Put a cap or plug on the port that is closest to the "T".

c) Connect a hose to the port closest to the actuator and collect the fluid from the hose in the graduated (scaled) collector, STD-1223.

2) The actuator's C2 line:

a) Disconnect the line anywhere between the actuator and the "T".

b) Put a cap or plug on the port that is closest to the "T".

c) Connect a hose to the port closest to the actuator and collect the fluid from the hose in the graduated (scaled) collector, STD-1223.

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(f) Pressurize hydraulic system B, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

(g) Measure and record the leakage rate from both of the hoses for the actuator for a period of one minute.

1) If the combine leakage rate is not more than 15 cc/minute, then the actuator is good.

2) If the combine leakage rate is more than 15 cc/minute, then replace the actuator.

To replace the LE flap actuator, these are the tasks:

- Leading Edge Flap Actuator Removal, AMM TASK 27-81-31-000-801
- Leading Edge Flap Actuator Installation, AMM TASK 27-81-31-400-801

To replace the LE slat actuator, these are the tasks:

- Leading Edge Slat Actuator Removal, AMM TASK 27-81-41-000-801

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- Leading Edge Slat Actuator Installation, AMM TASK 27-81-41-400-801

a) Do the steps to flush the Leading Edge system.

(h) Remove the hoses and connect the hydraulic lines that you disconnected.

(6) Do the following steps to flush the Leading Edge system:

NOTE: Start flushing from inboard and working outboard.

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) If hydraulic system B is not pressurized, pressurize hydraulic system B. To pressurize hydraulic system B, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

HAP 001-013, 015-026, 028-036, 101-999

(b) Move the flap control lever to the 10-unit position to extend the leading edge flaps and slats.

1) Make sure that the LE slats move to the full-extend position.

HAP 037-054

(c) Move the flap control lever to the 30-unit position to fully extend the leading edge flaps and slats.

1) Make sure that the LE slats move to the full-extend position.

HAP ALL

(d) Remove system B hydraulic power, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

(e) Remove the pressure from the system B reservoir. To remove the pressure, do this task: Hydraulic Reservoirs Depressurization, AMM TASK 29-11-01-860-802 or Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802.

CAUTION: DO NOT MOVE THE LEADING EDGE DEVICES FOR THE REMAINING OF THIS ACTUATOR LEAKAGE CHECK. IF THE LEADING EDGE DEVICES MOVE WITH THE HOSES CONNECTED, THEN THE HOSES CAN DAMAGE THE LEADING EDGE STRUCTURE.

(f) For each of the eight actuators, do the following steps:

1) Disconnect the actuator's retract pressure line at the swivel.

a) Connect a hose to the port closest to the "T" and collect the fluid from the hose in the graduated (scaled) collector, STD-1223.

NOTE: Take caution to prevent hydraulic fluid from splattering.

b) Leave open the port that is closest to the actuator.

2) Disconnect the actuator's C1 line at the swivel.

a) Connect a hose to the port closest to the "T" and collect the fluid from the hose in the graduated (scaled) collector, STD-1223.

NOTE: Take caution to prevent hydraulic fluid from splattering.

b) Leave open the port that is closest to the actuator.

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3) Disconnect the actuator's C2 line at the swivel.

NOTE: Skip this step for the leading edge flap actuators. The LE flap actuators do not have a C2 line.

a) Connect a hose to the port closest to the "T" and collect the fluid from the hose in the graduated (scaled) collector, STD-1223.

NOTE: Take caution to prevent hydraulic fluid from splattering.

b) Leave open the port that is closest to the actuator.

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

4) Pressurize hydraulic system B using the EMDP, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

5) Turn on the pump for 2 second then turn off using the HYP PUMPS switch on the P5 HYDRAULIC PANEL.

NOTE: The pump should be on long enough to flush out approximately 1/2 gallon of fluid. If the pump is on too long, then the LE system's fuses may set.

6) Remove the hoses and connect the hydraulic lines that you disconnected.

7) Add fluid to the B hydraulic system's reservoir if necessary.

8) Repeat these steps for the other actuators.

———————— END OF TASK ————————

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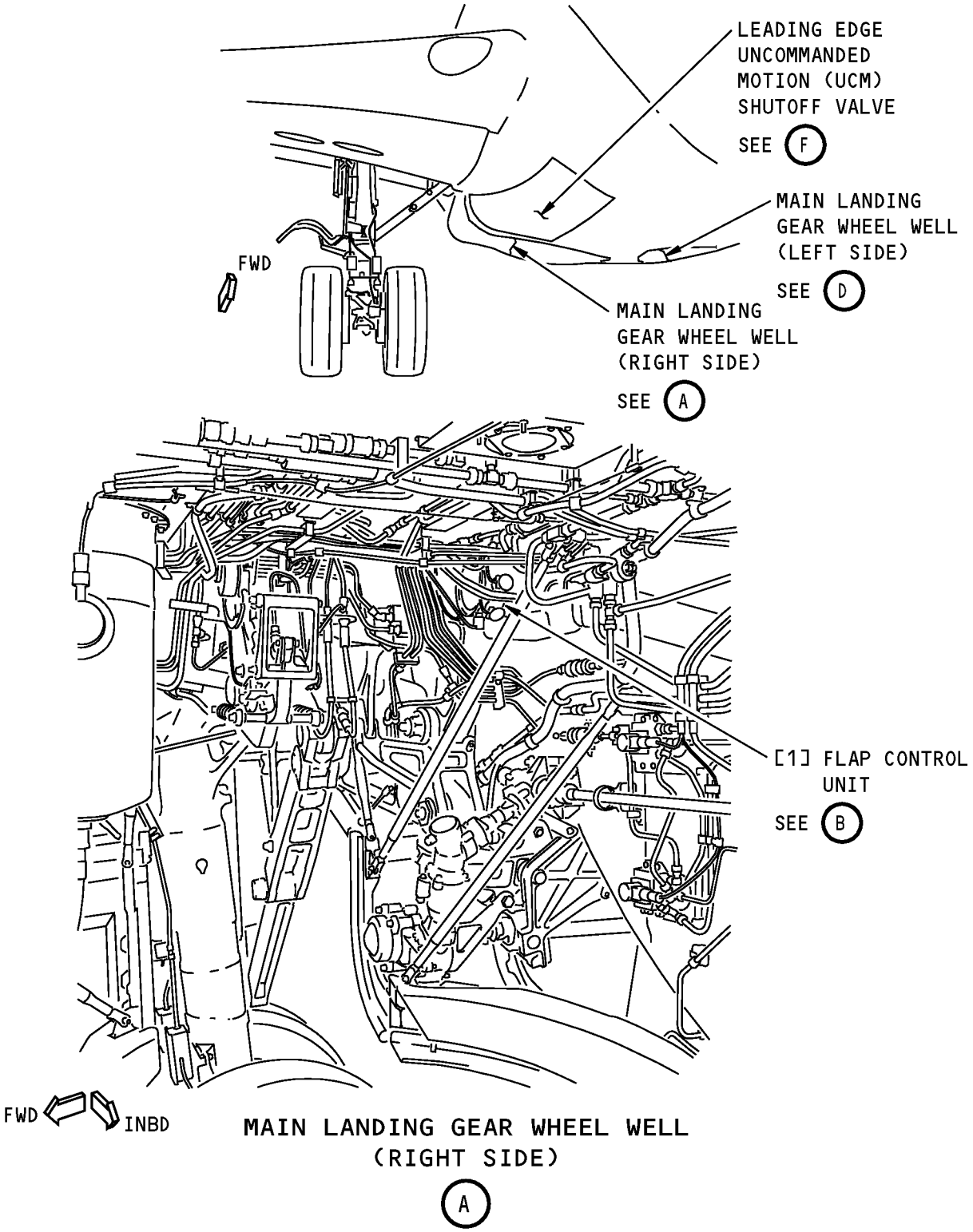

Leading Edge Flap and Slat Control Valves
Figure 301 (Sheet 1 of 4)/ 27-81-00-990-801

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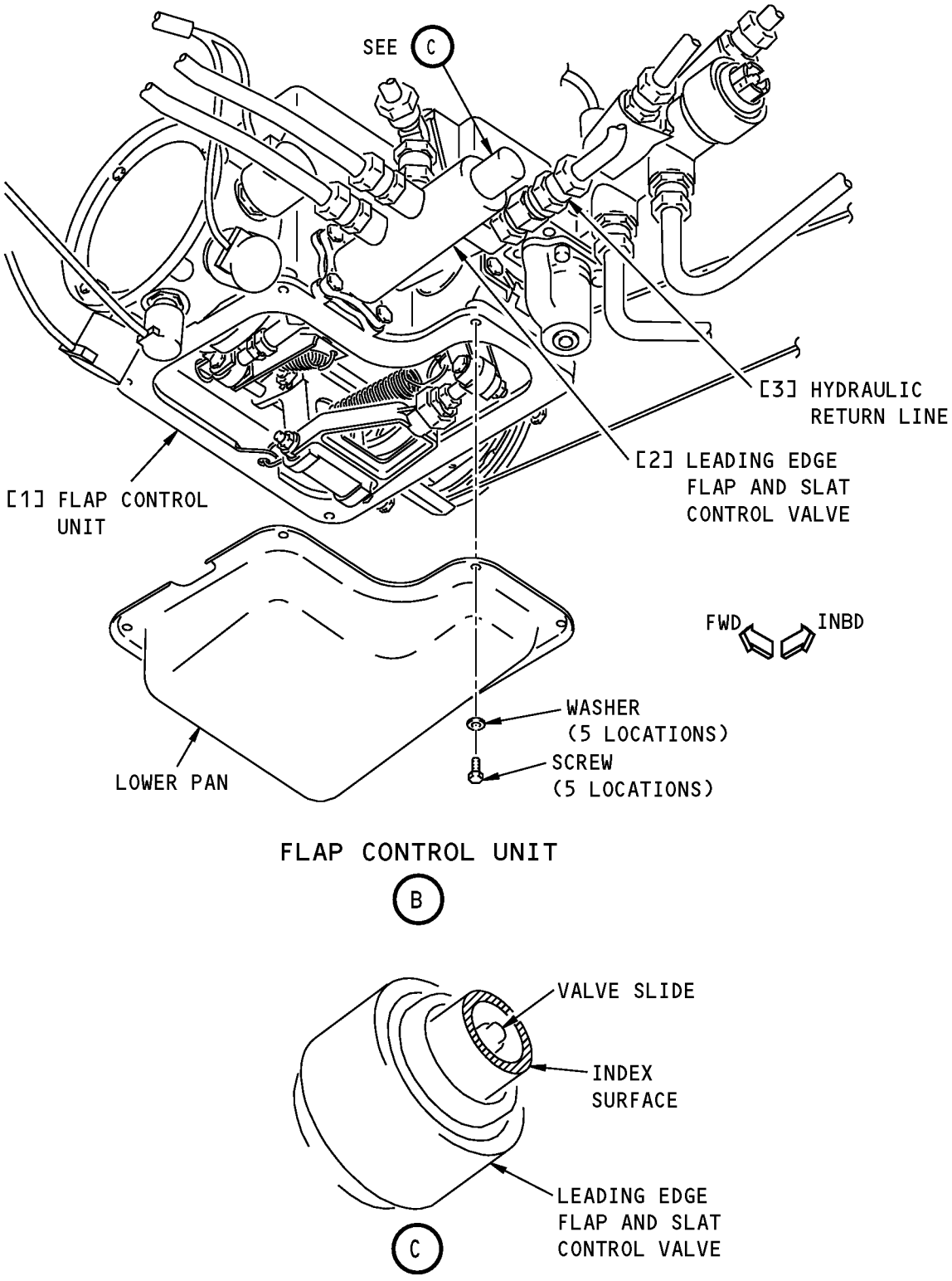

Leading Edge Flap and Slat Control Valves
Figure 301 (Sheet 2 of 4)/ 27-81-00-990-801

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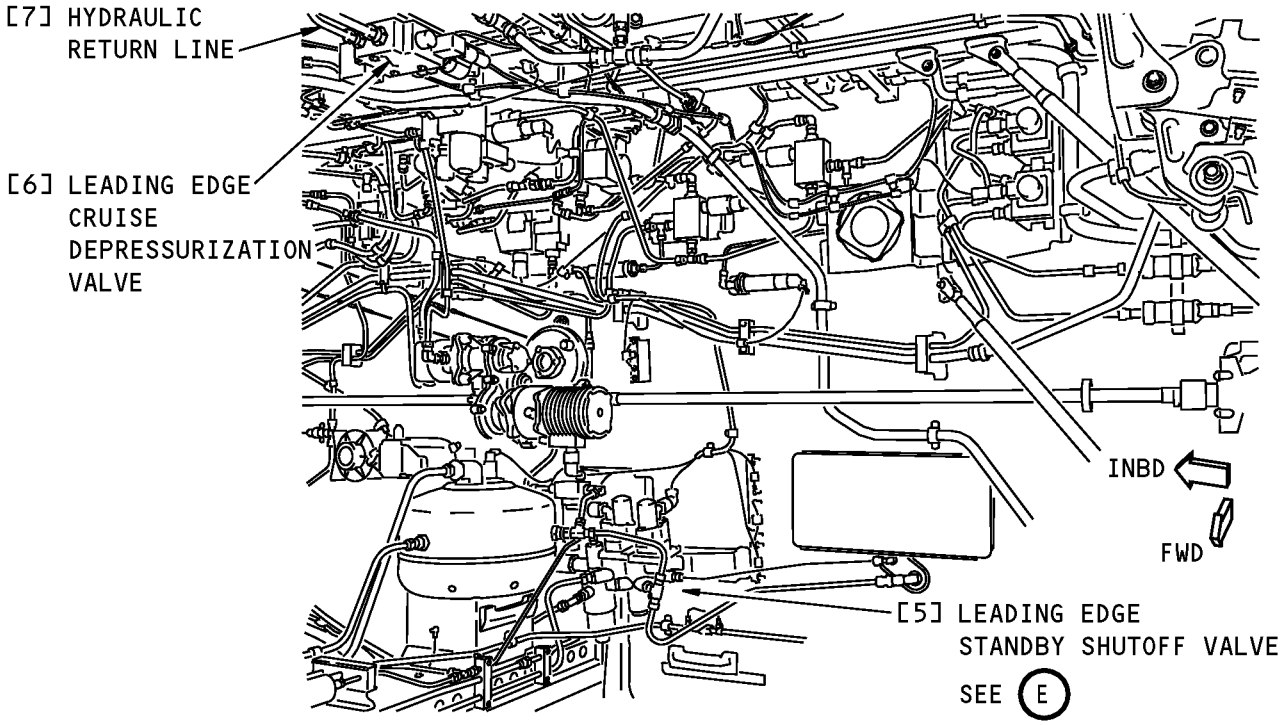
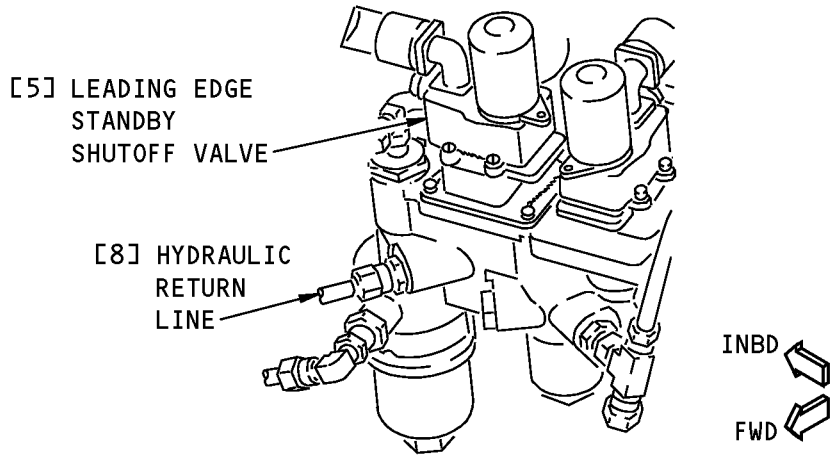


MAIN LANDING GEAR WHEEL WELL
(LEFT SIDE)

D



LEADING EDGE STANDBY
SHUTOFF VALVE

E

Leading Edge Flap and Slat Control Valves
Figure 301 (Sheet 3 of 4)/ 27-81-00-990-801

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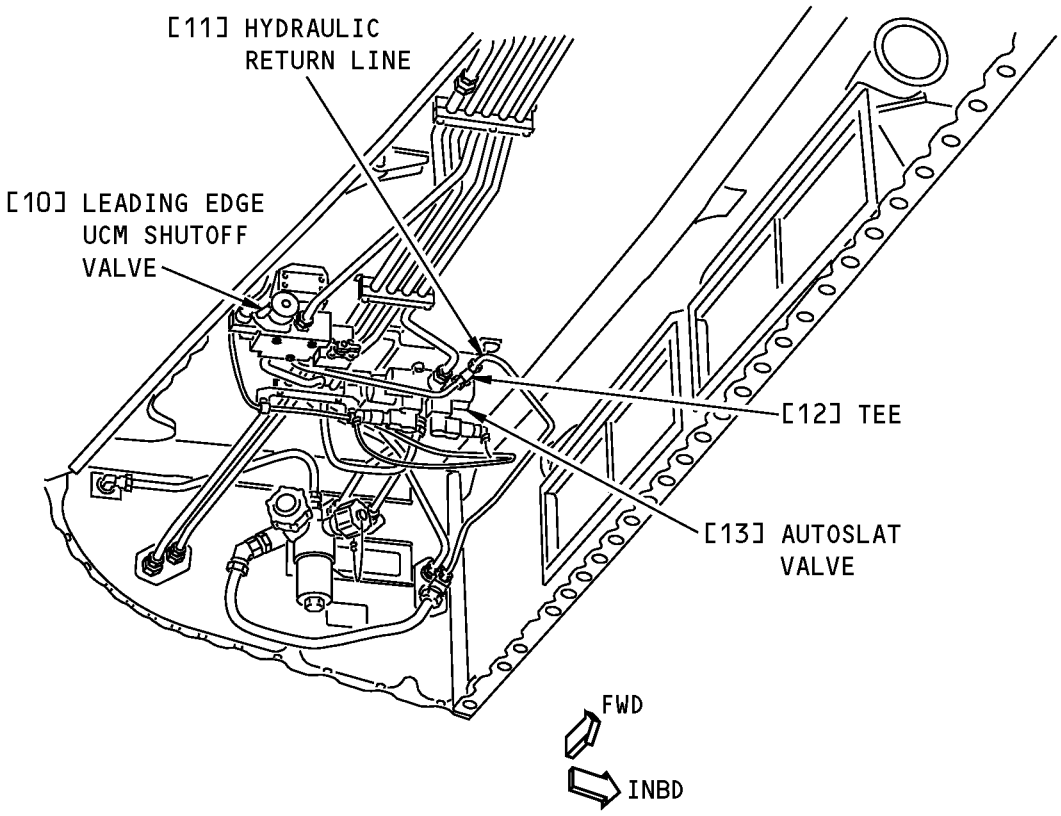

LEADING EDGE UNCOMMANDED MOTION (UCM) SHUTOFF VALVE
(RIGHT CENTER SECTION WING BOX)
(UNDERWING PANEL IS REMOVED)

F

Leading Edge Flap and Slat Control Valves
Figure 301 (Sheet 4 of 4)/ 27-81-00-990-801

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801. SMYD Autoslat No Power - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81002 A/S NO POWER (SMYD 1)

(b) 27-82002 A/S NO POWER (SMYD 2)

(2) The SMYD autoslat does not detect 28 VDC from the DC bus.

(3) The stall warning test will fail if the fault is present.

B. Possible Causes

(1) Wiring problem

(2) Stall management yaw damper (SMYD), M1747 (SMYD 1) or M1748 (SMYD 2)

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

D. Related Data

(1) (Figure 301)

(2) (SSM 27-83-11)

(3) (SSM 27-83-21)

(4) (WDM 27-83-11)

(5) (WDM 27-83-21)

E. Initial Evaluation

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

(2) Do the EXISTING FAULTS test for the SMYD. To do the test, do this task: Stall Management Yaw Damper (SMYD) BITE Test - Ground Test, AMM TASK 27-32-00-740-803

(a) If the maintenance message does not show, then there was an intermittent fault.

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check for power to the SMYD:

(a) Remove the applicable SMYD, M1747 (SMYD 1) or M1748 (SMYD 2). To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

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(b) Examine the connector and sockets for damage and unwanted material.

(c) For maintenance message 27-81002 (SMYD 1), do a check for 28 VDC between pin 3 of connector D3683A and structure ground.

(d) For maintenance message 27-82002 (SMYD 2), do a check for 28 VDC between pin 3 of connector D3685A and structure ground.

(e) If there is not 28 VDC at pin 3, then do these steps:

1) Install a new SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

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

(f) If there is not 28 VDC at pin 3, then continue.

(2) Replace the applicable circuit breaker:

(a) For maintenance message 27-81002, replace this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

(b) For maintenance message 27-82002, replace this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2

(c) Do the Repair Confirmation at the end of this task:

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

(3) Do this check of the wiring:

(a) Remove the applicable SMYD, M1747 (SMYD 1) or M1748 (SMYD 2). To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Do a wiring check between these connections on the applicable circuit breaker on the P6-2 panel and the SMYD connector:

Table 201

MAINTENANCE MESSAGE	CIRCUIT BREAKER		SMYD CONNECTOR
27-81002 (SMYD 1)	C1068 (C14)	–	D3683A pin 3
27-82002 (SMYD 2)	C1070 (B14)	–	D3685A pin 3

(c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

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

4) If the Repair Confirmation is satisfactory, then you corrected the fault.

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

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

- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801

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- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

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

(b) If the Repair Confirmation is satisfactory, then you corrected the fault.

G. Repair Confirmation

(1) Do this test of the stall warning systems:

(a) Do these steps to test the number 1 stall warning system:

1) If it is necessary, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Push and hold the STALL WARNING TEST NO. 1 switch on the stall warning test module.

3) Make sure the captain's control column shaker operates.

4) Release the test switch.

5) Make sure the shaker stops.

(b) Do these steps to test the number 2 stall warning system:

1) If it is necessary, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

2) Push and hold the STALL WARNING TEST NO. 2 switch on the stall warning test module.

3) Make sure the first officer's control column shaker operates.

4) Release the test switch.

5) Make sure the shaker stops.

(c) If the stick shaker tests passed, then you corrected the fault.

END OF TASK

802. Autoslat Valve Circuit Open - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81003 A/S vlv ckt open (SMYD 1)

(b) 27-82003 A/S vlv ckt open (SMYD 2)

(2) The autoslat valve circuit is open.

(3) The stall warning test failed.

(4) The AUTOSLAT FAIL light is on.

B. Possible Causes

(1) Wiring problem

(2) Autoslat valve, V132

(3) Stall management yaw damper (SMYD), M1747 (SMYD 1) or M1748 (SMYD 2)

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

D. Related Data

(1) (Figure 301, Figure 302)

(2) (SSM 27-83-11)

(3) (SSM 27-83-21)

(4) (WDM 27-83-11)

(5) (WDM 27-83-21)

E. Initial Evaluation

(1) Do the EXISTING FAULTS test for the SMYD. To do the test, do this task: Stall Management Yaw Damper (SMYD) BITE Test - Ground Test, AMM TASK 27-32-00-740-803.

(a) If the maintenance message does not show, then there was an intermittent fault.

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the wiring inside the autoslat valve solenoid.

(a) Open this access panel:

Number	Name/Location
192BR	ECS Ram Air Inlet Mixing Duct Panel - Forward

(b) Remove the electrical connector from the autoslat valve solenoid:

1) For fault 27-81003, remove connector D3188.

2) For fault 27-82003, remove connector D3190.

(c) Examine the connectors for damage and unwanted material.

(d) Make sure the resistance between pins 1 and 2 of the solenoid is less than 100 ohms.

(e) If the resistance is greater than 100 ohms, then do these steps:

1) Replace the autoslat control valve. These are the tasks:
- Autoslat Control Valve Removal, AMM TASK 27-83-21-000-801
- Autoslat Control Valve Installation, AMM TASK 27-83-21-400-801

2) Do the EXISTING FAULTS test on the SMYD. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

(f) If the resistance is less than 100 ohms, then continue.

(2) Do this wiring check between the SMYD connector and the autoslat valve solenoid:

(a) Remove the SMYD. To remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801.

(b) Examine the connector pins and sockets for damage and unwanted material.

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(c) For maintenance message 27-81003 (SMYD 1), measure the resistance between pin 5 on the connector D3683A and structure ground.

(d) For maintenance message 27-82003 (SMYD 2), measure the resistance between pin 5 on the connector D3685A and structure ground.

(e) If the resistance is greater than 100 ohms, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Do the EXISTING FAULTS test on the SMYD. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

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

(f) If the resistance is greater than 100 ohms, then continue.

(3) For fault 27-81003, replace the number 1 SMYD. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(a) Make sure you do the test at the end of the installation procedure.

(b) If the test operates correctly, then you corrected the fault.

(4) For fault 27-82003, replace the number 2 SMYD. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(a) Make sure you do the test at the end of the installation procedure.

(b) If the test operates correctly, then you corrected the fault.

———————— END OF TASK ————————

803. SMYD Autoslat Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81004 A/S flt tst fail (SMYD 1)

(b) 27-82004 A/S flt tst fail (SMYD 2)

(2) The AUTOSLAT light comes on.

(3) The stall warning test will fail, if the fault is present.

B. Possible Causes

(1) Stall management yaw damper (SMYD), M1747 (SMYD 1) or M1748 (SMYD 2)

C. Circuit Breakers

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT

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F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	6	C01393	STICK SHAKER RIGHT

D. Related Data

(1) (Figure 301)

(2) (SSM 27-32-21)

(3) (SSM 27-32-11)

(4) (WDM 27-32-11)

(5) (WDM 27-32-21)

E. Initial Evaluation

(1) Do the EXISTING FAULTS test on the SMYD. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) If the maintenance message does not show, then there was an intermittent fault.

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) For fault 27-81004, replace the number 1 SMYD. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(a) Make sure you do the test at the end of the installation procedure.

(b) If the test operates correctly, then you corrected the fault.

(2) For fault 27-82004, replace the number 2 SMYD. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
- Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801

(a) Make sure you do the test at the end of the installation procedure.

(b) If the test operates correctly, then you corrected the fault.

———————— END OF TASK ————————

806. FSEU Autoslat Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81281 AUTOSLAT INPUT 1

(b) 27-81282 AUTOSLAT INPUT 2

(c) 27-83350 AUTOSLAT

(2) Separate autolat commands are received from each SMYD. These inputs are monitored to determine if there is an uncommanded autoslat signal.

B. Possible Causes

(1) Stall management yaw damper (SMYD), M1747 (SMYD 1) or M1748 (SMYD 2)

(2) Wiring

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	14	C01070	FLIGHT CONTROL AUTOSLAT DC 2
C	14	C01068	FLIGHT CONTROL AUTOSLAT DC 1

D. Related Data

(1) (Figure 301)

(2) (SSM 27-81-31)

(3) (SSM 27-83-11)

(4) (WDM 27-81-31)

(5) (WDM 27-83-11)

E. Initial Evaluation

(1) Do the EXISTING FAULTS test on the FSEU. Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(a) If the maintenance message does not show, then there was an intermittent fault.

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do the EXISTING FAULTS test on the SMYD. Do this task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

(a) For maintenance message 27-81281, do the test on SMYD 1.

(b) For maintenance message 27-81282, do the test on SMYD 2.

(c) For maintenance message 27-83350, do the test on both SMYD.

(d) If any maintenance messages related to AUTOSLAT show, then do the fault isolation procedure associated with the maintenance message.

(e) If no maintenance messages related to AUTOSLAT show, then continue.

(2) For maintenance message 27-81281 or 27-83350, do this wiring test between the SMYD 1 and the FSEU.

(a) Remove the FSEU. To remove the FSEU, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Remove the SMYD 1. To the remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(c) Examine the connector pins and sockets for damage and unwanted material.

(d) Do a wiring check between these pins of connector D728B at the FSEU and connector D3683A at SMYD 1:

D728B		**D3683A**
pin A1	- - - - - - - - - - - - - - - - - -	pin 50

(e) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

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2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the FSEU. To install the FSEU, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do the EXISTING FAULTS test on the FSEU. Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(f) If you did not find any wiring problems, then continue.

(3) For maintenance message 27-81282 or 27-83350, do this wiring test between the SMYD 2 and FSEU.

(a) Remove the FSEU. To remove the FSEU, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Remove the SMYD 2. To the remove the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

(c) Examine the connector pins and sockets for damage and unwanted material.

(d) Do a wiring check between these pins of connector D728B at the FSEU and connector D3685A at SMYD 2:

D728B		D3685A
pin F3	- - - - - - - - - - - - - - - - - -	pin 50

(e) If you find any wiring problems, then do these steps:

1) Repair the wiring.

2) Re-install the SMYD. To install the SMYD, do this task: Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801.

3) Re-install the FSEU. To install the FSEU, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do the EXISTING FAULTS test on the FSEU. Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

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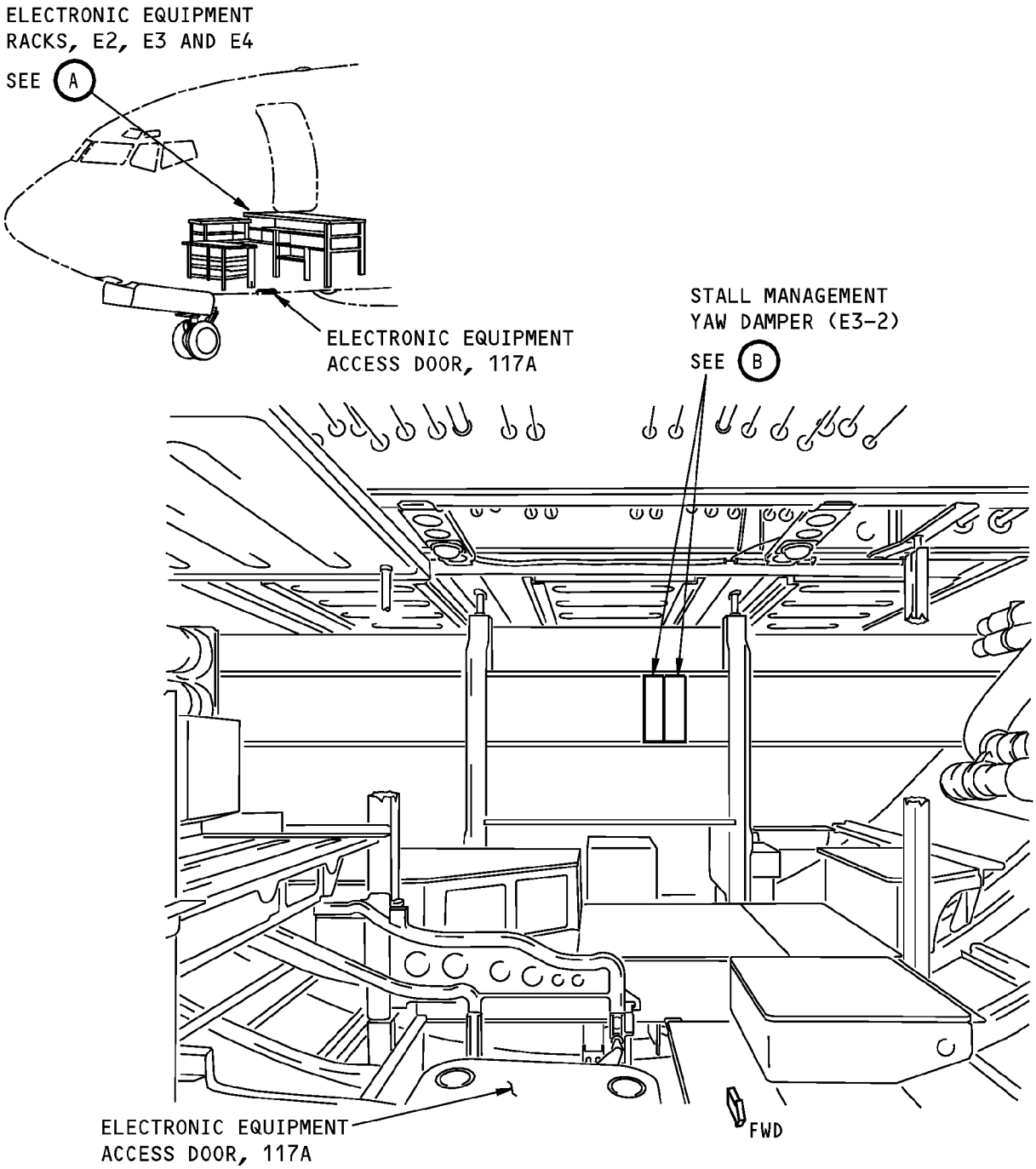

Stall Management Yaw Damper (SMYD) Component Location
Figure 301 (Sheet 1 of 2)/ 27-83-00-990-804

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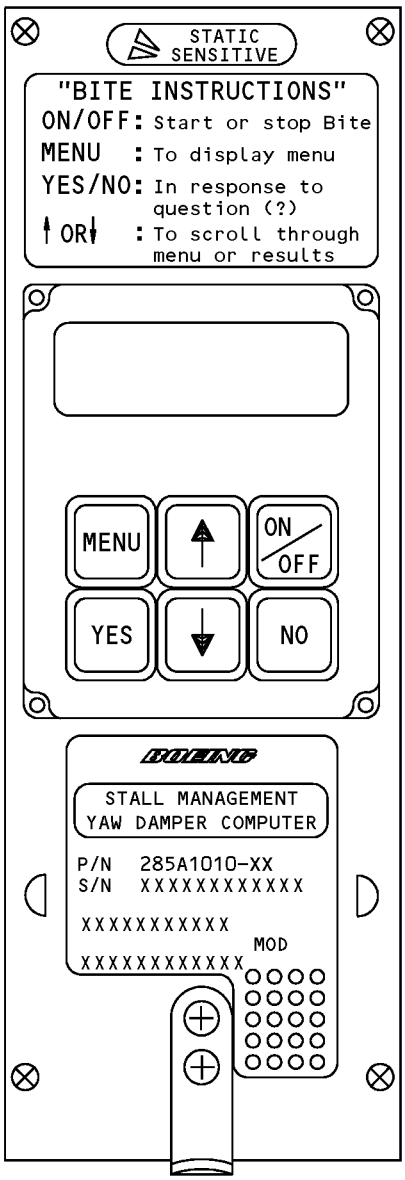

STALL MANAGEMENT YAW DAMPER
(EXAMPLE)

B

Stall Management Yaw Damper (SMYD) Component Location
Figure 301 (Sheet 2 of 2)/ 27-83-00-990-804

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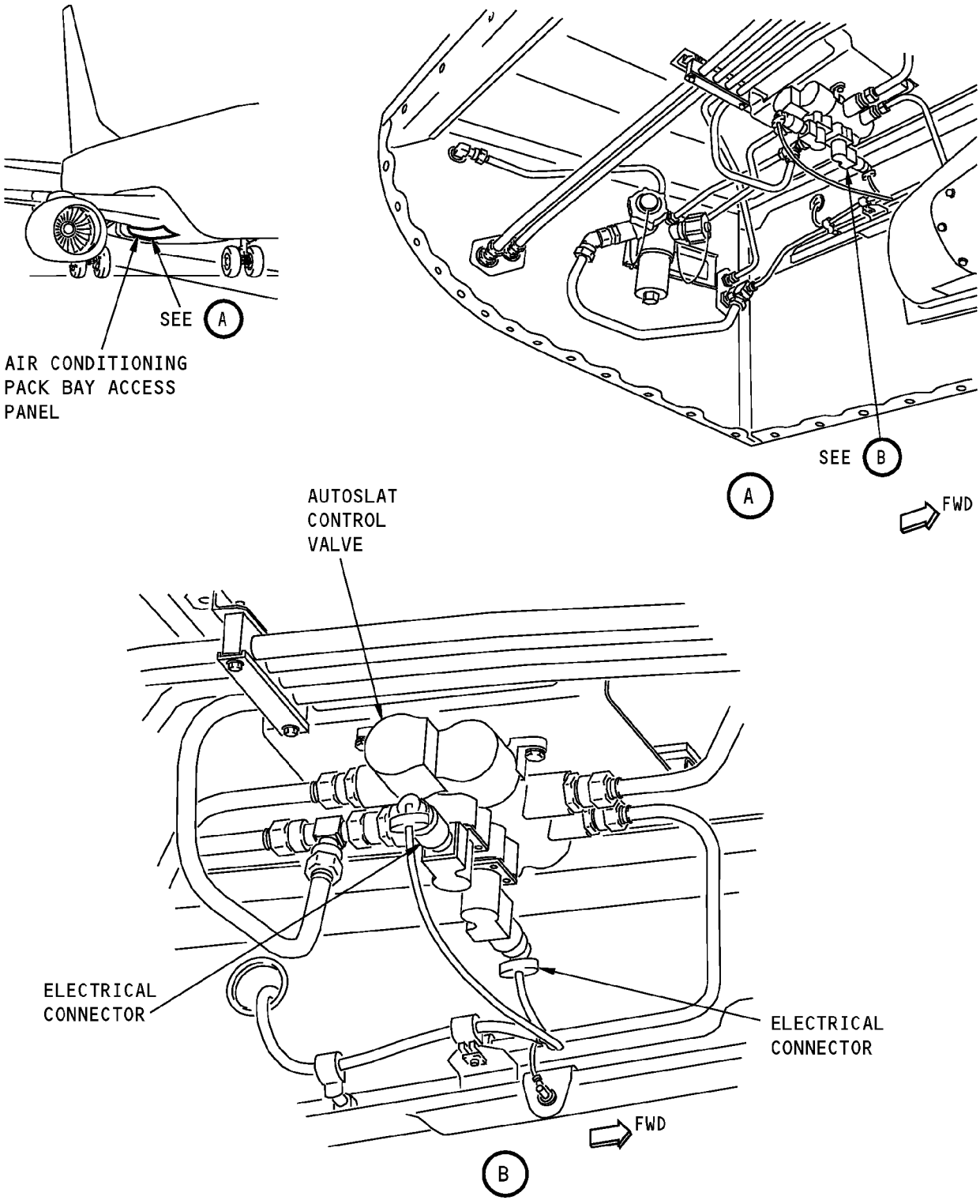

Autoslat Control Valve Component Location
Figure 302 / 27-83-00-990-805

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801. FSEU Proximity Sensor Fault - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51105 FSEU FAILED

(2) There is an internal FSEU fault in reading one or more of the leading edge proximity sensors.

(3) When this maintenance message shows, there should be another message for a specific proximity sensor. This task should be performed before the fault isolation task for the other maintenance message.

B. Possible Causes

(1) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Replace the FSEU, M1746. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(2) Use the primary system to fully extend and retract the leading edge flaps and slats. To extend and retract them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

802. FSEU Retract Sensor Fault - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-51110 FSEU FAILED

(2) The FSEU retract sensor internal excitation source is invalid.

B. Possible Causes

(1) FSEU, M1746

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C. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

(1) Replace the FSEU, M1746. These are the tasks:
- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

803. Slat Outboard Proximity Sensor Disagree Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81200 SL1 PROX OUTBOARD

(b) 27-81202 SL2 PROX OUTBOARD

(c) 27-81204 SL3 PROX OUTBOARD

(d) 27-81206 SL4 PROX OUTBOARD

(e) 27-81208 SL5 PROX OUTBOARD

(f) 27-81210 SL6 PROX OUTBOARD

(g) 27-81212 SL7 PROX OUTBOARD

(h) 27-81214 SL8 PROX OUTBOARD

(i) 27-81224 MULTIPLE PROX Multiple Proximity Sensors Disagree Problem - Fault Isolation, 27-88 TASK 807

(2) The signal from one of the leading edge (LE) slat outboard sensors disagrees with the signals from the other LE slat outboard sensors.

B. Possible Causes

(1) LE slat outboard sensor, S994, S996, S998, S1000, S1002, S1004, S1006 or S1008

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

(1) (SSM 27-81-12)

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(2) (SSM 27-81-22)

(3) (WDM 27-81-12)

(4) (WDM 27-81-22)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-51105 FSEU FAILED shows, then do this task: FSEU Proximity Sensor Fault - Fault Isolation, 27-88 TASK 801.

(3) If the maintenance message does not show, then there was an intermittent fault.

(4) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the inputs to the FSEU from the proximity sensors at different slat positions:

(a) Make sure the leading edge flaps and slats are in the retracted position.

(b) Use the FSEU to find the state of the applicable proximity sensors:

NOTE: The state of the proximity sensors will be GAP NEAR, GAP FAR, or MARGINAL.

1) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?.

2) Push the NO button until OTHER FUNCTNS? shows on the display.

3) Push the YES button to select OTHER FUNCTNS? on the FSEU.

4) Push the NO button until I/O MONITOR? shows on the display.

5) Push the YES button to select I/O MONITOR? on the FSEU.

6) Push the YES button to select PROX SENSORS? on the FSEU.

7) Push the down arrow to scroll through the PROX SENSORS on the display.

NOTE: Line 1 on the display shows the proximity sensor name. Line 2 on the display shows the state of the proximity sensor.

(c) Record the state of the applicable proximity sensor with the slats retracted.

NOTE: Sensors S1 OUTBD and S8 OUTBD should be GAP NEAR. Sensors S2 OUTBD through S7 OUTBD should be GAP FAR.

(d) Use the primary system to move the leading edge slats to the extended position. To move the slats, do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.

(e) Use the FSEU to find the state of the applicable proximity sensors again.

(f) Record the state of the applicable proximity sensor with the slats extended.

NOTE: Sensors S1 OUTBD through S8 OUTBD should be GAP FAR.

(g) Use the primary system to move the leading edge slats to the fully extended position. To move the slats, do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.

(h) Use the FSEU to find the state of the applicable proximity sensors again.

(i) Record the state of the applicable proximity sensor with the slats fully extended.

NOTE: Sensors S1 OUTBD through S8 OUTBD should be GAP NEAR.

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(2) If the state of the proximity sensor was MARGINAL when it should have been GAP NEAR or GAP FAR, then adjust the clearance between the proximity sensor and the target. To adjust the clearance, do this task: Leading Edge Slat Proximity Sensor Installation, AMM TASK 27-88-11-400-801.

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

(3) If the state of the proximity sensor was GAP FAR when it should have been GAP NEAR, then do this check of the operation of the applicable proximity sensor:

(a) Use the primary system to move the leading edge slats to the extended position. To move the leading edge slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(b) Deactivate the leading edge slats. To deactivate them, do this task: Deactivate the Leading Edge Flaps and Slats, AMM TASK 27-81-00-040-801.

(c) Do a visual inspection of the proximity sensor and the target.

1) If there is any damage, or a sign of contact between the proximity sensor and target, then repair the damage.

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

(d) Put a piece of steel near the proximity sensor to simulate a target.

NOTE: You can use a steel ruler to simulate the target.

(e) Use the FSEU to find the state of the proximity sensor.

(f) If the state of the proximity sensor is GAP NEAR, then adjust the clearance between the proximity sensor and the target. To adjust the clearance, do this task: Leading Edge Slat Proximity Sensor Installation, AMM TASK 27-88-11-400-801.

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

(g) If the state of the proximity sensor is GAP FAR, then continue.

(h) Remove the piece of steel from the sensor.

(i) Use the primary system to retract the leading edge slats to the fully retracted position. To retract the leading edge slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(4) Do this check of the proximity sensor and the wiring to the FSEU:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between the pins of the FSEU connector D278A for the red terminal and the structure ground (yellow) (Table 201).

1) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

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2) The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 ohms.

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

(c) Measure the resistance between the pins of the FSEU connector D278A for the blue terminal and the structure ground (yellow) Table 201)

1) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

2) The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 ohms.

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

Table 201 PROXIMITY SENSOR RESISTANCES

PROXIMITY SENSOR	MAINTENANCE MESSAGE #	BLUE TERMINAL D728A		RED TERMINAL D728A
SLAT #1	27-81200	pin J4	–	pin K4
SLAT #2	27-81202	pin J6	–	pin K6
SLAT #3	27-81204	pin J8	–	pin K8
SLAT #4	27-81206	pin J10	–	pin K10
SLAT #5	27-81208	pin G10	–	pin H10
SLAT #6	27-81210	pin G8	–	pin H8
SLAT #7	27-81212	pin G6	–	pin H6
SLAT #8	27-81214	pin G4	–	pin H4

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(d) Reconnect the connector D728A to the FSEU.

(e) If the resistance values are out of tolerance, then cut the wires at the sensor splices and recheck the resistance of the sensor.

(f) If the resistance values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (SWPM 20-20-00).

1) make sure the resistance is less than 0.001 ohm.

2) If the resistance is greater than 0.001 ohm, then inspect and repair the ground between the sensor connection and the structure ground.

3) If you do not find a problem with the sensor ground, then continue.

(g) If the resistance values are out of tolerance and there are no problems with the sensor ground, then replace the sensor. These are the tasks:

- Leading Edge Slat Proximity Sensor Removal, AMM TASK 27-88-11-000-801
- Leading Edge Slat Proximity Sensor Installation, AMM TASK 27-88-11-400-801

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

(h) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground, then you have determined that the wiring is faulty. Do the wiring check between the connections on the sensor wiring and the FSEU D728A connector using the Table 201. Repair the damaged wiring that you find.

(i) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

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

(k) If none of the resistances agree, then do these steps:

1) Replace the applicable proximity sensor. These are the tasks:

- Leading Edge Slat Proximity Sensor Removal, AMM TASK 27-88-11-000-801
- Leading Edge Slat Proximity Sensor Installation, AMM TASK 27-88-11-400-801

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

(l) If all of the resistances agree, then do these steps:

1) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

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

G. Fault Confirmation

(1) Use the primary system to fully extend and retract the leading edge flaps and slats. To extend and retract them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

804. Slat Inboard Proximity Sensor Disagree Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81201 SL1 PROX INBOARD

(b) 27-81203 SL2 PROX INBOARD

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(c) 27-81205 SL3 PROX INBOARD

(d) 27-81207 SL4 PROX INBOARD

(e) 27-81209 SL5 PROX INBOARD

(f) 27-81211 SL6 PROX INBOARD

(g) 27-81213 SL7 PROX INBOARD

(h) 27-81215 SL8 PROX INBOARD

(i) 27-81224 MULTIPLE PROX Multiple Proximity Sensors Disagree Problem - Fault Isolation, 27-88 TASK 807

(2) The signal from one of the leading edge (LE) slat inboard sensors disagrees with the signals from the other LE slat inboard sensors.

B. Possible Causes

(1) LE slat inboard sensor, S995, S997, S999, S1001, S1003, S1005, S1007 or S1009

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

(1) (SSM 27-81-12)

(2) (SSM 27-81-22)

(3) (WDM 27-81-12)

(4) (WDM 27-81-22)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-51105 FSEU FAILED shows, then, do this task: FSEU Proximity Sensor Fault - Fault Isolation, 27-88 TASK 801.

(3) If the maintenance message does not show, then there was an intermittent fault.

(4) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the inputs to the FSEU from the proximity sensors at different slat positions:

(a) Make sure the leading edge flaps and slats are in the retracted position.

(b) Use the FSEU to find the state of the applicable proximity sensors:

NOTE: The state of the proximity sensors will be GAP NEAR, GAP FAR, or MARGINAL.

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1) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?.

2) Push the NO button until OTHER FUNCTNS? shows on the display.
3) Push the YES button to select OTHER FUNCTNS? on the FSEU.
4) Push the NO button until I/O MONITOR? shows on the display.
5) Push the YES button to select I/O MONITOR? on the FSEU.
6) Push the YES button to select PROX SENSORS? on the FSEU.
7) Push the down arrow to scroll through the PROX SENSORS on the display.

NOTE: Line 1 on the display shows the proximity sensor name. Line 2 on the display shows the state of the proximity sensor.

(c) Record the state of the applicable proximity sensor with the slats retracted.

NOTE: Sensors S1 INBD and S8 INBD should be GAP NEAR. Sensors S2 INBD through S7 INBD should be GAP FAR.

(d) Use the primary system to move the leading edge slats to the extended position. To move the slats, do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.

(e) Use the FSEU to find the state of the applicable proximity sensors again.

(f) Record the state of the applicable proximity sensor with the slats extended.

NOTE: Sensors S1 INBD through S8 INBD should be GAP NEAR.

(g) Use the primary system to move the leading edge slats to the fully extended position. To move the slats, do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.

(h) Use the FSEU to find the state of the applicable proximity sensors again.

(i) Record the state of the applicable proximity sensor with the slats fully extended.

NOTE: Sensors S1 INBD through S8 INBD should be GAP FAR.

(2) If the state of the proximity sensor was MARGINAL when it should have been GAP NEAR or GAP FAR, then adjust the clearance between the proximity sensor and the target. To adjust the clearance, do this task: Leading Edge Slat Proximity Sensor Installation, AMM TASK 27-88-11-400-801.

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

(3) If the state of the proximity sensor was GAP FAR when it should have been GAP NEAR, then do this check of the operation of the applicable proximity sensor:

(a) Use the primary system to move the leading edge slats to the fully extended position. To move the leading edge slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(b) Deactivate the leading edge slats. To deactivate them, do this task: Deactivate the Leading Edge Flaps and Slats, AMM TASK 27-81-00-040-801.

(c) Do a visual inspection of the proximity sensor and the target.

1) If there is any damage, or a sign of contact between the proximity sensor and target, then repair the damage.

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

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(d) Put a piece of steel near the proximity sensor to simulate a target.

NOTE: You can use a steel ruler to simulate the target.

(e) Use the FSEU to find the state of the proximity sensor.

(f) If the state of the proximity sensor is GAP NEAR, then adjust the clearance between the proximity sensor and the target. To adjust the clearance, do this task: Leading Edge Slat Proximity Sensor Installation, AMM TASK 27-88-11-400-801.

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

(g) If the state of the proximity sensor is GAP FAR, then continue.

(h) Remove the piece of steel from the sensor.

(i) Use the primary system to retract the leading edge slats to the fully retracted position. To retract the leading edge slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(4) Do this check of the proximity sensor and the wiring to the FSEU:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between the pins for the red terminal of the FSEU connector, D728A and structure ground (yellow) Table 202.

1) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

2) The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 ohms.

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

(c) Measure the resistance between the pins for the blue terminal of the FSEU connector, D728A and structure ground (yellow) Table 202.

1) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

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2) The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 ohms.

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

Table 202 PROXIMITY SENSOR RESISTANCE

PROXIMITY SENSOR	MAINTENANCE MESSAGE #	BLUE TERMINAL D728A		RED TERMINAL D728A
SLAT #1	27-81201	pin J5	–	pin K5
SLAT #2	27-81203	pin J7	–	pin K7
SLAT #3	27-81205	pin J9	–	pin K9
SLAT #4	27-81207	pin J11	–	pin K11
SLAT #5	27-81209	pin G11	–	pin H11
SLAT #6	27-81211	pin G9	–	pin H9
SLAT #7	27-81213	pin G7	–	pin H7
SLAT #8	27-81215	pin G5	–	pin H5

(d) Reconnect the connector D728A to the FSEU.

(e) If the resistance values are out of tolerance, then cut the wires at the sensor splices and recheck the resistance of the sensor.

(f) If the resistance values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (SWPM 20-20-00).

1) make sure the resistance is less than 0.001 ohm.

2) If the resistance is greater than 0.001 ohm, then inspect and repair the ground between the sensor connection and the structure ground.

3) If you do not find a problem with the sensor ground, then continue.

(g) If the resistance values are out of tolerance and there are no problems with the sensor ground, then replace the sensor. These are the tasks:

- Leading Edge Slat Proximity Sensor Removal, AMM TASK 27-88-11-000-801
- Leading Edge Slat Proximity Sensor Installation, AMM TASK 27-88-11-400-801

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

(h) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground, then you have determined that the wiring is faulty. Do the wiring check between the connections on the sensor wiring and the FSEU D728A connector using the Table 202. Repair the damaged wiring that you find.

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(i) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

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

(k) If none of the resistances agree, then do these steps:

1) Replace the applicable proximity sensor. These are the tasks:
- Leading Edge Slat Proximity Sensor Removal, AMM TASK 27-88-11-000-801
- Leading Edge Slat Proximity Sensor Installation, AMM TASK 27-88-11-400-801

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

(l) If all of the resistances agree, then do these steps:

1) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

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

G. Fault Confirmation

(1) Use the primary system to fully extend and retract the leading edge flaps and slats. To extend and retract them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

805. Flap Retract Proximity Sensor Disagree Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81216 F1 PROX RETRACT

(b) 27-81218 F2 PROX RETRACT

(c) 27-81220 F3 PROX RETRACT

(d) 27-81222 F4 PROX RETRACT

(e) 27-81224 MULTIPLE PROX Multiple Proximity Sensors Disagree Problem - Fault Isolation, 27-88 TASK 807

(2) The signal from one of the leading edge (LE) flap retract proximity sensors disagrees with the signals from the other LE flap retract proximity sensors.

B. Possible Causes

(1) LE flap retract sensor, S168, S170, S172 or S174

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1

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Row	Col	Number	Name
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

(1) (SSM 27-81-11)

(2) (SSM 27-81-21)

(3) (WDM 27-81-11)

(4) (WDM 27-81-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-51105 FSEU FAILED shows, then do this task: FSEU Proximity Sensor Fault - Fault Isolation, 27-88 TASK 801.

(3) If the maintenance message does not show, then there was an intermittent fault.

(4) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the inputs to the FSEU from the proximity sensors at different leading edge flap positions:

(a) Make sure the leading edge flaps and slats are in the retracted position.

(b) Use the FSEU to find the state of the applicable proximity sensors:

NOTE: The state of the proximity sensors will be GAP NEAR, GAP FAR, or MARGINAL.

1) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?.

2) Push the NO button until OTHER FUNCTNS? shows on the display.

3) Push the YES button to select OTHER FUNCTNS? on the FSEU.

4) Push the NO button until I/O MONITOR? shows on the display.

5) Push the YES button to select I/O MONITOR? on the FSEU.

6) Push the YES button to select PROX SENSORS? on the FSEU.

7) Push the down arrow to scroll through the PROX SENSORS on the display.

NOTE: Line 1 on the display shows the proximity sensor name. Line 2 on the display shows the state of the proximity sensor.

(c) Record the state of the applicable proximity sensor with the slats retracted.

NOTE: Sensors F1 RETR through F4 RETR should be GAP NEAR.

(d) Use the primary system to move the leading edge flaps to the extended position. To move the slats, do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.

(e) Use the FSEU to find the state of the applicable proximity sensors again.

(f) Record the state of the applicable proximity sensor with the slats extended.

NOTE: Sensors F1 RETR through F4 RETR should be GAP FAR.

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(2) If the state of the proximity sensor was MARGINAL when it should have been GAP NEAR or GAP FAR, then adjust the clearance between the proximity sensor and the target. To adjust the clearance, do this task: Leading Edge Flap Proximity Sensor Installation, AMM TASK 27-88-11-400-802.

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

(3) If the state of the proximity sensor was GAP FAR when it should have been GAP NEAR, then do this check of the operation of the applicable proximity sensor:

(a) Use the primary system to move the leading edge slats to the extended position. To move the leading edge slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(b) Deactivate the leading edge slats. To deactivate them, do this task: Deactivate the Leading Edge Flaps and Slats, AMM TASK 27-81-00-040-801.

(c) Do a visual inspection of the proximity sensor and the target.

1) If there is any damage, or a sign of contact between the proximity sensor and target, then repair the damage.

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

(d) Put a piece of steel near the proximity sensor to simulate a target.

NOTE: You can use a steel ruler to simulate the target.

(e) Use the FSEU to find the state of the proximity sensor.

(f) If the state of the proximity sensor is GAP NEAR, then adjust the clearance between the proximity sensor and the target. To adjust the clearance, do this task: Leading Edge Flap Proximity Sensor Installation, AMM TASK 27-88-11-400-802.

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

(g) If the state of the proximity sensor is GAP FAR, then continue.

(h) Remove the piece of steel from the sensor.

(i) Use the primary system to retract the leading edge slats to the fully retracted position. To retract the leading edge slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(4) Do this check of the proximity sensor and the wiring to the FSEU:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between the FSEU connector D728A pins for the red terminal and structure ground (yellow) (Table 203).

1) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

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2) The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 ohms.

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

(c) Measure the resistance between the FSEU connector D728A pins for the blue terminal and structure ground (yellow) (Table 201).

1) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

2) The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 ohms.

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

Table 203 Proximity Sensor

PROXIMITY SENSOR	MAINTENANCE MESSAGE #	BLUE TERMINAL D728A		RED TERMINAL D728A
FLAP #1	27-81216	pin J12	–	pin K12
FLAP #2	27-81218	pin J14	–	pin K14
FLAP #3	27-81220	pin G14	–	pin H14
FLAP #4	27-81222	pin G12	–	pin H12

(d) Reconnect connector D728A to the FSEU.

(e) If the resistance values are out of tolerance, then cut the wires at the sensor splices and recheck the resistance of the sensors.

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(f) If the resistance values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (SWPM 20-20-00).

1) make sure the resistance is less than 0.001 ohm.

2) If the resistance is greater than 0.001 ohm, then inspect and repair the ground between the sensor connection and the structure ground.

3) If you do not find a problem with the sensor ground, then continue.

(g) If the resistance values are out of tolerance and there are no problems with the sensor ground, then replace the sensor. These are the tasks:

- AMM TASK 27-88-11-000-802
- AMM TASK 27-88-11-400-802

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

(h) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground, then you have determined that the wiring is faulty. Do the wiring check between the connections on the sensor wiring and the FSEU D728A connector using the Table 203. Repair the damaged wiring that you find.

(i) Re-install the FSEU, M1746. To install it, do this task: AMM TASK 27-51-01-400-801

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

(k) If none of the resistances agree, then do these steps:

1) Replace the applicable proximity sensor. These are the tasks:

- Leading Edge Flap Proximity Sensor Removal, AMM TASK 27-88-11-000-802
- Leading Edge Flap Proximity Sensor Installation, AMM TASK 27-88-11-400-802

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

(l) If all of the resistances agree, then do these steps:

1) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

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

G. Fault Confirmation

(1) Use the primary system to fully extend and retract the leading edge flaps and slats. To extend and retract them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

806. Flap Extend Proximity Sensor Disagree Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81217 F1 PROX EXTEND

(b) 27-81219 F2 PROX EXTEND

(c) 27-81221 F3 PROX EXTEND

(d) 27-81223 F4 PROX EXTEND

(e) 27-81224 MULTIPLE PROX Multiple Proximity Sensors Disagree Problem - Fault Isolation, 27-88 TASK 807

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(2) The signal from one of the leading edge (LE) flap extend proximity sensors disagrees with the signals from the other LE flap extend proximity sensors.

B. Possible Causes

(1) LE flap extend sensors, S169, S171, S173 or S175

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

(1) (SSM 27-81-11)

(2) (SSM 27-81-21)

(3) (WDM 27-81-11)

(4) (WDM 27-81-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message 27-51105 FSEU FAILED shows, then do this task: FSEU Proximity Sensor Fault - Fault Isolation, 27-88 TASK 801.

(3) If the maintenance message does not show, then there was an intermittent fault.

(4) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the inputs to the FSEU from the proximity sensors at different leading edge flap positions:

(a) Make sure the leading edge flaps and slats are in the retracted position.

(b) Use the FSEU to find the state of the applicable proximity sensors:

NOTE: The state of the proximity sensors will be GAP NEAR, GAP FAR, or MARGINAL.

1) Push the ON/OFF button on the front panel of the FSEU to turn on the display.

NOTE: The display will show EXISTING FAULTS?.

2) Push the NO button until OTHER FUNCTNS? shows on the display.

3) Push the YES button to select OTHER FUNCTNS? on the FSEU.

4) Push the NO button until I/O MONITOR? shows on the display.

5) Push the YES button to select I/O MONITOR? on the FSEU.

6) Push the YES button to select PROX SENSORS? on the FSEU.

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7) Push the down arrow to scroll through the PROX SENSORS on the display.

NOTE: Line 1 on the display shows the proximity sensor name. Line 2 on the display shows the state of the proximity sensor.

(c) Record the state of the applicable proximity sensor with the slats retracted.

NOTE: Sensors F1 EXT through F4 EXT should be GAP FAR.

(d) Use the primary system to move the leading edge flaps to the extended position. To move the slats, do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.

(e) Use the FSEU to find the state of the applicable proximity sensors again.

(f) Record the state of the applicable proximity sensor with the slats extended.

NOTE: Sensors F1 EXT through F4 EXT should be GAP NEAR.

(2) If the state of the proximity sensor was MARGINAL when it should have been GAP NEAR or GAP FAR, then adjust the clearance between the proximity sensor and the target. To adjust the clearance, do this task: Leading Edge Flap Proximity Sensor Installation, AMM TASK 27-88-11-400-802.

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

(3) If the state of the proximity sensor was GAP FAR when it should have been GAP NEAR, then do this check of the operation of the applicable proximity sensor:

(a) Use the primary system to move the leading edge slats to the extended position. To move the leading edge slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(b) Deactivate the leading edge slats. To deactivate them, do this task: Deactivate the Leading Edge Flaps and Slats, AMM TASK 27-81-00-040-801.

(c) Do a visual inspection of the proximity sensor and the target.

1) If there is any damage, or a sign of contact between the proximity sensor and target, then repair the damage.

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

(d) Put a piece of steel near the proximity sensor to simulate a target.

NOTE: You can use a steel ruler to simulate the target.

(e) Use the FSEU to find the state of the proximity sensor.

(f) If the state of the proximity sensor is GAP NEAR, then adjust the clearance between the proximity sensor and the target. To adjust the clearance, do this task: Leading Edge Flap Proximity Sensor Installation, AMM TASK 27-88-11-400-802.

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

(g) If the state of the proximity sensor is GAP FAR, then continue.

(h) Remove the piece of steel from the sensor.

(i) Use the primary system to retract the leading edge slats to the fully retracted position. To retract the leading edge slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(4) Do this check of the proximity sensor and the wiring to the FSEU:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

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(b) Measure the resistance between the pins of the FSEU connector D728A for the red terminal and structure ground (yellow) (Table 204).

1) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

2) The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 ohms.

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

(c) Measure the resistance between the pins for the blue terminal of the FSEU connector, D728A and structure ground (yellow) Table 201

1) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

2) The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 ohms.

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

Table 204 PROXIMITY SENSOR MAINTENANCE MESSAGE

PROXIMITY SENSOR	MAINTENANCE MESSAGE #	BLUE TERMINAL D728A		RED TERMINAL D728A
FLAP #1	27-81217	pin J13	–	pin K13
FLAP #2	27-81219	pin J15	–	pin K15
FLAP #3	27-81221	pin G15	–	pin H15

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(Continued)

PROXIMITY SENSOR	MAINTENANCE MESSAGE #	BLUE TERMINAL D728A		RED TERMINAL D728A
FLAP #4	27-81223	pin G13	–	pin H13

(d) Reconnect connector D728A to the FSEU.

(e) If the resistance values are out of tolerance, then cut the wires at the sensor splices and recheck the resistance of the sensors.

(f) If the resistance values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (SWPM 20-20-00).

1) make sure the resistance is less than 0.001 ohm.

2) If the resistance is greater than 0.001 ohm, then inspect and repair the ground between the sensor connection and the structure ground.

3) If you do not find a problem with the sensor ground, then continue.

(g) If the resistance values are out of tolerance and there are no problems with the sensor ground, then replace the sensor. These are the tasks:

- Leading Edge Flap Proximity Sensor Removal, AMM TASK 27-88-11-000-802
- Leading Edge Flap Proximity Sensor Installation, AMM TASK 27-88-11-400-802

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

(h) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground, then you have determined that the wiring is faulty. Do the wiring check between the connections on the sensor wiring and the FSEU D728A connector using the Table 203. Repair the damaged wiring that you find.

(i) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

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

(k) If none of the resistances agree, then do these steps:

1) Replace the applicable proximity sensor. These are the tasks:

- Leading Edge Flap Proximity Sensor Removal, AMM TASK 27-88-11-000-802
- Leading Edge Flap Proximity Sensor Installation, AMM TASK 27-88-11-400-802

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

(l) If all of the resistances agree, then do these steps:

1) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

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

G. Fault Confirmation

(1) Use the primary system to fully extend and retract the leading edge flaps and slats. To extend and retract them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

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807. Multiple Proximity Sensors Disagree Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-81224 MULTIPLE PROX

(2) The signals from the leading edge proximity sensors disagree with each other.

B. Possible Causes

(1) LE flap and slat proximity sensors

(2) FSEU, M1746

(3) Wiring problem

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

(1) (SSM 27-81-11)

(2) (SSM 27-81-12)

(3) (SSM 27-81-21)

(4) (SSM 27-81-22)

(5) (WDM 27-81-11)

(6) (WDM 27-81-12)

(7) (WDM 27-81-21)

(8) (WDM 27-81-22)

E. Fault Isolation Procedure

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the one or more of the LE UCM maintenance messages shows, then, do this task: Leading Edge Extend UCM Problem - Fault Isolation, 27-81 TASK 806.

(3) If the maintenance message shows, then do these fault isolation procedures:

(a) Do this task: Slat Outboard Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 803.

(b) Do this task: Flap Retract Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 805.

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

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WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) To pressurize hydraulic system B, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE PERSONS AND EQUIPMENT ARE CLEAR OF THE LEADING EDGE FLAPS AND SLATS AND THE TRAILING EDGE FLAPS. THE FLAPS AND SLATS WILL MOVE. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(6) Move the flap control lever to the 1-unit position to extend the leading edge flaps and slats.

(7) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(8) If the maintenance message shows, then do these fault isolation procedures:

(a) Do this task: Slat Inboard Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 804.

(b) Do this task: Flap Extend Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 806.

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

HAP 001-013, 015-026, 028-036, 101-999

(10) Move the flap control lever to the 10-unit position to fully extend the leading edge slats.

HAP 037-054

(11) Move the flap control lever to the 30-unit position to fully extend the leading edge slats.

HAP ALL

(12) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(13) If the maintenance message shows, then do this task: Slat Outboard Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 803.

(14) Move the flap control lever to the UP position to retract the leading edge flaps and slats.

(15) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(16) If the maintenance message shows, then do these fault isolation procedures:

(a) Do this task: Slat Outboard Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 803.

(b) Do this task: Flap Retract Proximity Sensor Disagree Problem - Fault Isolation, 27-88 TASK 805.

(17) If the maintenance message does not show, then there was an intermittent fault.

(18) Remove system B, hydraulic power. To remove it, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

——————— END OF TASK ———————

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808. Slat Retract Proximity Sensor Disagree Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81225 SL2 PROX RETRACT

(b) 27-81226 SL3 PROX RETRACT

(c) 27-81227 SL4 PROX RETRACT

(d) 27-81228 SL5 PROX RETRACT

(e) 27-81229 SL6 PROX RETRACT

(f) 27-81230 SL7 PROX RETRACT

(2) The signal from one of the leading edge (LE) slat retract proximity sensors disagrees with the signals from the other LE slat retract proximity sensors.

B. Possible Causes

(1) FSEU, M1746

(2) LE slat retract sensor, S1094, S1095, S1096, S1097, S1098, or S1099

(3) LE slat retract sensor target

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

(1) (SSM 27-81-12)

(2) (SSM 27-81-22)

(3) (WDM 27-81-12)

(4) (WDM 27-81-22)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If one of the maintenance messages SL# PROX RET FAIL shows, then, do this task: Slat Retract Proximity Sensor Fail - Fault Isolation, 27-88 TASK 809.

(3) If the maintenance message does not show, then there was an intermittent fault.

(4) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this wiring check:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

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(b) Measure the resistance between these pins of connector D728A at the E1-1 shelf for the applicable slat (WDM 27-81-12) (WDM 27-81-22):

Table 205

SLAT	D728A		D728A
SLAT #2	pin A14	–	pin A15
SLAT #3	pin B14	–	pin B15
SLAT #4	pin C14	–	pin C15
SLAT #5	pin D14	–	pin D15
SLAT #6	pin E14	–	pin E15
SLAT #7	pin F14	–	pin F15

(c) If the resistance measured is between 20 to 100 ohms, then do this step:

1) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(d) If the resistance measured is not in the limit of 20 to 100 ohms, then continue.

(2) Do this check of the wiring between the FSEU and the LE slat retract proximity sensor:

(a) Find the connector and the pair of pins for the applicable LE slat retract proximity sensor:

Table 206

SENSOR EQUIPMENT NUMBER	SENSOR CONNECTOR		FSEU CONNECTOR
SLAT #2 S1094	D10589		D728A
	pin 1	–	pin A14
	pin 2	–	pin A15
SLAT #3 S1095	D10591		D728A
	pin 1	–	pin B14
	pin 2	–	pin B15
SLAT #4 S1096	D10593		D728A
	pin 1	–	pin C14
	pin 2	–	pin C15
SLAT #5 S1097	D10595		D728A
	pin 1	–	pin D14
	pin 2	–	pin D15
SLAT #6 S1098	D10597		D728A
	pin 1	–	pin E14

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(Continued)

SENSOR EQUIPMENT NUMBER	SENSOR CONNECTOR		FSEU CONNECTOR
	pin 2	–	pin E15
SLAT #7 S1099	D10599		D728A
	pin 1	–	pin F14
	pin 2	–	pin F15

(b) Disconnect the connector from the applicable LE slat retract proximity sensor.

(c) Do a wiring check between the pins of connector D728A at the E1-1 shelf and the connector at the applicable LE slat retract proximity sensor.

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connectors to the applicable proximity sensor.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(3) Replace the applicable LE slat retract proximity sensor. These are the tasks:

- Leading Edge Slat Proximity Sensor Removal, AMM TASK 27-88-11-000-801
- Leading Edge Slat Proximity Sensor Installation, AMM TASK 27-88-11-400-801

(a) Use the primary system to retract the leading edge flaps and slats. To retract them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the maintenance message shows, then continue.

(c) If the maintenance message does not show, then use the primary system to extend the leading edge flaps and slats. To extend them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(4) Replace the FSEU, M1746. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Use the primary system to retract the leading edge flaps and slats. To retract them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

1) If the maintenance message shows, then continue.

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(c) If the maintenance message does not show, then use the primary system to extend the leading edge flaps and slats. To extend them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(5) Replace the applicable target for the LE slat retract proximity sensor.

(a) Use the primary system to retract the leading edge flaps and slats. To retract them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(c) Use the primary system to extend the leading edge flaps and slats. To extend them, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(d) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

809. Slat Retract Proximity Sensor Fail - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81231 SL2 PROX RET FAIL

(b) 27-81232 SL3 PROX RET FAIL

(c) 27-81233 SL4 PROX RET FAIL

(d) 27-81234 SL5 PROX RET FAIL

(e) 27-81235 SL6 PROX RET FAIL

(f) 27-81236 SL7 PROX RET FAIL

(2) The FSEU has detected either an open or short circuit with the slat 2, 3, 4, 5, 6 or 7 retract proximity sensor.

B. Possible Causes

(1) Wiring problem

(2) LE slat retract sensor, S1094, S1095, S1096, S1097, S1098, or S1099

(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

(1) (SSM 27-81-12)

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(2) (SSM 27-81-22)

(3) (WDM 27-81-12)

(4) (WDM 27-81-22)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this wiring check between the FSEU, M1746 and the retract sensor for the applicable slat:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the resistance between these pins of connector D728A at the E1-1 shelf for the applicable slat (WDM 27-81-12) (WDM 27-81-22):

Table 207

SLAT	D728A		D728A
SLAT #2	pin A14	–	pin A15
SLAT #3	pin B14	–	pin B15
SLAT #4	pin C14	–	pin C15
SLAT #5	pin D14	–	pin D15
SLAT #6	pin E14	–	pin E15
SLAT #7	pin F14	–	pin F15

(c) If the resistance measured is between 20 to 100 ohms, then do these steps:

1) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If the resistance measured is not in the limit of 20 to 100 ohms, then continue.

(2) Do this check of the wiring between the FSEU and the LE slat retract proximity sensor:

(a) Find the connector and the pair of pins for the applicable LE slat retract proximity sensor:

Table 208

SENSOR EQUIPMENT NUMBER	SENSOR CONNECTOR		FSEU CONNECTOR
SLAT #2	D10589		D728A
S1094	pin 1	–	pin A14
	pin 2	–	pin A15
SLAT #3	D10591		D728A
S1095	pin 1	–	pin B14

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(Continued)

SENSOR EQUIPMENT NUMBER	SENSOR CONNECTOR		FSEU CONNECTOR
	pin 2	–	pin B15
SLAT #4	D10593		D728A
S1096	pin 1	–	pin C14
	pin 2	–	pin C15
SLAT #5	D10595		D728A
S1097	pin 1	–	pin D14
	pin 2	–	pin D15
SLAT #6	D10597		D728A
S1098	pin 1	–	pin E14
	pin 2	–	pin E15
SLAT #7	D10599		D728A
S1099	pin 1	–	pin F14
	pin 2	–	pin F15

(b) Disconnect the connector from the applicable LE slat retract proximity sensor.

(c) Do a wiring check between the pins of connector D728A at the E1-1 shelf and the connector at the applicable LE slat retract proximity sensor.

(d) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect the connectors to the applicable proximity sensor.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If you do not find a problem with the wiring, then continue.

1) Re-install the FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(3) Replace the applicable LE slat retract proximity sensor. These are the tasks:

- Leading Edge Slat Proximity Sensor Removal, AMM TASK 27-88-11-000-801
- Leading Edge Slat Proximity Sensor Installation, AMM TASK 27-88-11-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

810. Slat Extend Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

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(a) 27-81301 SLAT 1 EXTEND

(b) 27-81304 SLAT 2 EXTEND

(c) 27-81307 SLAT 3 EXTEND

(d) 27-81310 SLAT 4 EXTEND

(e) 27-81313 SLAT 5 EXTEND

(f) 27-81316 SLAT 6 EXTEND

(g) 27-81319 SLAT 7 EXTEND

(h) 27-81322 SLAT 8 EXTEND

(2) The FSEU detected an overcurrent on the LE slat 1, 2, 3, 4, 5, 6, 7 or 8 extend discrete output during the Existing Faults test.

B. Possible Causes

(1) LE Flap/Slat Annunciator Panel, P5-12

(2) Wiring problem

(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
F	12	C00318	INDICATOR MASTER DIM SECT 6

D. Related Data

(1) (SSM 27-81-12)

(2) (SSM 27-81-22)

(3) (WDM 27-81-12)

(4) (WDM 27-81-22)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this test of the LE Flap/Slat Annunciator Panel, P5-12:

(a) Remove the LE flap/slat annunciator panel, P5-12.

(b) Disconnect connector D650 from the LE flap/slat annunciator panel, P5-12.

(c) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(d) If the maintenance message does not show, then install a new LE flap/slat annunciator panel, P5-12.

1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

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(e) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the LE flap/slat annunciator panel, P5-12:

(a) Measure the DC and AC voltage between the applicable pin on connector D650 at the LE flap/slat annunciator panel, P5-12 and structure ground:

Table 209

SLAT	D650		D728A
SLAT #1	pin 4	–	pin D1
SLAT #2	pin 7	–	pin C1
SLAT #3	pin 10	–	pin B1
SLAT #4	pin 13	–	pin A1
SLAT #5	pin 24	–	pin D6
SLAT #6	pin 27	–	pin C6
SLAT #7	pin 30	–	pin B6
SLAT #8	pin 33	–	pin A6

(b) If the DC and AC voltage is not zero at the pin, then do these steps:

1) Repair the wiring between the LE flap/slat position annunciator panel, P5-12 and the FSEU, M1746 connector D728A.
2) Re-connect connector D650 to the LE flap/slat position annunciator panel, P5-12.
3) Re-install the LE flap/slat position annunciator panel, P5-12.
4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
5) If the maintenance message does not show, then you corrected the fault.

(c) If the voltages are zero, then continue.

1) Re-connect the connector D650 to the LE flap/slat position annunciator panel, P5-12.
2) Re-install the LE flap/slat position annunciator panel, P5-12.

(3) Replace the FSEU. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

811. Slat Full Extend Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81302 SLAT 1 FULL EXT

(b) 27-81305 SLAT 2 FULL EXT

(c) 27-81308 SLAT 3 FULL EXT

(d) 27-81311 SLAT 4 FULL EXT

(e) 27-81314 SLAT 5 FULL EXT

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(f) 27-81317 SLAT 6 FULL EXT

(g) 27-81320 SLAT 7 FULL EXT

(h) 27-81323 SLAT 8 FULL EXT

(2) The FSEU detected an overcurrent on the LE slat 1, 2, 3, 4, 5, 6, 7 or 8 full extend discrete output during the Existing Faults test.

B. Possible Causes

(1) LE Flap/Slat Annunciator Panel, P5-12

(2) Wiring problem

(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
F	12	C00318	INDICATOR MASTER DIM SECT 6

D. Related Data

(1) (SSM 27-81-12)

(2) (SSM 27-81-22)

(3) (WDM 27-81-12)

(4) (WDM 27-81-22)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this test of the LE Flap/Slat Annunciator Panel, P5-12:

(a) Remove the LE flap/slat annunciator panel, P5-12.

(b) Disconnect connector D650 from the LE flap/slat annunciator panel, P5-12.

(c) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(d) If the maintenance message does not show, then install a new LE flap/slat annunciator panel, P5-12.

1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the LE flap/slat annunciator panel, P5-12:

(a) Measure the DC and AC voltage between the applicable pin on connector D650 at the LE flap/slat annunciator panel, P5-12 and structure ground:

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Table 210

SLAT	D650		D728A
SLAT #1	pin 5	–	pin D2
SLAT #2	pin 8	–	pin C2
SLAT #3	pin 11	–	pin B2
SLAT #4	pin 14	–	pin A2
SLAT #5	pin 25	–	pin D7
SLAT #6	pin 28	–	pin C7
SLAT #7	pin 31	–	pin B7
SLAT #8	pin 34	–	pin A7

(b) If the DC and AC voltage is not zero at the pin, then do these steps:

1) Repair the wiring between the LE flap/slat position annunciator panel, P5-12 and the FSEU, M1746 connector D728A.
2) Re-connect connector D650 to the LE flap/slat position annunciator panel, P5-12.
3) Re-install the LE flap/slat position annunciator panel, P5-12.
4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
5) If the maintenance message does not show, then you corrected the fault.

(c) If the voltages are zero, then continue.

1) Re-connect the connector D650 to the LE flap/slat position annunciator panel, P5-12.
2) Re-install the LE flap/slat position annunciator panel, P5-12.

(3) Replace the FSEU. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

812. Slat In Transit Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81303 SLAT 1 IN TRANS
(b) 27-81306 SLAT 2 IN TRANS
(c) 27-81309 SLAT 3 IN TRANS
(d) 27-81312 SLAT 4 IN TRANS
(e) 27-81315 SLAT 5 IN TRANS
(f) 27-81318 SLAT 6 IN TRANS
(g) 27-81321 SLAT 7 IN TRANS
(h) 27-81324 SLAT 8 IN TRANS

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(2) The FSEU detected an overcurrent on the LE slat 1, 2, 3, 4, 5, 6, 7 or 8 in transit discrete output during the Existing Faults test.

B. Possible Causes

(1) LE Flap/Slat Annunciator Panel, P5-12

(2) Wiring problem

(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
F	12	C00318	INDICATOR MASTER DIM SECT 6

D. Related Data

(1) (SSM 27-81-12)

(2) (SSM 27-81-22)

(3) (WDM 27-81-12)

(4) (WDM 27-81-22)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this test of the LE Flap/Slat Annunciator Panel, P5-12:

(a) Remove the LE flap/slat annunciator panel, P5-12.

(b) Disconnect connector D650 from the LE flap/slat annunciator panel, P5-12.

(c) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(d) If the maintenance message does not show, then install a new LE flap/slat annunciator panel, P5-12.

1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the LE flap/slat annunciator panel, P5-12:

(a) Measure the DC and AC voltage between the applicable pin on connector D650 at the LE flap/slat annunciator panel, P5-12 and structure ground:

Table 211

SLAT	D650		D728A
SLAT #1	pin 3	–	pin D3
SLAT #2	pin 6	–	pin C3

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(Continued)

SLAT	D650		D728A
SLAT #3	pin 9	–	pin B3
SLAT #4	pin 12	–	pin A3
SLAT #5	pin 23	–	pin D8
SLAT #6	pin 26	–	pin C8
SLAT #7	pin 29	–	pin B8
SLAT #8	pin 32	–	pin A8

(b) If the DC and AC voltage is not zero at the pin, then do these steps:

1) Repair the wiring between the LE flap/slat position annunciator panel, P5-12 and the FSEU, M1746 connector D728A.
2) Re-connect connector D650 to the LE flap/slat position annunciator panel, P5-12.
3) Re-install the LE flap/slat position annunciator panel, P5-12.
4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
5) If the maintenance message does not show, then you corrected the fault.

(c) If the voltages are zero, then continue.

1) Re-connect the connector D650 to the LE flap/slat position annunciator panel, P5-12.
2) Re-install the LE flap/slat position annunciator panel, P5-12.

(3) Replace the FSEU. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

813. Flap Extend Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81325 FLAP 1 EXTEND
(b) 27-81327 FLAP 2 EXTEND
(c) 27-81329 FLAP 3 EXTEND
(d) 27-81331 FLAP 4 EXTEND

(2) The FSEU detected an overcurrent on the LE flap 1, 2, 3, or 4 extend discrete output during the Existing Faults test.

B. Possible Causes

(1) LE Flap/Slat Annunciator Panel, P5-12

(2) Wiring problem

(3) FSEU, M1746

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C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
F	12	C00318	INDICATOR MASTER DIM SECT 6

D. Related Data

(1) (SSM 27-81-11)

(2) (SSM 27-81-21)

(3) (WDM 27-81-11)

(4) (WDM 27-81-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this test of the LE Flap/Slat Annunciator Panel, P5-12:

(a) Remove the LE flap/slat annunciator panel, P5-12.

(b) Disconnect connector D650 from the LE flap/slat annunciator panel, P5-12.

(c) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(d) If the maintenance message does not show, then install a new LE flap/slat annunciator panel, P5-12.

1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the LE flap/slat annunciator panel, P5-12:

(a) Measure the DC and AC voltage between the applicable pin on connector D650 at the LE flap/slat annunciator panel, P5-12 and structure ground:

Table 212

FLAP	D650		D728A
FLAP #1	pin 16	–	pin D4
FLAP #2	pin 18	–	pin C4
FLAP #3	pin 20	–	pin B4
FLAP #4	pin 22	–	pin A4

(b) If the DC and AC voltage is not zero at the pin, then do these steps:

1) Repair the wiring between the LE flap/slat position annunciator panel, P5-12 and the FSEU, M1746 connector D728A.

2) Re-connect connector D650 to the LE flap/slat position annunciator panel, P5-12.

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3) Re-install the LE flap/slat position annunciator panel, P5-12.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(c) If the voltages are zero, then continue.

1) Re-connect the connector D650 to the LE flap/slat position annunciator panel, P5-12.

2) Re-install the LE flap/slat position annunciator panel, P5-12.

(3) Replace the FSEU. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

814. Flap In Transit Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81326 FLAP 1 IN TRANS

(b) 27-81328 FLAP 2 IN TRANS

(c) 27-81330 FLAP 3 IN TRANS

(d) 27-81332 FLAP 4 IN TRANS

(2) The FSEU detected an overcurrent on the LE flap 1, 2, 3, or 4 in transit discrete output during the Existing Faults test.

B. Possible Causes

(1) LE Flap/Slat Annunciator Panel, P5-12

(2) Wiring problem

(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
F	12	C00318	INDICATOR MASTER DIM SECT 6

D. Related Data

(1) (SSM 27-81-11)

(2) (SSM 27-81-21)

(3) (WDM 27-81-11)

(4) (WDM 27-81-21)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this test of the LE Flap/Slat Annunciator Panel, P5-12:

(a) Remove the LE flap/slat annunciator panel, P5-12.

(b) Disconnect connector D650 from the LE flap/slat annunciator panel, P5-12.

(c) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(d) If the maintenance message does not show, then install a new LE flap/slat annunciator panel, P5-12.

1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(e) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the LE flap/slat annunciator panel, P5-12:

(a) Measure the DC and AC voltage between the applicable pin on connector D650 at the LE flap/slat annunciator panel, P5-12 and structure ground:

Table 213

FLAP	D650		D728A
FLAP #1	pin 15	–	pin D5
FLAP #2	pin 17	–	pin C5
FLAP #3	pin 19	–	pin B5
FLAP #4	pin 21	–	pin A5

(b) If the DC and AC voltage is not zero at the pin, then do these steps:

1) Repair the wiring between the LE flap/slat position annunciator panel, P5-12 and the FSEU, M1746 connector D728A.

2) Re-connect connector D650 to the LE flap/slat position annunciator panel, P5-12.

3) Re-install the LE flap/slat position annunciator panel, P5-12.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(c) If the voltages are zero, then continue.

1) Re-connect the connector D650 to the LE flap/slat position annunciator panel, P5-12.

2) Re-install the LE flap/slat position annunciator panel, P5-12.

(3) Replace the FSEU. These are the tasks:

- Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801
- Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

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815. Multiple Slat Retract Proximity Sensors Fail - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-81237 LE RETR SENSORS

(b) 27-81238 L RETR SENSORS

(c) 27-81239 R RETR SENSORS

(2) The FSEU detected failure with all the slat retract sensors, the left retract sensors or the right retract sensors.

(3) These faults are generated to help detect a disconnected electrical connector responsible for multiple sensor inputs to the FSEU.

B. Possible Causes

(1) Wiring Problem

(2) FSEU, M1746

C. Related Data

(1) (SSM 27-81-12)

(2) (SSM 27-81-22)

(3) (WDM 27-81-12)

(4) (WDM 27-81-22)

D. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

(1) Do a check of the electrical connectors for the slat retract sensors:

(a) For the left retract sensors, do a check of these connectors:

1) D40122P on the E1-1 shelf.

2) D39901 and D39903 on the left wing to body pressure seal.

(b) For the right retract sensors, do a check of these connectors:

1) D40948P on the E1-1 shelf.

2) D39902 and D39904 on the right wing to body pressure seal.

(c) If you find a disconnected electrical connector, then do these steps:

1) Connect the electrical connector.

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If you did not find a disconnected electrical connector, then continue.

(2) Do this check of the connection between the connector D728A to the FSEU:

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(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Make sure there are no bent pins on connector D728A at the E1-1 shelf.

(c) If there are bent pins on connector D728A, then do these steps:

1) Repair the bent pins.

2) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If there are no bent pins on connector D728A, then continue.

(3) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

817. Master Extend Discrete Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-81333 MASTER EXTEND

(2) The FSEU detected an overcurrent on the master extend discrete output during the Existing Faults test.

B. Possible Causes

(1) LE FLAPS EXT light, L4

(2) Wiring problem

(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	12	C00314	INDICATOR MASTER DIM SECT 2

D. Related Data

(1) (SSM 27-81-31)

(2) (WDM 27-81-31)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

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F. Fault Isolation Procedure

(1) Do this check of the LE FLAPS EXT light, L4, on the center instrument panel, P2-2:

(a) Remove the bulb for the LE FLAPS EXT light, L4.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(c) If the maintenance message does not show, then install a new bulb for the LE FLAPS EXT light, L4.

1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the LE FLAPS EXT light, L4 on the center instrument panel, P2-2:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the DC and AC voltage between pin A9 of connector D728A E1-1.

(c) If the DC and AC voltages are not zero at the pin, then do these steps:

1) Repair the wiring between these pins at connector D728A at the E1-1 shelf and connector D339 at the center instrument panel, P2-2.

D728A		D339
pin A9	- - - - - - - - - - - - - - - - -	pin 15

2) Re-install the bulb for the LE FLAPS EXT light, L4.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If you do not find a problem with the wiring, then continue.

1) Re-install the bulb for the LE FLAPS EXT light, L4.

(3) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

———————— END OF TASK ————————

818. Master Intransit Discrete Output Problem - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-81334 MASTER IN TRANS

(2) The FSEU detected an overcurrent on the master intransit discrete output during the Existing Faults test.

B. Possible Causes

(1) LE FLAPS TRANSIT light, L3

(2) Wiring problem

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(3) FSEU, M1746

C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	12	C00314	INDICATOR MASTER DIM SECT 2

D. Related Data

(1) (SSM 27-81-31)

(2) (WDM 27-81-31)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the LE FLAPS TRANSIT light, L3, on the center instrument panel, P2-2:

(a) Remove the bulb for the LE FLAPS TRANSIT light, L3.

(b) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(c) If the maintenance message does not show, then install a new bulb for the LE FLAPS TRANSIT light, L3.

1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If the maintenance message shows, then continue.

(2) Do this check of the wiring between the FSEU and the LE FLAPS TRANSIT light, L3:

(a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

(b) Measure the DC and AC voltage between pin A10 of connector D728A E1-1.

(c) If the DC and AC voltages are not zero at the pin, then do these steps:

1) Repair the wiring between these pins at connector D728A at the E1-1 shelf and connector D339 at the center instrument panel, P2-2.

D728A		**D339**
pin A10	- - - - - - - - - - - - - - - -	pin 14

2) Re-install the bulb for the LE FLAPS EXT light, L4.

3) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

4) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

(d) If you do not find a problem with the wiring, then continue.

1) Re-install the bulb for the LE FLAPS EXT light, L4.

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(3) Install a new FSEU. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.

(a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

819. Asymmetry Enabled Fault - Fault Isolation

A. Description

(1) This task is for this maintenance message:

(a) 27-81283 ASYM ENABLED

(2) The input to the FSEU from circuit breaker C1208 for the asymmetry enable signal is not correct.

B. Possible Causes

(1) Circuit breaker C1208

(2) Wiring Problem

(3) FSEU, M1746

C. Circuit Breaker

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	7	C01208	STALL WARN ASYM MODE

D. Related Data

(1) (SSM 27-32-11)

(2) (SSM 27-81-11)

(3) (WDM 27-32-11)

(4) (WDM 27-81-11)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If the maintenance message does not show, then there was an intermittent fault.

(3) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do a check of the circuit breaker:

(a) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	7	C01208	STALL WARN ASYM MODE

(b) If the circuit breaker is not closed, then do these steps:

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1) Close this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	7	C01208	STALL WARN ASYM MODE

2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
   a) If the maintenance message does not show, then you corrected the fault.

(c) If the circuit breaker is closed, then continue.

(2) Use the SMYDC, M1747 to find the output of the circuit breaker:
   (a) Get access to the SMYDC, M1747 on the E3-2 shelf.
   (b) Push the ON/OFF button on the front panel of the SMYDC to turn on the display.
   (c) Push the NO button until GROUND TESTS? shows on the display.
   (d) Push the YES button to select GROUND TESTS?.
   (e) Push the NO button until DISCRETE INPUTS? shows on the display.
   (f) Push the YES button to select DISCRETE INPUTS?.
   (g) Use the down arrow button to scroll through the outputs until ASYM EN shows on the display.
   (h) If ASYM EN = OPEN shows on the display, then replace the following circuit breaker:
      1) This is the circuit breaker:

Battery Shield, J9

Row	Col	Number	Name
A	3	C01209	AUX BAT CHARGER

      2) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
      3) If the maintenance message does not show, then you corrected the fault.
   (i) If ASYM EN = GND shows on the display, then continue.
      1) Push the ON/OFF button on the front panel of the SMYDC to turn off the display.

(3) Do a check of the wiring between the FSEU, M1746 and SM69 on the E1-1 shelf:
   (a) Remove the FSEU, M1746. To remove it, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.
   (b) Do a wiring check between pin G5 of connector D728B at the E1-1 shelf SM69 on the E1-1 shelf.
   (c) If you find a problem with the wiring, then do these steps:
      1) Repair the wiring.
      2) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
      3) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
      4) If the maintenance message does not show, then you corrected the fault.
   (d) If you do not find a problem with the wiring, then continue.

(4) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
   (a) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

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

——————— END OF TASK ———————

820. Leading Edge Transit Light Illuminated Problem - Fault Isolation

A. Description

(1) One or more of the leading edge TRANSIT lights on the P5 overhead panel illuminated when the leading edge surfaces were either extended or retracted.

B. Possible Causes

(1) Wiring problem

(2) FSEU, M1746

(3) LE Flap/Slat Annunciator Panel, P5-12

C. Circuit Breakers

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
F	12	C00318	INDICATOR MASTER DIM SECT 6

D. Related Data

(1) (SSM 27-80-01)

(2) (SSM 27-81-11)

(3) (SSM 27-81-12)

(4) (SSM 27-81-21)

(5) (SSM 27-81-22)

(6) (WDM 27-81-11)

(7) (WDM 27-81-12)

(8) (WDM 27-81-21)

(9) (WDM 27-81-22)

E. Initial Evaluation

(1) Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(2) If any SLAT IN TRANS, FLAP IN TRANS or PROX SNSR maintenance message show, then do the applicable fault isolation task.

(3) If one or more of the amber TRANSIT lights on the P5-12 LE Flap/Slat Annunciator Panel are on, then do the Fault Isolation Procedure below.

(4) If all of the amber TRANSIT lights are off, with the leading edge surfaces extended and retracted, then there was an intermittent fault.

F. Fault Isolation Procedure

(1) Do this test of the wiring between the LE Flap/Slat Annunciator Panel, P5-12 and the FSEU, M1746:

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(a) Remove the LE flap/slat annunciator panel, P5-12.

(b) Disconnect connector D650 from the LE flap/slat annunciator panel, P5-12.

(c) Do a continuity check between these pins of connector D650 and structure ground:

Connector D650	Annunciator
pin 15	Flap 1
pin 17	Flap 2
pin 19	Flap 3
pin 21	Flap 4
pin 3	Slat 1
pin 6	Slat 2
pin 9	Slat 3
pin 12	Slat 4
pin 23	Slat 5
pin 26	Slat 6
pin 29	Slat 7
pin 32	Slat 8

(d) If there is continuity between one or more of these pins and structure ground, then do these steps:

1) Remove the FSEU, M1746 from the E1-1 shelf. To remove the FSEU, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.

2) Do a continuity check between the pins on connector D650 and structure ground again.

3) If there is still continuity between the one or more pins and ground, then do these steps:

NOTE: There is a wire shorted to ground between the connector D650 and the FSEU.

a) Repair the wiring between the connector D650 and the FSEU, M1746.

b) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

c) Re-install the LE flap/slat annunciator panel, P5-12.

d) Extend and retract the leading edge flaps and slats. To extend and retract the slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

e) If the TRANSIT lights operate normally, then you corrected the fault.

4) If there is no continuity between the pins and structure ground with the FSEU removed, then do these steps:

a) Install a new FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

b) Re-install the LE flap/slat annunciator panel, P5-12.

c) Extend and retract the leading edge flaps and slats. To extend and retract the slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

d) If the TRANSIT lights operate normally, then you corrected the fault.

(e) If there is no continuity between the pins and structure ground, then continue.

(2) Install a new LE flap/slat annunciator panel, P5-12:

(a) Re-install the FSEU, M1746. To install it, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801

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(b) Extend and retract the leading edge flaps and slats. To extend and retract the slats, do this task: Leading Edge Flap and Slat System Operation With Primary Control, AMM TASK 27-81-00-860-801.

(c) If the TRANSIT lights operate normally, then you corrected the fault.

END OF TASK

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