Scandinavian Airlines System

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CHAPTER 49 TAB		
AIRBORNE AUXILIARY POWER		
EFFECTIVE PAGES SEE LAST PAGE OF LIST FOR NUMBER OF PAGES		
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1	AUG 22/99	01
2	DEC 22/06	SAS
3	DEC 22/06	SAS
4	DEC 22/06	SAS
5	APR 22/00	SAS
6	APR 22/00	SAS
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1	AUG 22/99	01
2	AUG 22/99	01
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49-FAULT CODE DIAGRAM		
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4	NOV 01/84	01
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142	APR 22/05	01A
143	APR 22/05	01A
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180	DEC 22/06	01A
180A	DEC 22/06	01A
180B	DEC 22/06	01A
180C	DEC 22/06	01A
180D	DEC 22/06	01A
180E	DEC 22/06	01A
180F	DEC 22/06	01A
180G	DEC 22/06	01A
180H	DEC 22/06	01A
180I	DEC 22/06	01A
180J	DEC 22/06	01A
180K	DEC 22/06	01A
180L	APR 22/07	01A
180M	APR 22/07	01A
180N	DEC 22/06	01A
180O	DEC 22/06	01A
180P	DEC 22/06	01A
180Q	DEC 22/06	01A
180R	APR 22/08	01A
180S	DEC 22/06	01A
180T	DEC 22/06	01A
180U	DEC 22/06	01A
180V	DEC 22/06	01A
180W	DEC 22/06	01A
180X	DEC 22/06	01A
180Y	DEC 22/06	01A
180Z	DEC 22/06	01A
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101	AUG 10/94	01
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101	DEC 22/07	06
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101	APR 22/99	08
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102	FEB 10/92	01
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49-41-00		
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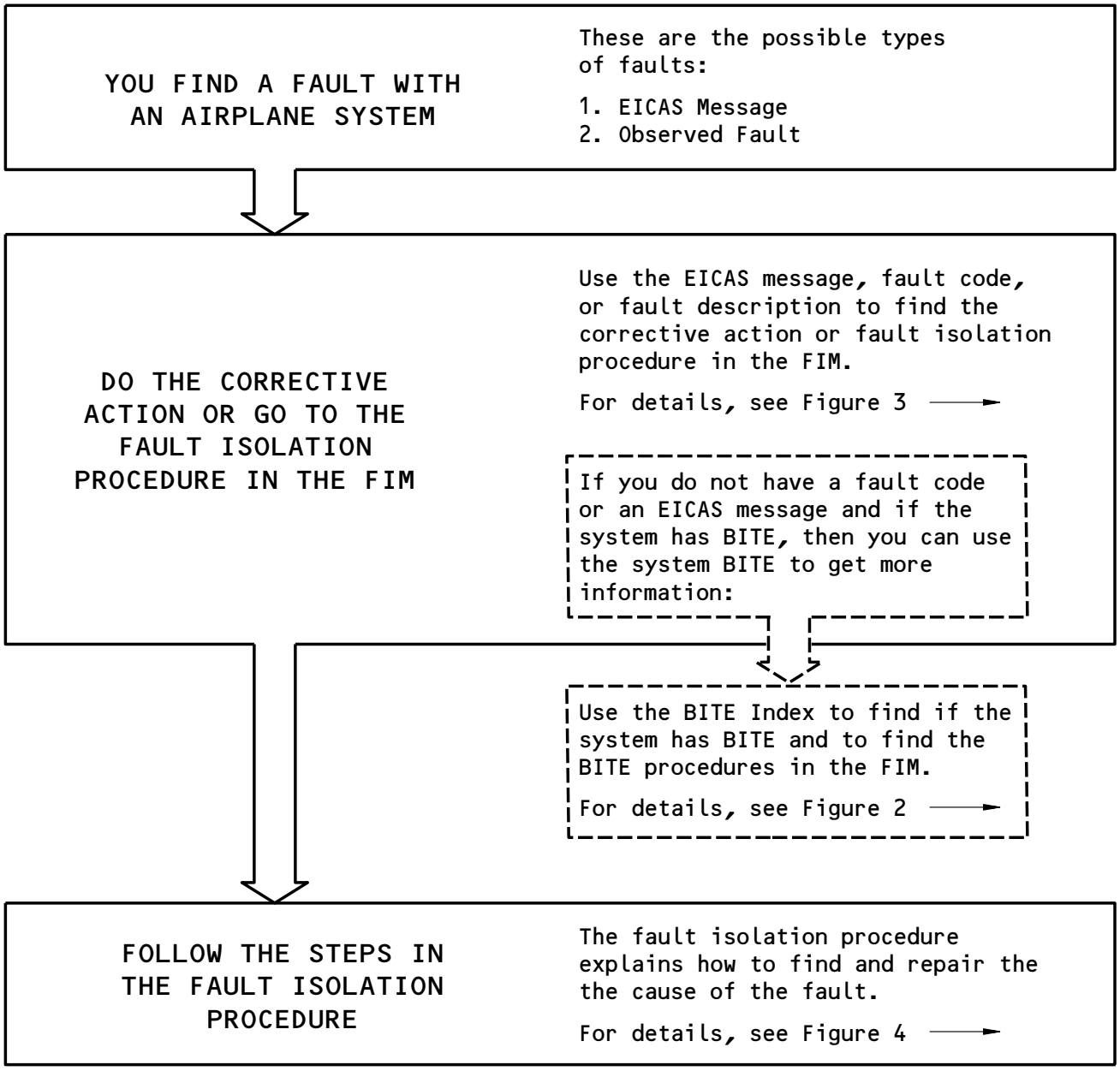
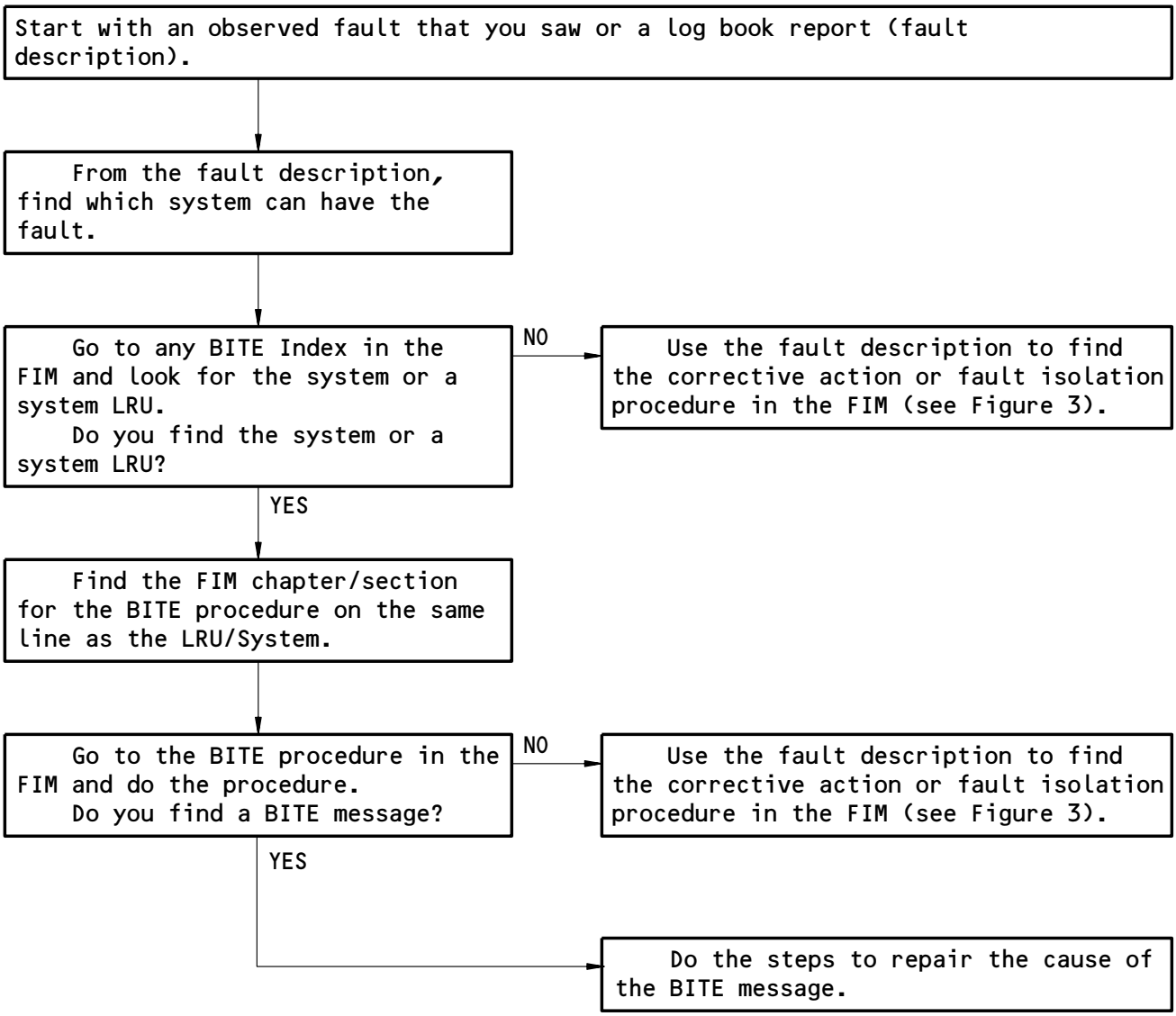


Basic Fault Isolation Process
Figure 1



How to Get Fault Information from BITE
Figure 2

IF YOU HAVE:	THEN DO THIS TO FIND THE CORRECTIVE ACTION OR FAULT ISOLATION PROCEDURE 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. 2. Find the Fault Isolation Reference for the fault code and do the corrective action. If there is a FIM reference, then go to that fault isolation procedure in the FIM and do the steps in the procedure (see Figure 4).
EICAS MESSAGE TEXT (with no fault code)	1. If you know the chapter of the EICAS message, then go to the EICAS Messages section in that chapter and find the EICAS message. If you do not know the chapter of the EICAS message, then do these steps: A. Go to FIM EICAS MESSAGE LIST and find the EICAS message in the table. NOTE: The list follows the INTRODUCTION to the FIM. B. Find the chapter number on the same line as the EICAS message. Go to the EICAS Messages section in that chapter and find the EICAS message. 2. Do the corrective action in the "Procedure" column for the EICAS message. If there is a FIM reference, then go to that fault isolation procedure in the FIM and do the steps in the procedure (see Figure 4).
OBSERVED FAULT DESCRIPTION	1. Go to the Fault Code Diagram for the problem in the applicable chapter. 2. Do the fault analysis on the diagram and find the fault code. 3. 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. 4. Find the Fault Isolation Reference for the fault code and do the corrective action. If there is a FIM reference, then go to that fault isolation procedure in the FIM and do the steps in the procedure (see Figure 4).

How to Find the Corrective Action or Fault Isolation Procedure in the FIM
Figure 3

ASSUMED CONDITIONS AT START OF TASK

- External electrical power is OFF
- Hydraulic power and pneumatic power are OFF
- Engines are shut down
- Circuit breakers for the system are closed
- No equipment in the system is deactivated

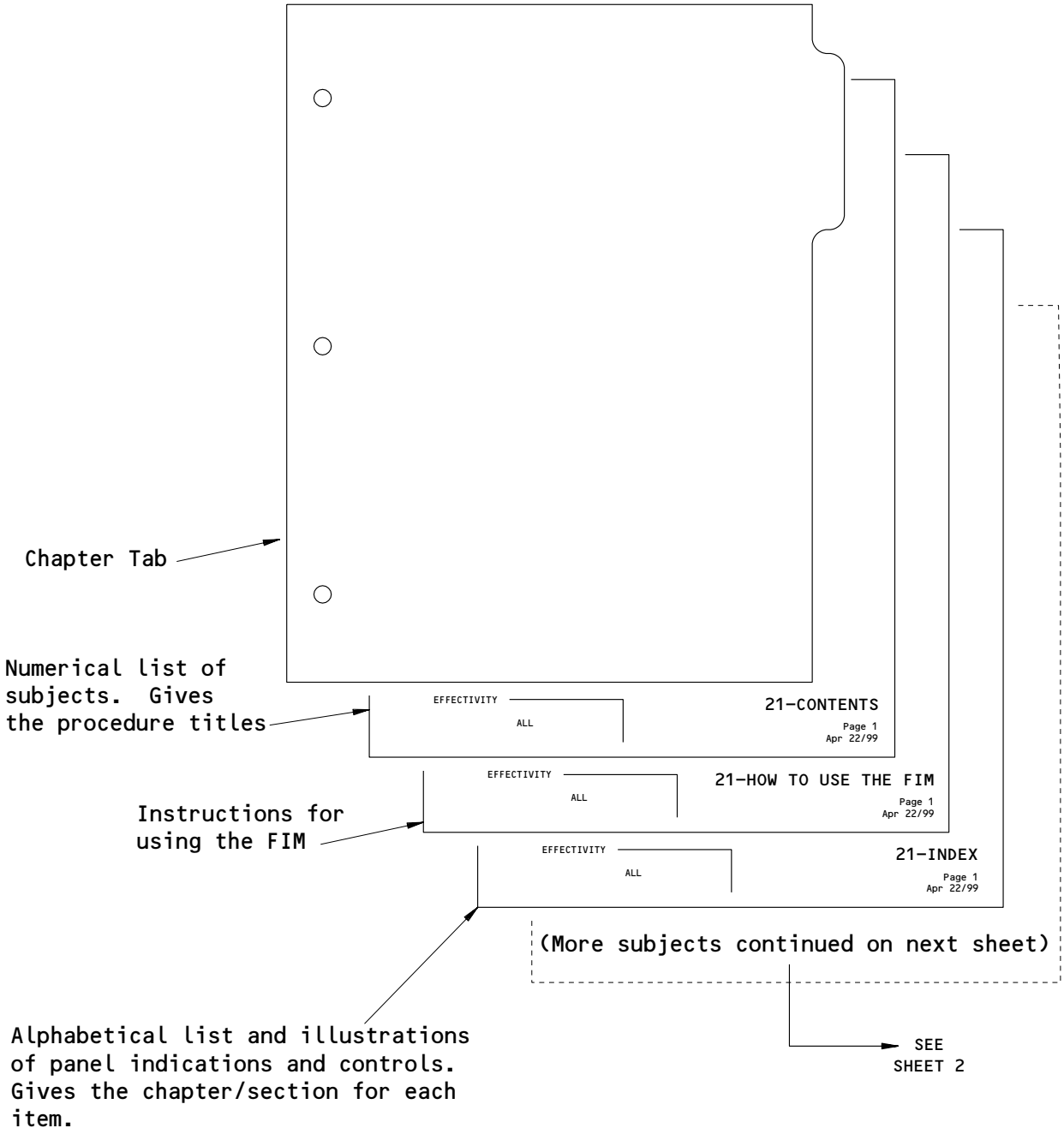
PREREQUISITES

- This box gives the steps to get the airplane from the normal shutdown condition to the configuration necessary to do the fault isolation procedure.
- The Prerequisites give procedure references, circuit breakers, and special tools and equipment requirements.

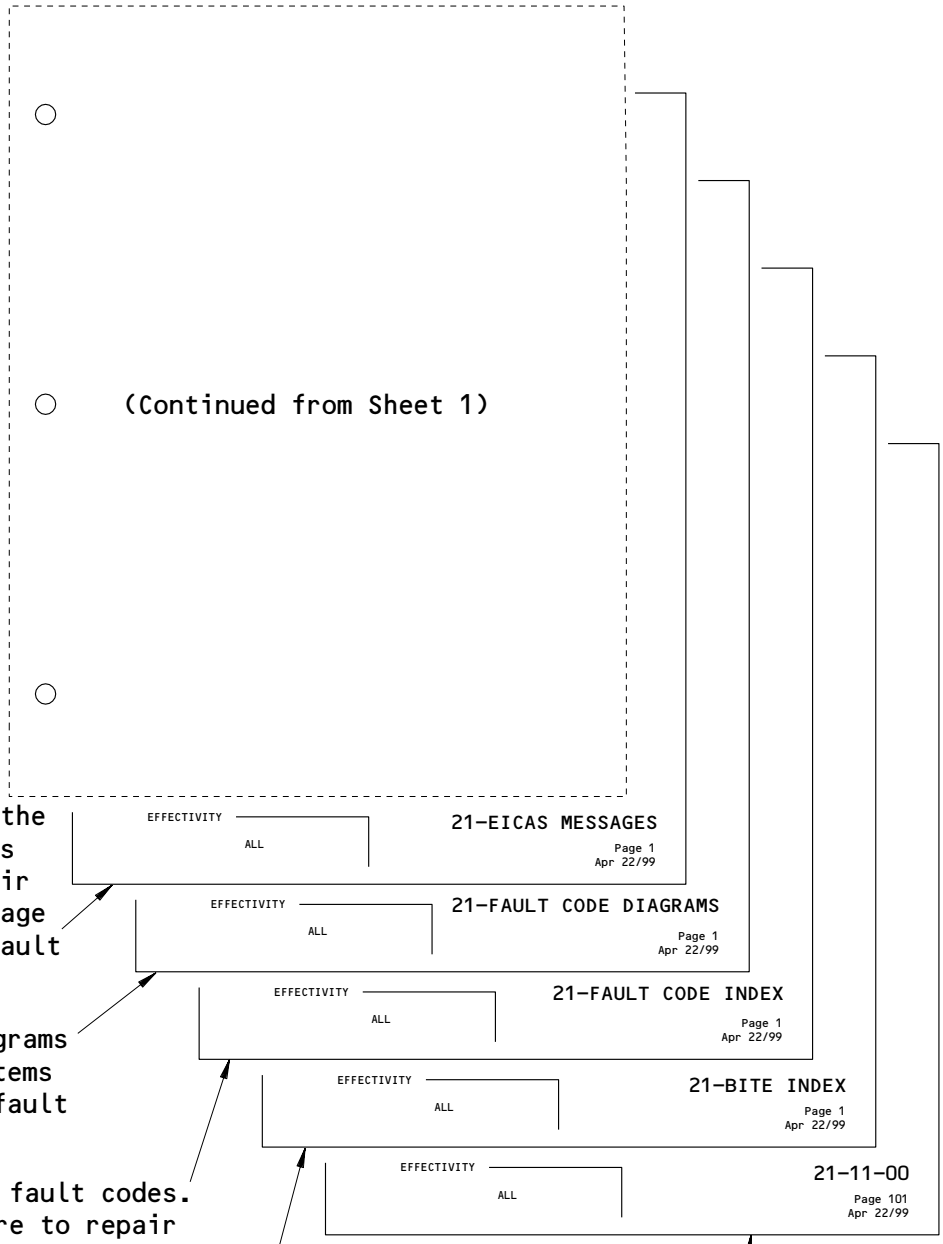
FAULT ISOLATION BLOCKS

- Start the fault isolation procedure at block 1 unless specified differently.
- Do the check to get an answer to the question in the box. Follow the arrow that applies to your answer. This will go to the next check.
- When you get to a box in the column at the right of the page, you have isolated that fault. Do the steps in that box to repair the cause of the fault.
- Make sure that fault is corrected to complete the procedure.

Do the Fault Isolation Procedure
Figure 4



Subjects in Each FIM Chapter
Figure 5 (Sheet 1)



Alphabetical list of the EICAS messages. Gives the procedure to repair the cause of the message or a reference to a fault isolation procedure.

Failure analysis diagrams for the airplane systems to find the correct fault code for the fault.

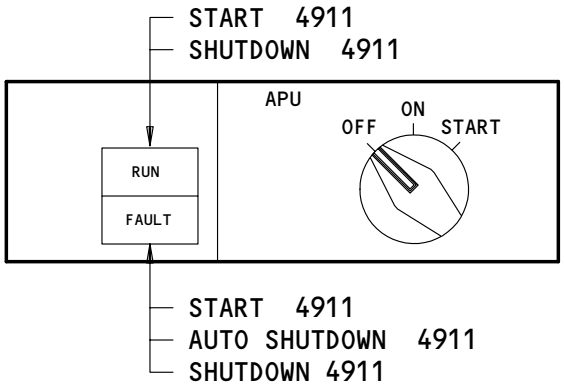
Numerical list of fault codes. Gives the procedure to repair the cause of the fault or a reference to a fault isolation procedure.

Alphabetical list of all the LRUs/systems that have BITE. Gives the chapter/section for the BITE procedure.

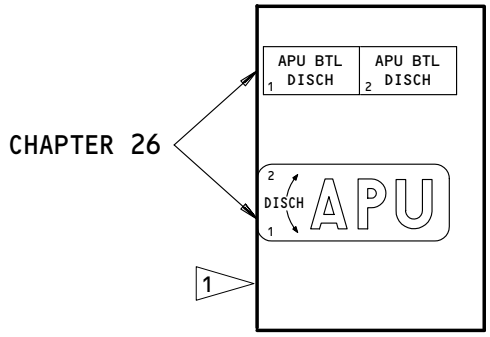
Component index, component location, and fault isolation procedures for the systems in the chapter.

Subjects in Each FIM Chapter
Figure 5 (Sheet 2)

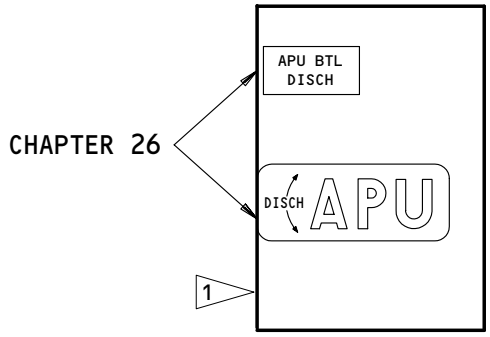
K35542



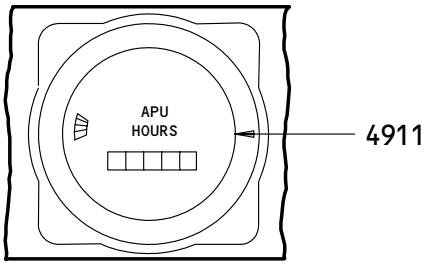
OVERHEAD PANEL



OR

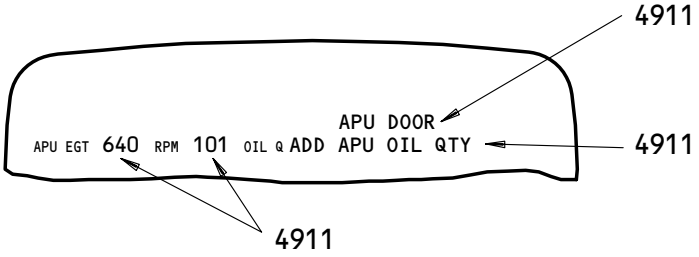


AFT ELECTRONIC CONTROL PANEL

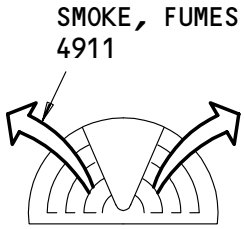


ACCESSORY PANEL

EICAS STATUS DISPLAY



PILOTS' CENTER PANEL



FLT DECK & CABIN AIR OUTLETS

1 IF INSTALLED

APU - INDEX

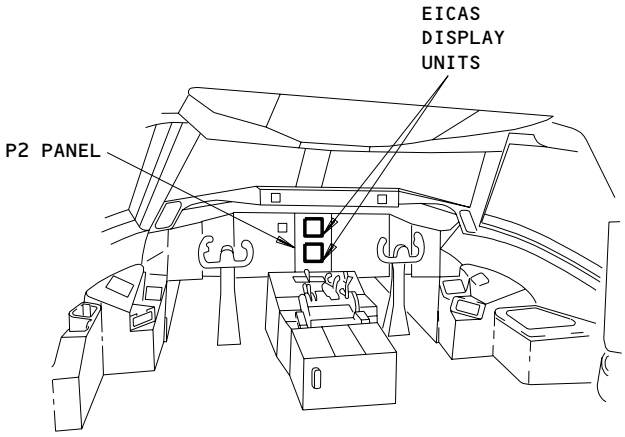
EFFECTIVITY

ALL

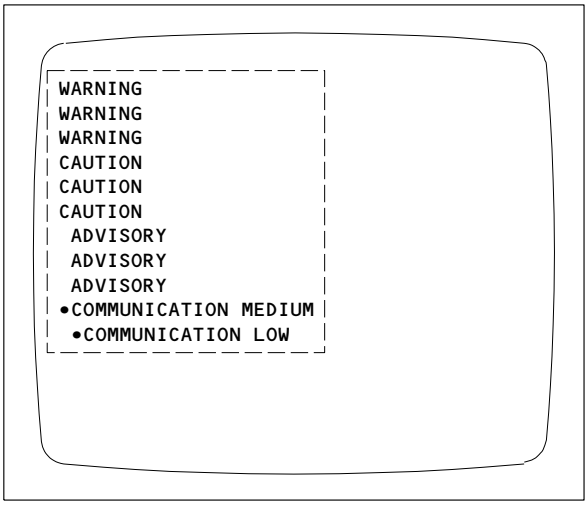
133991

AIRBORNE AUXILIARY POWER - EICAS MESSAGE LIST

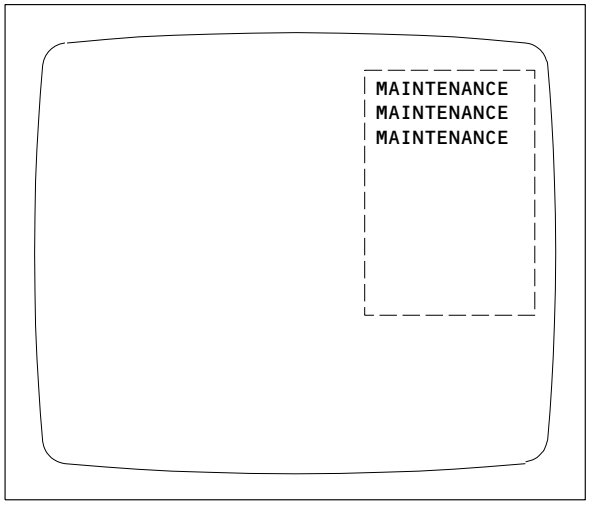
1. General
   A. This procedure shows the EICAS message locations and gives a list of procedures to find the solution for each message.
      (1) EICAS Message Locations (Fig. 1)
         (a) Figure 1 shows the location of the EICAS display units and the area where the messages show on the display units.
         (b) Each message level has a different location. The location and color of each message level is also shown.
      (2) The EICAS MESSAGE LIST gives the message, level, and procedure for each message.
         (a) The EICAS MESSAGE column lists the messages alphabetically. Messages which start with L, R, or C are put together and alphabetized at L.
         (b) The LEVEL column gives all levels for each message as follows:
            A - Warning messages
            B - Caution messages
            C - Advisory messages
            S - Status messages
            M - Maintenance messages
         (c) The PROCEDURE column gives the steps that are necessary to remove the message and includes one or more of the procedures that follow:
            1) A Fault Isolation Manual procedure reference
            2) A Maintenance Manual procedure and reference
            3) Wiring checks and a Wiring Diagram Manual reference
            4) A reference to an EICAS message list in a different chapter.
            5) A reference to a FAULT CODE INDEX and specified fault codes
            6) A step to change the airplane configuration



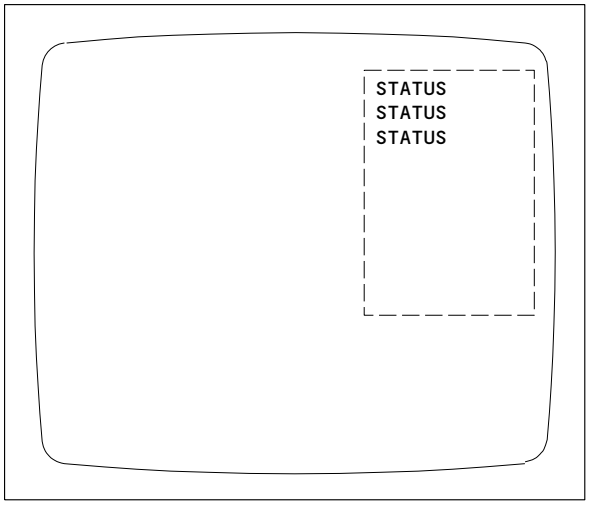
FLIGHT COMPARTMENT



ENGINE PRIMARY PAGE OR COMPACTED PAGE
(TOP DISPLAY UNIT)



ECS/MSG PAGE
(BOTTOM DISPLAY UNIT)

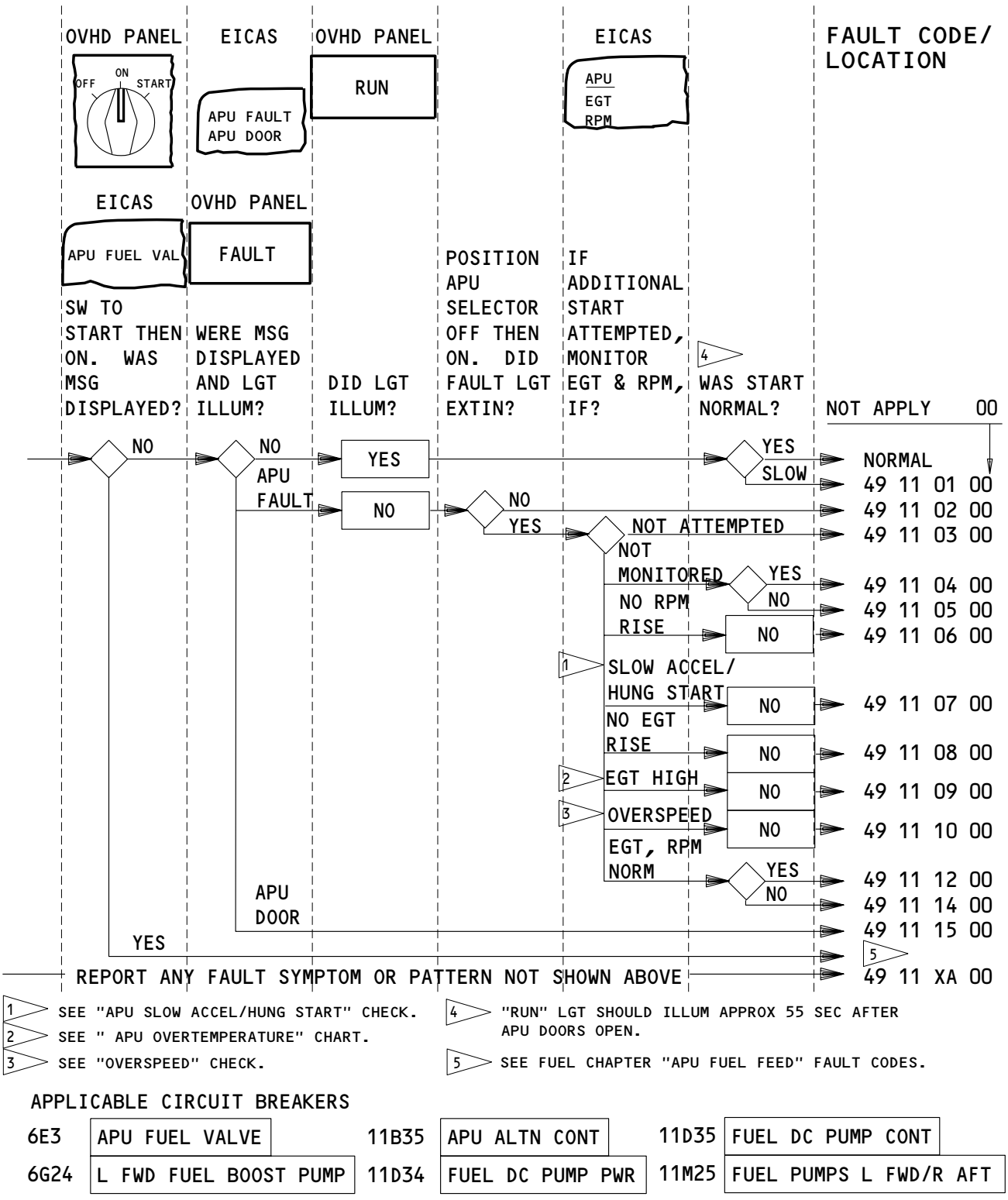


STATUS PAGE
(BOTTOM DISPLAY UNIT)

LEVEL	COLOR
A–WARNING	RED
B–CAUTION	YELLOW
C–ADVISORY	YELLOW
E–COMMUNICATION MEDIUM	WHITE
F–COMMUNICATION LOW	WHITE
S–STATUS	WHITE
M–MAINTENANCE	WHITE

EICAS Message Locations
Figure 1

EICAS MESSAGE LIST		
EICAS MESSAGE	LEVEL	PROCEDURE
APU BITE	M	FIM 49-11-00/101, Fig. 103, Block 1
APU BLEED VAL	C	Go To 36-EICAS MESSAGES
APU DOOR	S, M	FIM 49-11-00/101, Fig. 104, Block 23
APU FAULT	C	FIM 49-11-00/101, Fig. 103, Block 1
APU FUEL VAL	C	Go To 28-EICAS MESSAGES
APU GEN OFF	C	Go To 24-EICAS MESSAGES
APU OIL QTY	S, M	FIM 49-11-00/101, Fig. 116, Block 1
APU ISLN VAL	S, M	Go To 28-EICAS MESSAGES



1 SEE "APU SLOW ACCEL/HUNG START" CHECK.
2 SEE " APU OVERTEMPERATURE" CHART.
3 SEE "OVERSPEED" CHECK.
4 "RUN" LGT SHOULD ILLUM APPROX 55 SEC AFTER APU DOORS OPEN.
5 SEE FUEL CHAPTER "APU FUEL FEED" FAULT CODES.

APPLICABLE CIRCUIT BREAKERS

6E3	APU FUEL VALVE	11B35	APU ALTN CONT	11D35	FUEL DC PUMP CONT
6G24	L FWD FUEL BOOST PUMP	11D34	FUEL DC PUMP PWR	11M25	FUEL PUMPS L FWD/R AFT

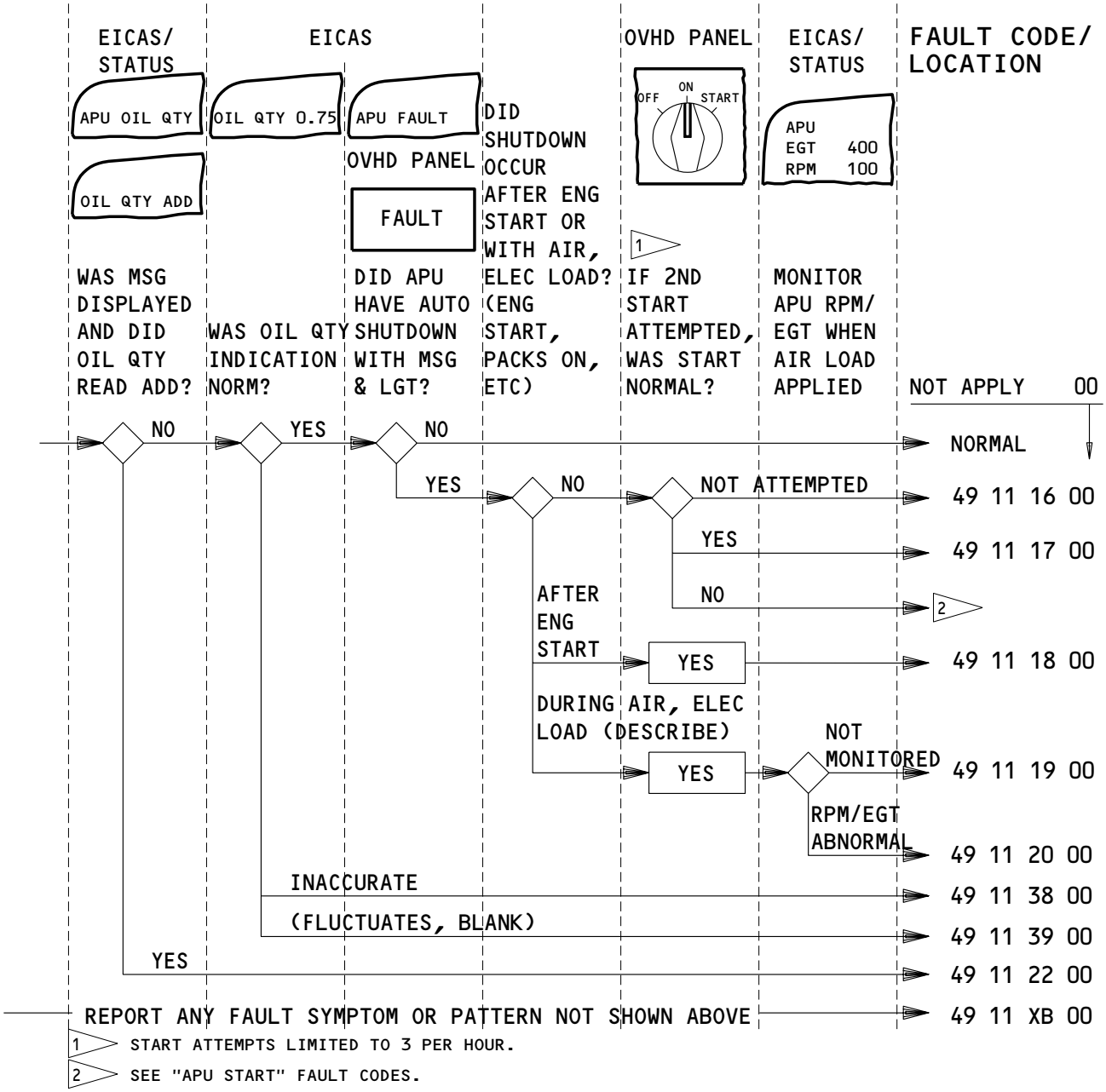
APU START - FAULT CODES

EFFECTIVITY
ALL

49-FAULT CODE DIAGRAM

01

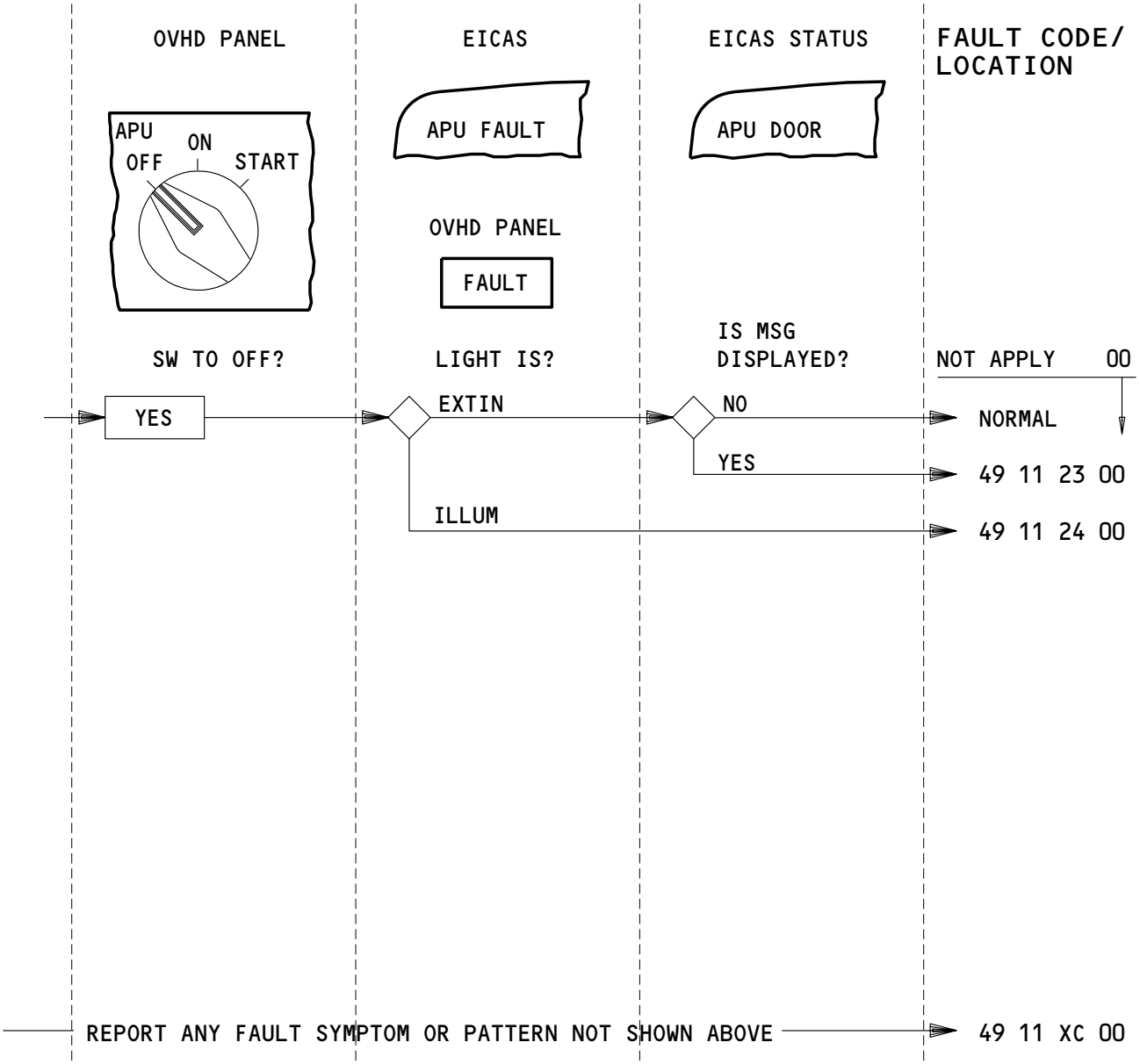
35001



APPLICABLE CIRCUIT BREAKERS

6E3	APU FUEL VALVE	11D34	FUEL DC PUMP PWR
6G24	L FWD FUEL BOOST PUMP	11D35	FUEL DC PUMP CONT
11B35	APU ALTN CONT	11M25	FUEL PUMPS L FWD R AFT

APU AUTO SHUTDOWN/APU OIL QTY – FAULT CODES



APPLICABLE CIRCUIT BREAKERS

6E3	APU FUEL VALVE	11D34	FUEL DC PUMP PWR
6G24	L FWD FUEL BOOST PUMP	11D35	FUEL DC PUMP CONT
11B35	APU ALTN CONT	11M25	FUEL PUMPS L FWD/R AFT

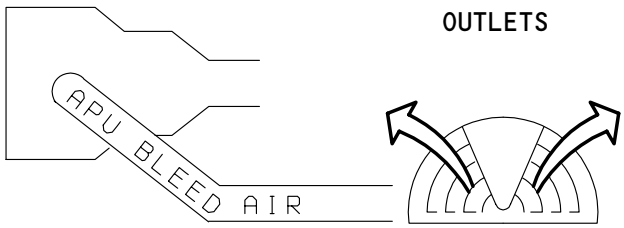
APU SHUTDOWN – FAULT CODES

EFFECTIVITY

ALL

49-FAULT CODE DIAGRAM

35009



FAULT CODE/
LOCATION

DID APU DISCHARGE SMOKE, FUMES INTO CABIN?

NOT APPLY 00

NO → NORMAL

1
YES → 49 11 27 00

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 49 11 XD 00

1 DO NOT REPORT IF SMOKE FUMES ARE FROM OTHER SOURCES,
AS ENGINE EXHAUST, DE-ICE AGENT, ETC.

APPLICABLE CIRCUIT BREAKERS

NONE

SMOKE, FUMES FROM APU - FAULT CODES

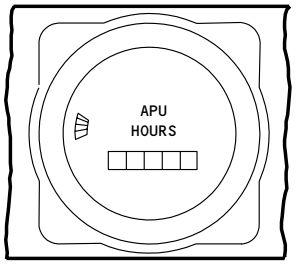
EFFECTIVITY

ALL

49-FAULT CODE DIAGRAM

138120

ACCESSORY PANEL



FAULT CODE/
LOCATION

DOES INDICATOR ADVANCE NORM WITH APU OPERATING?

NOT APPLY 00

YES → NORMAL

NO → 49 72 01 00

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 49 72 XA 00

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

6H28	APU HOURMETER
11B35	APU ALTN CONT

APU HOURS INDICATOR – FAULT CODES

EFFECTIVITY

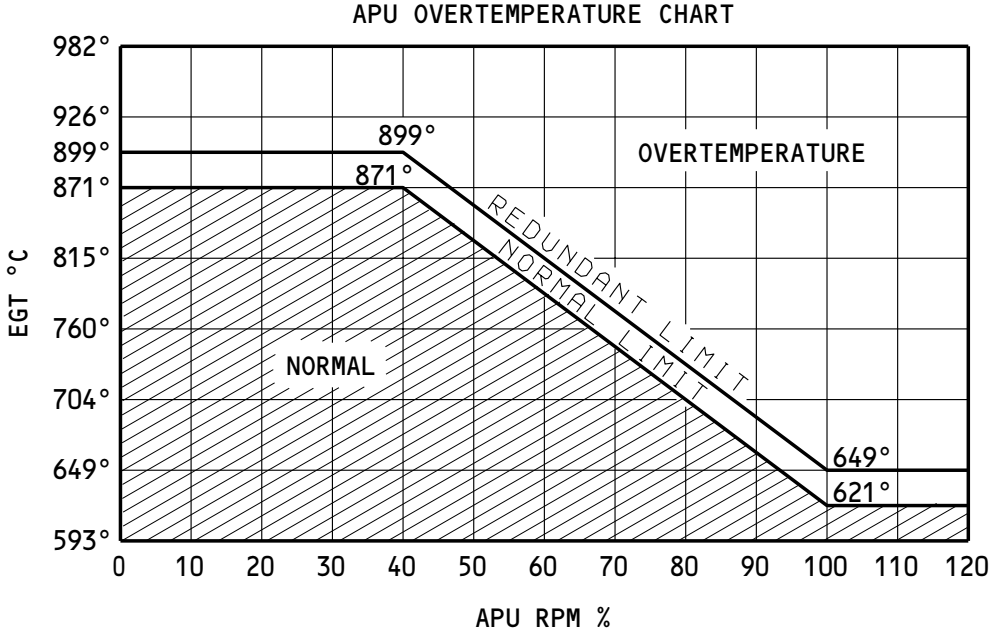
ALL

49-FAULT CODE DIAGRAM

01

93700

CHART 1



APU WILL SHUT DOWN AND FAULT LGT ILLUMINATE WITH EICAS MSG "APU FAULT DISPLAYED", IF THE NORMAL LIMIT IS EXCEEDED FOR .5 SEC OR THE REDUNDANT LIMIT FOR .1 SEC.

CHART

CHECK 1

APU SLOW ACCEL/HUNG START CHECK

APU WILL SHUT DOWN AND FAULT LGT ILLUMINATE WITH EICAS MSG "APU FAULT" DISPLAYED IF THESE ACCELERATION LIMITS ARE NOT MET.

RPM %	TIME (SEC)
NO ACCEL	5
7	30
20	50
50	70 (ON GRD OR IN FLT BELOW 30,000')
50	100 (IN FLT ABOVE 30,000')

CHECK 2

OVERSPEED LIMIT

APU WILL SHUT DOWN AND FAULT LGT ILLUMINATE WITH EICAS MSG "APU FAULT" DISPLAYED IF 107% RPM LIMIT IS EXCEEDED.

FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
49 11 XA 00	1. An APU start problem was encountered by the flight crew which is not covered by the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 49-00-04
49 11 XB 00	1. An APU auto shutdown or oil quantity problem was encountered by the flight crew which is not covered by the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 49-00-04
49 11 XC 00	1. An APU shutdown problem was encountered by the flight crew which is not covered by the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 49-00-04
49 11 XD 00	1. An APU smoke, fumes from APU problem was encountered by the flight crew which is not covered by the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. FIM 49-11-00/101, Fig. 122, Block 1
49 72 XA 00	1. An APU hours indicator problem was encountered by the flight crew which is not covered by the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 49-00-04
49 11 01 00	1. APU slow to start, _____ sec elapsed before RUN lgt illum. 2. FIM 49-11-00/101, Fig. 104, Block 1
49 11 02 00	1. APU failed to start. FAULT Lgt illum & EICAS msg APU FAULT displayed. APU selector positioned OFF then ON, Lgt & msg remained. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 03 00	1. APU failed to start. RUN lgt extin, FAULT illum and EICAS msg APU FAULT displayed. Describe any additional indications such as: RPM, EGT, battery voltage. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 04 00	1. APU failed to start. FAULT Lgt illum & EICAS msg APU FAULT displayed. APU started normal on 2nd attempt. 2. FIM 49-11-00/101, Fig. 103, Block 1

FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
49 11 05 00	1. APU failed to start. FAULT Lgt illum & EICAS msg APU FAULT displayed. Additional start attempts unsuccessful. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 06 00	1. APU failed to start. FAULT Lgt illum & EICAS msg APU FAULT displayed. Second attempt indicates no RPM rise. 2. FIM 49-11-00/101, Fig. 104, Block 1
49 11 07 00	1. APU failed to start. FAULT Lgt illum & EICAS msg APU FAULT displayed. Second attempt indicates (slow accel, hung start). 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 08 00	1. APU failed to start. FAULT Lgt illum & EICAS msg APU FAULT displayed. Second attempt indicates no EGT rise. 2. FIM 49-11-00/101, Fig. 104, Block 1
49 11 09 00	1. APU failed to start. FAULT Lgt illum & EICAS msg APU FAULT displayed. Second attempt indicates EGT high. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 10 00	1. APU failed to start. FAULT Lgt illum & EICAS msg APU FAULT displayed. Second attempt indicates APU overspeed. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 11 00	Not Used
49 11 12 00	1. APU failed to start. FAULT Lgt illum & EICAS msg APU FAULT displayed. Second start norm. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 13 00	Not Used

FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
49 11 14 00	1. APU failed to start. Fault lgt illum and EICAS msg APU FAULT displayed. Second attempt shows norm (EGT, RPM) but APU quit. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 15 00	1. APU failed to start. EICAS APU DOOR and APU FAULT messages displayed and FAULT light illuminated when SW placed to START. 2. FIM 49-11-00/101, Fig. 104, Block 23
49 11 16 00	1. APU had AUTO shutdown, FAULT light illuminated and EICAS APU FAULT message displayed. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 17 00	1. APU had auto shutdown, FAULT lgt illum and EICAS msg APU FAULT displayed. Next start attempt normal. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 18 00	1. APU had auto shutdown after eng start. FAULT lgt illum and EICAS msg APU FAULT displayed. Next start attempt normal. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 19 00	1. APU had auto shutdown during (eng start, packs on, hyd pump on, etc.), FAULT lgt illum and EICAS msg APU FAULT displayed. Next start attempt normal. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 20 00	1. APU had auto shutdown during (eng start, packs on, hyd pump on, etc.), FAULT lgt illum and EICAS msg APU FAULT displayed. After 2nd start, APU (RPM low/EGT high) when (eng started, packs on, hyd pump on, etc.). 2. FIM 49-11-00/101, Fig. 103, Block 1

FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
49 11 21 00	Not Used
49 11 22 00	1. EICAS message APU OIL QTY displayed and oil QTY reads ADD. 2. FIM 49-11-00/101, Fig. 116, Block 1
49 11 23 00	1. EICAS msg APU DOOR remains displayed after APU shutdown. 2. FIM 49-11-00/101, Fig. 104, Block 23
49 11 24 00	1. APU fault during shutdown. FAULT light illuminated and EICAS APU FAULT message displayed. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 25 00	1. APU shut down prior to 60 second cool down period. FAULT light illuminated and EICAS APU FAULT message displayed. 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 26 00	Not Used
49 11 27 00	1. (Smoke, Fumes) coming into cabin from APU. 2. FIM 49-11-00/101, Fig. 122, Block 1
49 11 28 00	1. EICAS APU BITE msg displayed (Ref Chapter 31 for fault code diagram). 2. FIM 49-11-00/101, Fig. 103, Block 1
49 11 29 00	1. EICAS msg APU DOOR displayed (Ref Chapter 31 for fault code diagram). 2. FIM 49-11-00/101, Fig. 104, Block 23
49 11 30 00	1. EICAS message APU OIL QTY displayed. (Ref Chapter 31 for fault code diagram). 2. FIM 49-11-00/101, Fig. 116, Block 1

FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
49 11 31 --	1. (O1=L, O2=R) eng slow to accel to idle. APU supplied duct pressure. Low ___ psi (Ref Chapter 71 for fault code diagram). 2. FIM 49-11-00/101, Fig. 120, Block 1
49 11 32 00	1. Both L & R duct press zero with APU running, bleed air sw ON, isln valves open & eng bleed air valves indicating closed (Ref Chapter 36 for fault code diagram). 2. FIM 49-11-00/101, Fig. 118, Block 1
49 11 33 00	1. APU output press low, _____ PSI (Ref Chapter 36 for fault code diagram). 2. FIM 49-11-00/101, Fig. 120, Block 1
49 11 34 00	1. APU output press fluctuating (Ref Chapter 36 for fault code diagram). 2. FIM 49-11-00/101, Fig. 119, Block 1
49 11 35 00	1. APU RPM drops when (packs operated, engines started). EICAS msg APU GEN OFF displayed and APU Gen OFF lgt illum (Ref Chapter 24 for fault code diagram). 2. Replace the inlet pressure (P2) sensor YBMTS4 (AMM 49-61-04/201). If the problem continues, replace the fuel control unit YBMM4 (AMM 49-31-01/401).
49 11 36 00	1. Pneumatic press low when using APU bleed air for (eng start, pack operation) (Ref Chapter 36 for fault code diagram). 2. FIM 49-11-00/101, Fig. 120, Block 1
49 11 37 00	Not Used
49 11 38 00	1. APU oil quantity display on EICAS PERF/APU page is inaccurate. 2. Replace the oil quantity transmitter YBMS3 (AMM 49-94-04/401).

FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
49 11 39 00	1. APU oil quantity display on EICAS PERF/APU page (fluctuates blank). 2. Replace the oil quantity transmitter YBMS3 (AMM 49-94-04/401).
49 11 40 --	Not Used
49 72 01 00	1. APU hours indicator does not advance normally with APU operating. 2. Replace the APU hourmeter (AMM 49-72-01/401). If the problem continues, examine circuit between the APU control panel P5, connector D1394, pins 25 and 26, to the hourmeter terminals. Repair any defects that you find (WDM 49-72-11).

BITE Index

1. General
   A. Use this index to find the BITE procedure for the applicable LRU/System.
   B. The BITE procedure will provide the fault isolation instructions for the fault indications/LRU maintenance messages.

LRU/System Name	Acronym	FIM Reference
ACARS Management Unit		23-22
Air Data Computer	ADC	34-12
Air Data Inertial Reference Unit	ADIRU	34-26
Air Supply Control and Test Unit	ASCTU	36-20
Air Traffic Control Transponder	ATC	34-53
Airborne Vibration Monitor Signal Conditioner	AVM	77-31
Antiskid/Autobrake Control Unit	AACU	32-42
APU Fire Detection System		26-15
Automatic Direction Finder Receiver	ADF	34-57
APU Control Unit (or Electronic Control Unit)	ECU	49-11
Autopilot/Flight Director	AFDS	22-00
Auxiliary Zone Temperature Controller	AZTC	2160/21-61
Brake Temperature Monitor Unit	BTMU	32-46
Bus Power Control Unit	BPCU	24-20
Cabin Pressure Controller	CPC	21-30/21-31
Cabin Temperature Controller	CTC	21-61
Digital Flight Data Acquisition Unit	DFDAU	31-31
Distance Measuring Equipment Interrogator	DME	34-55
Duct Leak (Wing and Body)		26-18
E/E Cooling Control Card (If cards installed)		21-58
ECS Bleed Configuration Card		36-10
Electronic Control Unit	ECU	49-11
Electronic Engine Control Monitor Unit (Non-FADEC Engines)	EECM	71-EECM Message Index
Electronic Flight Instrument System	EFIS	34-22

Bite Index
Figure 1 (Sheet 1)

LRU/System Name	Acronym	FIM Reference
Engine Fire/Overheat Detection System		26-11
Engine Indication and Crew Alerting System Computer	EICAS	31-41
Enhanced Ground Proximity Warning Computer	EGPWC	34-46
Equipment Cooling System Controller		21-58
Equipment Cooling Temperature Controller		21-58
Flap/Slat Electronic Unit	FSEU	27-51
Flap/Stabilizer Position Module	FSPM	27-58
Flight Management Computer	FMC	34-61
Fuel Quantity Indicating System Processor	FQIS	28-41
Ground Proximity Warning Computer	GPWC	34-46
HF (High Frequency) Communication		23-11
In-Flight Entertainment Equipment Cooling Card		21-58
Inertial Reference Unit	IRU	34-21
Instrument Comparator Unit	ICU	34-25
Instrument Landing System Receiver	ILS	34-31
Large Format Display System	LFDS	31-63
Lower Cargo Compartment Smoke Detection System		26-16
Maintenance Control Display Panel	MCDP	22-00
Multi-Mode Receiver	MMR	34-31
PA (Passenger Address) Amplifier		23-31
Pack Standby Temperature Controller	PSTC	21-51
Pack Temperature Controller	PTC	21-51
Passenger Entertainment System	PES	23-34
Power Supply Module (Control System Electronics Units)	PSM	27-09
Propulsion Interface and Monitor Unit (FADEC Engines)	PIMU	71-PIMU Message Index
Proximity Switch Electronics Unit	PSEU	32-09

Bite Index
Figure 1 (Sheet 2)

K35544

LRU/System Name	Acronym	FIM Reference
Radio Altimeter Transmitter/Receiver	RA	34-33
Rudder Ratio Changer Module	RRCM	27-09
Satellite Data Unit	SDU	23-25
Spoiler Control Module	SCM	27-09
Stabilizer Trim/Elevator Asymmetry Limit Module	SAM	27-09
Stall Warning Computer/Module (in Warning Electronic Unit)	SWC	27-32
Strut Overheat Detection System (RR Engines)		26-12
Thrust Management Computer/Autothrottle	TMC	22-00
Traffic Alert and Collision Avoidance Computer	TCAS	34-45
VHF (Very High Frequency) Communication		23-12
VOR/Marker Beacon Receiver	VOR/MKR	34-51
Warning Electronic Unit BITE Module (Stall Warning)	WEU	27-32
Weather Radar Transceiver	WXR	34-43
Wheel Well Fire Detection		26-17
Window Heat Control Unit	WHCU	30-41
Yaw Damper Module	YDM	22-21
Yaw Damper/Stabilizer Trim Module	YSM	27-09
Zone Temperature Controller	ZTC	21-60/21-61

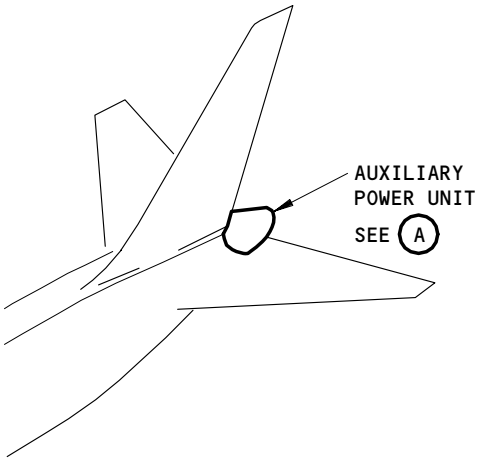
Bite Index
Figure 1 (Sheet 3)

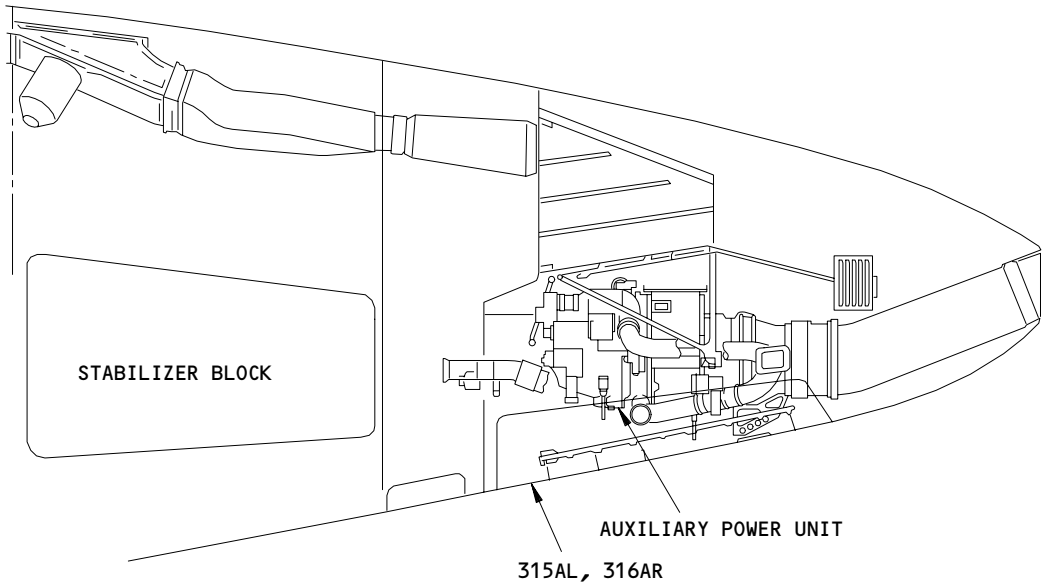
AUXILIARY POWER UNIT

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
AUXILIARY POWER UNIT	--	1	316AR,315AL, APU COMPT	49-11-01

Auxiliary Power Unit - Component Index
Figure 101

E61426





AUXILIARY POWER UNIT

A

Auxiliary Power Unit - Component Location
Figure 102

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 1, APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

APU BITE PROCEDURE

1 PUT THE APU MASTER CONTROL SWITCH ON P5 TO "OFF".
MAKE SURE THE APU SPEED IS BELOW 7%.
MOVE THE TEST SWITCH ON THE APU CONTROL UNIT (ECU), M206, IN THE AFT EQUIPMENT CENTER TO "LAMP TEST".
DO ALL LIGHTS IN THE FIVE COLUMNS OF INDICATORS COME ON, COLUMN BY COLUMN, FROM LEFT TO RIGHT?
THE MINIFLAG SUMMARY WILL SHOW IMMEDIATELY AFTER THE LAST COLUMN OF INDICATOR LIGHTS GO OUT IN THE LAMP TEST.
TURN YOUR HEAD CLOCKWISE 90 DEGREES TO READ THE MINIFLAG NUMBERS (FIG 103, SHEET 11).
WRITE ALL OF THE MINIFLAGS THAT SHOW.

NOTE: DO NOT USE THE MINIFLAG DATA AS AN ALTERNATIVE TO THE FAULT ISOLATION PROCEDURE.

NOTE: THE LAMPS THAT COME ON AFTER THE MINIFLAGS ARE USED BY THE APU MANUFACTURER ONLY.

NO → 21 IF ONE OR MORE LIGHTS DO NOT COME ON, COMPLETE THE BITE PROCEDURE (FIG. 103, BLOCK 2) TO GET THE HISTORY DATA, THEN REPLACE THE ECU, M206 (AMM 49-61-05/401).
IF NONE OF THE LIGHTS COME ON, EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408C, PIN 9 (GND, PIN 11), TO CIRCUIT BREAKERS "APU ALTN CONT" (11B35) AND "APU PRIME CONT" ON THE E6 RACK (WDM 49-61-11). REPAIR THE PROBLEMS THAT YOU FIND.
MAKE SURE THE APU CONTROL UNIT, CONNECTOR D408B, PIN A5, IS NOT GROUNDED (WDM 49-61-11).

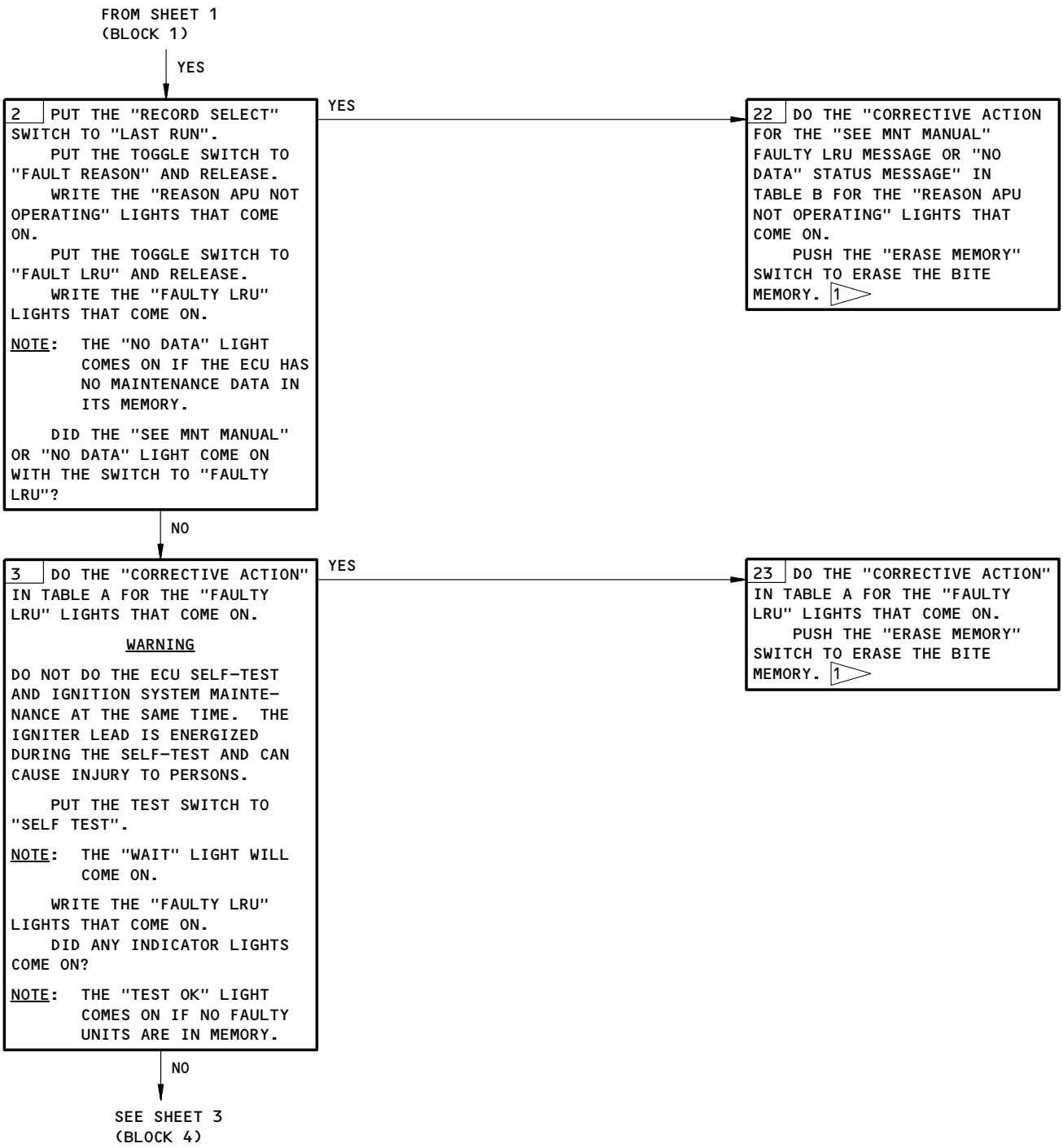
YES

SEE SHEET 2
(BLOCK 2)

1 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

APU BITE Procedure
Figure 103 (Sheet 1)

L16815



APU BITE Procedure
Figure 103 (Sheet 2)

FROM SHEET 2
(BLOCK 3)

NO

4 DID THE "NORMAL STOP SIG" LIGHT COME ON WHEN THE INITIAL PROBLEM WAS A FAILURE TO START OR AN AUTO SHUTDOWN?

YES → 24 REPLACE THE APU CONTROL PANEL, M1 (WDM 49-61-11).
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE APU CONTROL PANEL, M1, CONNECTOR D1394, PIN 15, TO THE APU CONTROL UNIT, M206, CONNECTOR D408B, PIN A5 (WDM 49-61-11). REPAIR THE PROBLEMS THAT YOU FIND.

NO → 25 THE SYSTEM IS OK.

MESSAGE	CORRECTIVE ACTION	IF THE PROBLEM CONTINUES
INLET DOOR RLY LCIT SENSOR	FIG. 132 REPLACE THE LCIT SENSOR, YBMTS5 (AMM 49-61-03/401). ▷2 ▷3	EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS E6 AND E7, TO THE INLET TEMPERATURE SENSOR (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND.
FUEL SOL	FIG. 123	
PT SENSOR	FIG. 124	
ΔP SENSOR	FIG. 125	
#1 SPD SENSOR	FIG. 136	
#2 SPD SENSOR	FIG. 137	
LOP SWITCH	REPLACE THE LOP SWITCH, YBMS2 (AMM 49-94-02/401). ▷2 ▷4	MAKE SURE THE ECU, CONNECTOR D408B, PIN C5, IS NOT GROUNDED. ▷3 REPAIR THE PROBLEMS THAT YOU FIND.
FUEL CONTROL	FIG. 126	

FAULTY LRU - REFERENCE
TABLE A

▷2 ERASE THE "APU BITE" MESSAGE ON EICAS IF IT SHOWS (FIM 31-41-00/101, FIG. 109).

▷3 DO THE SELF-TEST (FIG. 103, BLOCK 3) TO MAKE SURE THE PROBLEM IS REPAIRED.

▷4 OPERATE THE APU (AMM 49-11-00/201) AND DO THE APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

APU BITE Procedure
Figure 103 (Sheet 3)

L16652

MESSAGE	CORRECTIVE ACTION	IF THE PROBLEM CONTINUES
SURGE VALVE	REPLACE THE SURGE VALVE, YBMM5 (AMM 49-53-01/401). 3	EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS G6 AND G7, TO THE TORQUE MOTOR CONNECTOR, PINS 1 AND 2 (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND.
EGT #1 CIRCUIT	FIG. 134	
EGT #2 CIRCUIT	FIG. 135	
IGV ACT	FIG. 127	
IGN UNIT	FIG. 128	
DEOIL SOL	REPLACE THE DEOIL SOLENOID VALVE, YBMM3 (AMM 49-27-08/401). 2 3	EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS J4 AND J5, TO THE SOLENOID CONNECTOR, PINS 1 AND 2. EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PIN J10, TO THE OIL TEMP SWITCH, YBMS5, CONNECTOR, PIN 1 (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND.
FLOW DIV SOL	REPLACE THE FUEL FLOW DIVIDER SOLENOID VALVE, YBMM2 (AMM 49-31-03/401). 2 3	EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS J7 AND J8, TO THE SOLENOID CONNECTOR, PINS 1 AND 2 (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND.
ECS CONTROL	REPLACE THE ZONE TEMPERATURE CONTROL, M195 (AMM 21-61-03/401). 4	EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS D8 AND D9, TO THE ZONE TEMPERATURE CONTROL, M195, CONNECTOR D2558B, PINS C1 AND C2 (WDM 21-61-51). REPAIR THE PROBLEMS THAT YOU FIND.
APU STARTER	IF #1 SPD SENSOR AND #2 SPD SENSOR LIGHTS COME ON, DO THE CORRECTIVE ACTION FOR THEM. IF #1 SPD SENSOR AND #2 SPD SENSOR LIGHTS DO NOT COME ON, GO TO FIG. 129.	
A/C STRT CIRCUIT	FIG. 106A	

FAULTY LRU - REFERENCE
TABLE A

APU BITE Procedure
Figure 103 (Sheet 4)

L16653

MESSAGE	CORRECTIVE ACTION	IF THE PROBLEM CONTINUES
HOT SENSOR	REPLACE THE OIL TEMPERATURE (HOT) SENSOR, YBMTS1 (AMM 49-94-01/401). 2 3	EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS E4 AND E5, TO THE HOT SENSOR CONNECTOR, PINS A AND B (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND.
P2 SENSOR	FIG. 130	
ECU	FIG. 131	
FAN VALVE	APU WITHOUT THE FAN ISOLATION VALVE (POST-ALLIEDSIGNAL-SB 49-7391); IGNORE THIS MESSAGE, IT IS A NUISANCE MESSAGE 2 4 APU WITH THE FAN ISOLATION VALVE (PRE-ALLIEDSIGNAL-SB 49-7391); REPLACE THE FAN ISOLATION VALVE, YBMS4 (AMM 49-51-02/401). 2 3	APU WITH THE FAN ISOLATION VALVE CONNECTED TO THE FIRST-STAGE COMPRESSOR (PRE-ALLIEDSIGNAL-SB 49-7391, POST-ALLIEDSIGNAL-SB 49-7192); EXAMINE THE CONDITION OF THE LINE FROM THE FAN ISOLATION VALVE TO THE FIRST-STAGE COMPRESSOR. REPAIR THE LINE IF IT IS NECESSARY. APU WITH THE FAN ISOLATION VALVE CONNECTED TO THE SURGE VALVE (PRE-ALLIEDSIGNAL-SB 49-7391, PRE-ALLIEDSIGNAL-SB 49-7192); EXAMINE THE CONDITION OF THE LINE FROM THE FAN ISOLATION VALVE TO THE SURGE VALVE. REPAIR THE LINE IF IT IS NECESSARY. IF THE PROBLEM CONTINUES, REPLACE THE SURGE CONTROL VALVE FILTER (AMM 49-53-06/201). EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PIN B10, TO THE FAN VALVE SWITCH CONNECTOR, PIN 1. EXAMINE THE CIRCUIT FROM THE SWITCH CONNECTOR, PIN 2, TO GROUND (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND. IF THERE WAS A HEAT PROBLEM, EXAMINE THE FAN INLET DUCT FOR DAMAGE. REPAIR THE PROBLEMS THAT YOU FIND.
FILTER SW (GEN)	REPLACE THE GENERATOR ΔP SWITCH, YBMS1 (AMM 49-27-15/401). 2 3	EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PIN D11, TO THE FILTER SWITCH CONNECTOR, PIN 1. EXAMINE THE CIRCUIT FROM THE SWITCH CONNECTOR, PIN 2, TO GROUND (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND.
SEE MNT MANUAL	SEE TABLE B	

FAULTY LRU - REFERENCE
TABLE A

APU BITE Procedure
Figure 103 (Sheet 5)

MESSAGE	CORRECTIVE ACTION FOR THE "SEE MNT MANUAL" FAULTY LRU MESSAGE OR "NO DATA" STATUS MESSAGE
NORMAL STOP SIG	FIG. 133
CONTROL FAILURE	REPLACE THE ECU, M206 (AMM 49-61-05/401).
UNDER SPEED	FIG. 106
START ABORTED	FIG. 105
NO LIGHT OFF	FIG. 107
REVERSE FLOW	FIG. 108
EGT OVERTEMP	FIG. 113
DC PWR LOSS	FIG. 138
LOW OIL PRESSURE	FIG. 109
GEN FILTER	FIG. 112
DOOR SYSTEM	FIG. 104, BLOCK 23
FIRE EMERG	LOOK AT THE AIRPLANE LOG BOOK AND THE APU COMPARTMENT FOR SIGNS OF A REPORTED FIRE. IF FIRE DAMAGE SHOWS, REPAIR OR REPLACE THE DAMAGED COMPONENTS. MAKE SURE THAT THE APU CONTROL SWITCH ON THE P5 PANEL IS "OFF" AND MOVE THE MAIN BATTERY SWITCH ON THE P5 PANEL "ON" THEN "OFF. IF THERE IS NO LOG BOOK REPORT OR SIGNS OF FIRE DAMAGE, DO THE BITE PROCEDURE FOR THE APU FIRE DETECTION SYSTEM (FIM 26-15-00/101, FIG. 103). IF THE PROBLEM CONTINUES, REPLACE THE EXTERNAL SHUTDOWN RELAY, K421 (WDM 49-61-11).
O/S TEST CIRCUIT	REPLACE THE ECU, M206 (AMM 49-61-05/401). IF THE PROBLEM CONTINUES AND "FUEL SOL" COMES ON, REPLACE THE FUEL SOLENOID VALVE, YBMV1 (AMM 49-31-02/401).
HIGH OIL TEMP	FIG. 110
OVER SPEED	FIG. 111

REASON APU NOT OPERATING - REFERENCE
TABLE B

APU BITE Procedure
Figure 103 (Sheet 6)

NOTE: THE MINIFLAGS ARE FOR INFORMATION ONLY. DO NOT USE THE MINIFLAG DATA AS AN ALTERNATIVE TO THE FAULT ISOLATION PROCEDURES.

NUMBER	DESCRIPTION
1	SPEED SIGNAL NO. 1 IS NOT FUNCTIONING. THE SPEED SENSOR NO. 1 OR WIRING IS NOT PROVIDING PROPER INPUT AT SPEEDS GREATER THAN 50%.
2	SPEED SIGNAL NO. 2 IS NOT FUNCTIONING. THE SPEED SENSOR NO. 2 OR WIRING IS NOT PROVIDING PROPER INPUT AT SPEEDS GREATER THAN 50%.
3	ECU SPEED CONVERTER CIRCUIT IS FAILED. THE ECU SPEED CONVERTER CIRCUIT DOES NOT INTERPRET THE SPEED SIGNAL PROPERLY WHEN THE APU IS OPERATING AT SPEEDS GREATER THAN 50%.
4	FAILED ECU N/DC CONVERTER NO. 1 CIRCUIT. THE ECU CIRCUIT THAT CONVERTS THE NO. 1 SPEED SIGNAL TO A DC VOLTAGE IS NOT FUNCTIONING PROPERLY.
5	FAILED ECU N/DC CONVERTER NO. 2 CIRCUIT. THE ECU CIRCUIT THAT CONVERTS THE NO. 2 SPEED SIGNAL TO A DC VOLTAGE IS NOT FUNCTIONING PROPERLY.
6	FAILED ECU N/DC CONVERTER NO. 3 CIRCUIT. THE ECU REDUNDANT CIRCUIT THAT CONVERTS THE HIGHEST SPEED SIGNAL TO A DC VOLTAGE IS NOT FUNCTIONING PROPERLY.
7	THIS MINIFLAG IS DISPLAYED ONLY IN THE "SUMMARY" ROTARY SELECT SWITCH POSITION AND INDICATES AIRPLANE FAULTS PER MINIFLAGS 75–78.
9	LCIT SENSOR SIGNAL OUT OF RANGE. THE LCIT SENSOR CIRCUIT READS LESS THAN –100°F.
10	OIL TEMPERATURE SENSOR RESISTANCE OUT OF RANGE. THE OIL TEMPERATURE RESISTANCE IS NOT WITHIN THE RANGE OF 65 TO 208 OHMS (–110 TO +482°F).
11	FAILED EGT THERMOCOUPLE CIRCUIT NO. 1 SIGNAL OUT OF RANGE. THE THERMOCOUPLE CIRCUIT READS LESS THAN –100°F ABSOLUTE OR EGT THERMOCOUPLE NO. 2 READS +150°F MORE THAN EGT NO. 1. SEVERE POWER SECTION DISTRESS CAN ALSO CAUSE A LARGE VARIATION IN EGT NO. 1 AND NO. 2 READINGS.
12	FAILED EGT THERMOCOUPLE CIRCUIT NO. 2 SIGNAL OUT OF RANGE. THE THERMOCOUPLE CIRCUIT READS LESS THAN –100°F ABSOLUTE OR EGT THERMOCOUPLE NO. 1 READS +150°F MORE THAN EGT NO. 2. SEVERE POWER SECTION DISTRESS CAN ALSO CAUSE A LARGE VARIATION IN EGT NO. 1 AND NO. 2 READINGS.
14	FAILED TOTAL PRESSURE SENSOR/CIRCUIT. THE PT VALUE IS OUT OF ITS NORMAL OPERATING RANGE OR DIFFERS BY MORE THAN 3 PSIG FROM THE P2 SENSOR READING ON THE GROUND AT SPEEDS LESS THAN 12%. A MODERATELY SHIFTED P2 SENSOR OUTPUT COULD ALSO CAUSE THIS MINIFLAG. THIS MINIFLAG CAN BE SET BY MINIFLAG 120.
15	FAILED DIFFERENTIAL PRESSURE SENSOR/CIRCUIT. THE DP VALUE IS OUT OF ITS NORMAL OPERATING RANGE OR HAS AN OUTPUT OF LESS THAN 0.25 PSIG WHEN THE IGV POSITION IS 60 DEGREES (MOSTLY OPEN). THIS MINIFLAG CAN BE SET BY MINIFLAG 120.
16	FAILED AMBIENT PRESSURE (P2) SENSOR/CIRCUIT. THE P2 VALUE IS OUT OF ITS NORMAL OPERATING RANGE OR LESS THAN 8 PSIG ON THE GROUND. THIS MINIFLAG CAN BE SET BY MINIFLAG 120.
17	GENERATOR OIL FILTER SWITCH FAILED OPEN. THE NORMALLY CLOSED GENERATOR OIL FILTER SWITCH IS OPEN PRIOR TO APU OPERATION.
18	COOLING FAN ISOLATION VALVE FAILED. THE NORMALLY OPEN COOLING FAN ISOLATION VALVE SWITCH IS CLOSED PRIOR TO OPERATION OR OPEN DURING APU OPERATION.
19	LOP SWITCH CIRCUIT FAILED CLOSED. THE LOP SWITCH CIRCUIT IS CLOSED (SHORTED) PRIOR TO START.
21	ECU FLOW DIVIDER DRIVER SHORTED. +28V DC WAS FOUND ON THE ECU DRIVER WHEN THE DRIVER IS IN THE OFF POSITION. THERE IS A POSSIBLE ECU FAILURE OR A +28V DC EXTERNAL SHORT TO THE DRIVER.
23	ECS DEMAND SIGNAL OUT OF RANGE. THE ECS DEMAND SIGNAL IS LESS THAN –0.3V DC OR GREATER THAN 9.9V DC DURING APU OPERATION IN ECS MODE (MINIFLAG 133).
25	FUEL SOLENOID CIRCUIT FAILED. THE FUEL SOLENOID CIRCUIT IS OPEN OR SHORTED.
26	DEOIL SOLENOID CIRCUIT FAILED. THE DEOIL SOLENOID CIRCUIT IS OPEN OR SHORTED.

ECU MINIFLAG DESCRIPTION
TABLE C

APU BITE Procedure
Figure 103 (Sheet 7)

NUMBER	DESCRIPTION
27	FLOW DIVIDER SOLENOID CIRCUIT FAILED. THE FLOW DIVIDER SOLENOID CIRCUIT IS OPEN OR SHORTED.
28	IGNITION UNIT CIRCUIT FAILED. THE IGNITION UNIT CIRCUIT IS OPEN OR SHORTED.
29	ECU DEOIL SOLENOID DRIVER SHORTED. +28V DC WAS FOUND ON THE ECU DRIVER WHEN THE DRIVER IS IN THE OFF POSITION. THERE IS A POSSIBLE ECU FAILURE OR A +28V DC EXTERNAL SHORT TO THE DRIVER.
30	ECU FUEL SOLENOID DRIVER OPEN. INTERNAL ECU FAILURE WAS FOUND.
32	ECU IGNITION UNIT DRIVER OPEN. INTERNAL ECU FAILURE WAS FOUND.
33	ECU STARTER CIRCUIT DRIVER OPEN. INTERNAL ECU FAILURE WAS FOUND.
34	AIRPLANE STARTER CIRCUIT FAILED. VOLTAGE WAS FOUND AT THE START MOTOR AT GREATER THAN 95% SPEED OR NO START MOTOR VOLTAGE IS FOUND DURING START CYCLE.
35	START MOTOR FAILED. VOLTAGE EXISTS ON THE START MOTOR BUT NO APU ROTATION IS FOUND AFTER 14.5 SECONDS.
36	ECU SCV DRIVER SHORTED. +28V DC WAS FOUND ON THE ECU DRIVER WHEN THE DRIVER IS IN THE OFF POSITION. THERE IS A POSSIBLE ECU FAILURE OR A +28V DC EXTERNAL SHORT TO THE DRIVER.
37	ECU FUEL CONTROL TORQUE MOTOR DRIVER SHORTED. +28V DC WAS FOUND ON THE ECU DRIVER WHEN THE DRIVER IS IN THE OFF POSITION. THERE IS A POSSIBLE ECU FAILURE OR A +28V DC EXTERNAL SHORT TO THE DRIVER.
38	ECU IGV ACTUATOR DRIVER OPEN. INTERNAL ECU FAILURE WAS FOUND.
39	ECU FUEL CONTROL TORQUE MOTOR DRIVER OPEN. INTERNAL ECU FAILURE WAS FOUND.
41	FUEL CONTROL TORQUE MOTOR FAILED. THE FUEL CONTROL TORQUE MOTOR CIRCUIT IS OPEN OR SHORTED.
42	IGV ACTUATOR FAILED. THE IGV TORQUE MOTOR OR LVDT IS SHORTED OR OPEN OR COMMANDED IGV POSITION DOES NOT AGREE WITH ACTUAL IGV POSITION BY 10 DEGREES FOR MORE THAN 6 SECONDS (SEE MINIFLAGS 66,106,126, AND 127 FIRST IF PRESENT).
43	SURGE CONTROL VALVE TORQUE MOTOR FAILED. THE SURGE CONTROL VALVE TORQUE MOTOR CIRCUIT IS OPEN OR SHORTED.
44	ECU EGT NO. 1 SIGNAL CONDITIONER FAILED. INTERNAL ECU FAILURE WAS FOUND.
45	ECU EGT NO. 2 SIGNAL CONDITIONER FAILED. INTERNAL ECU FAILURE WAS FOUND.
46	ECU OVERTEMPERATURE TEST FAILURE. INTERNAL ECU FAILURE WAS FOUND DURING APU SHUTDOWN.
47	INLET DOOR RELAY FAILED. AN OVERCURRENT WAS FOUND ON THE INLET DOOR RELAY CIRCUIT.
48	ECU FAILED. THIS MINIFLAG INDICATES INTERNAL ECU FAILURES AND IS SET BY MINIFLAGS 3-6,21, 29-33,37,39,44,45,46,65,82-89,92-100,105,107,112-119,121-125 OR 128. IT CAN ALSO BE SET BY MINIFLAGS 36 OR 38.
65	ECU HI-WINS SPEED CIRCUIT FAILURE. INTERNAL ECU FAILURE WAS FOUND.
66	IGV POSITION DOES NOT MATCH COMMAND. COMMANDED IGV POSITION DOES NOT AGREE WITH ACTUAL IGV POSITION BY 10 DEGREES FOR MORE THAN 6 SECONDS DURING APU OPERATION.
75	AIRPLANE MAINTENANCE LAMP CIRCUIT OVERCURRENT
76	AIRPLANE BLEED AIR RELAY OVERCURRENT
77	AIRPLANE GENERATOR AVAILABLE RELAY OVERCURRENT
78	AIRPLANE FAULT RELAY OVERCURRENT
82	FUEL TORQUE MOTOR OVERCURRENT. THE FUEL CONTROL TORQUE MOTOR CIRCUIT IS SHORTED.
83	ECU LCIT CONDITIONER FAILED. INTERNAL ECU FAILURE WAS FOUND.

ECU MINIFLAG DESCRIPTION
TABLE C

APU BITE Procedure
Figure 103 (Sheet 8)

NUMBER	DESCRIPTION
84	ECU DEOIL SOLENOID DRIVER FAILED OPEN. INTERNAL ECU FAILURE WAS FOUND.
86	ECU AIRPLANE BLEED RELAY OPEN. INTERNAL ECU FAILURE WAS FOUND.
89	ECU FUEL SOLENOID DRIVER SHORTED. +28V DC WAS FOUND ON THE ECU DRIVER WHEN THE DRIVER IS IN THE OFF POSITION. THERE IS A POSSIBLE ECU FAILURE OR A +28V DC EXTERNAL SHORT TO THE DRIVER.
90	FUEL SOLENOID CIRCUIT OPEN. THIS MINIFLAG SETS MINIFLAG 25.
91	IGNITION UNIT CIRCUIT FAILED OPEN. THIS MINIFLAG SETS MINIFLAG 28.
92	ECU IGNITION UNIT DRIVER SHORTED. +28V DC WAS FOUND ON THE ECU DRIVER WHEN THE DRIVER IS IN THE OFF POSITION. THERE IS A POSSIBLE ECU FAILURE OR A +28V DC EXTERNAL SHORT TO THE DRIVER.
94	ECU BLEED AIR DRIVER SHORTED. +28V DC WAS FOUND ON THE ECU DRIVER WHEN THE DRIVER IS IN THE OFF POSITION. THERE IS A POSSIBLE ECU FAILURE OR A +28V DC EXTERNAL SHORT TO THE DRIVER.
95	ECU FLOW DIVIDER DRIVER OPEN. INTERNAL ECU FAILURE WAS FOUND.
97	ECU STARTER RELAY DRIVER SHORTED. +28V DC WAS FOUND ON THE ECU DRIVER WHEN THE DRIVER IS IN THE OFF POSITION. THERE IS A POSSIBLE ECU FAILURE OR A +28V DC EXTERNAL SHORT TO THE DRIVER.
99	ECU BLEED AIR DRIVER OPEN. INTERNAL ECU FAILURE WAS FOUND.
100	ECU BLEED AIR DRIVER SHORTED. +28V DC WAS FOUND ON THE ECU DRIVER WHEN THE DRIVER IS IN THE OFF POSITION. THERE IS A POSSIBLE ECU FAILURE OR A +28V DC EXTERNAL SHORT TO THE DRIVER.
101	FUEL CONTROL TORQUE MOTOR FAILED OPEN. THE FUEL CONTROL TORQUE MOTOR CIRCUIT IS OPEN CIRCUIT. THIS MINIFLAG SETS MINIFLAG 41.
105	ECU IGV ACTUATOR DRIVER FAILED OPEN. INTERNAL ECU FAILURE WAS FOUND.
106	IGV ACTUATOR TORQUE MOTOR FAILED. THE IGV ACTUATOR TORQUE MOTOR IS FAILED OPEN OR SHORT CIRCUIT.
107	ECU SCV DRIVER FAILED OPEN. INTERNAL ECU FAILURE WAS FOUND.
108	FUEL SOLENOID MECHANICALLY STUCK. THE APU DID NOT SHUTDOWN WHEN THE SOLENOID WAS COMMANDED OFF.
112	ECU MAGNETIC RELAY FAILED. THE ECU MAGNETIC LATCH WAS FOUND FAILED DURING SHUTDOWN.
116	ECU FAILED +15V DC POWER SUPPLY. INTERNAL ECU FAILURE WAS FOUND.
117	ECU FAILED −10V DC POWER SUPPLY. INTERNAL ECU FAILURE WAS FOUND.
118	ECU FAILED −15V DC POWER SUPPLY. INTERNAL ECU FAILURE WAS FOUND.
119	ECU FAILED +5V DC POWER SUPPLY. INTERNAL ECU FAILURE WAS FOUND.
120	ECU PRESSURE REFERENCE POWER SUPPLY FAILED LOW. 0V DC WAS FOUND ON THE REFERENCE POWER SUPPLY. THERE IS A POSSIBLE ECU FAILURE OR AN EXTERNAL SHORT.
121	ECU +10V A/D CONVERTER POWER SUPPLY FAILED LOW. INTERNAL ECU FAILURE WAS FOUND.
122	ECU +10V A/D CONVERTER POWER SUPPLY FAILED HIGH. INTERNAL ECU FAILURE WAS FOUND.
123	ECU 0V A/D CONVERTER REFERENCE FAILED LOW. INTERNAL ECU FAILURE WAS FOUND.
124	ECU 0V A/D CONVERTER REFERENCE FAILED HIGH. INTERNAL ECU FAILURE WAS FOUND.
125	ECU PRESSURE REFERENCE POWER SUPPLY FAILED HIGH. INTERNAL ECU FAILURE WAS FOUND.

ECU MINIFLAG DESCRIPTION
TABLE C

APU BITE Procedure
Figure 103 (Sheet 9)

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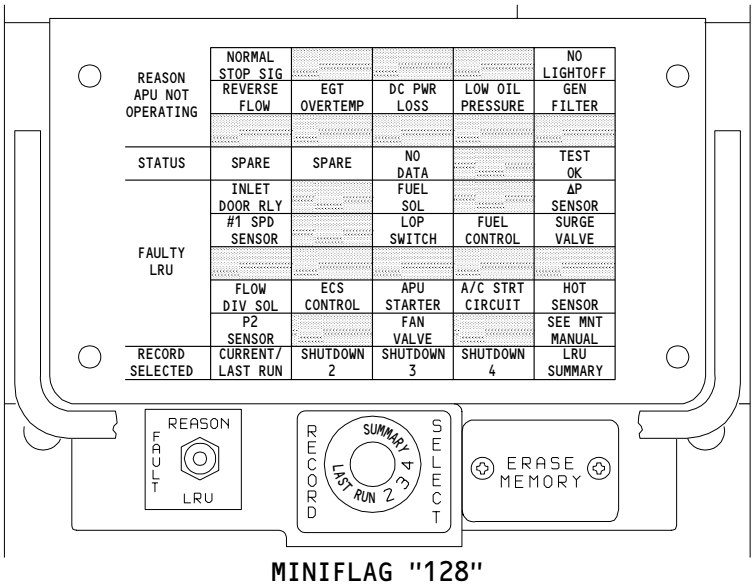
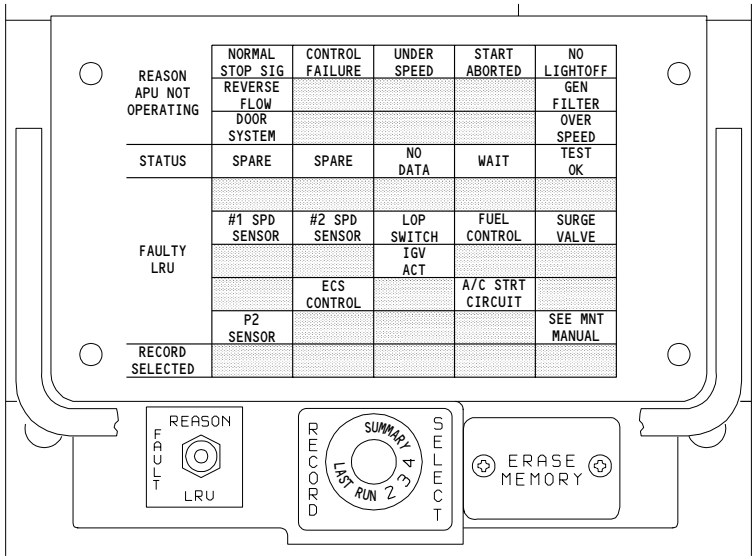
NUMBER	DESCRIPTION
126	IGV ACTUATOR LVDT VOLTAGE OUT OF RANGE. THE IGV ACTUATOR LVDT VOLTAGE IS OUT OF ITS EXPECTED RANGE.
127	IGV ACTUATOR LVDT SECONDARY VOLTAGE OUT RANGE. THE IGV ACTUATOR LVDT SECONDARY VOLTAGE IS OUT OF ITS EXPECTED RANGE.
128	IGV ACTUATOR LVDT PRIMARY VOLTAGE OUT OF RANGE. THE IGV ACTUATOR LVDT PRIMARY VOLTAGE IS OUT OF ITS EXPECTED RANGE.
	DIAGNOSTIC MINIFLAGS ACTIVE DURING APU OPERATION
130	DUCT PRESSURIZATION MODE ACTIVE. THE APU IS CURRENTLY OPERATING IN DUCT PRESSURIZATION MODE.
131	ADP MODE ACTIVE. THE APU IS CURRENTLY OPERATING IN AIR DRIVEN PUMP MODE.
132	INFLIGHT OPERATION MODE ACTIVE. THE APU IS CURRENTLY OPERATING IN IN-FLIGHT OPERATION MODE.
133	ECS MODE ACTIVE. THE APU IS CURRENTLY OPERATING IN ECS MODE.
134	MES MODE ACTIVE. THE APU IS CURRENTLY OPERATING IN MAIN ENGINE START MODE.
140	SCV IS COMMANDED CLOSED. THE SURGE CONTROL VALVE TORQUE MOTOR COMMAND IS GREATER THAN 95 MILLIAMPS.
141	SCV IS COMMANDED OPEN. THE SURGE CONTROL VALVE TORQUE MOTOR COMMAND IS LESS THAN 10 MILLIAMPS.
142	IGV POSITION DOES NOT AGREE WITH COMMANDED POSITION. THE ACTUAL IGV POSITION IS CURRENTLY AT LEAST 5 DEGREES DIFFERENT THAN THE COMMANDED POSITION.
143	APU IS OPERATING ON EGT TEMPERATURE TRIM. THE APU IS OPERATING ON EGT TEMPERATURE TRIM WHICH INDICATES A DETERIORATED POWER SECTION WHICH CAN RESULT IN REDUCED PNEUMATIC OUTPUT.

ECU MINIFLAG DESCRIPTION
TABLE C

APU BITE Procedure
Figure 103 (Sheet 10)



MINIFLAG "128"
(EXAMPLE OF A MINIFLAG DISPLAY ON ECU)



MINIFLAG "OK"
(EXAMPLE OF A MINIFLAG DISPLAY ON ECU)

APU BITE Procedure
Figure 103 (Sheet 11)

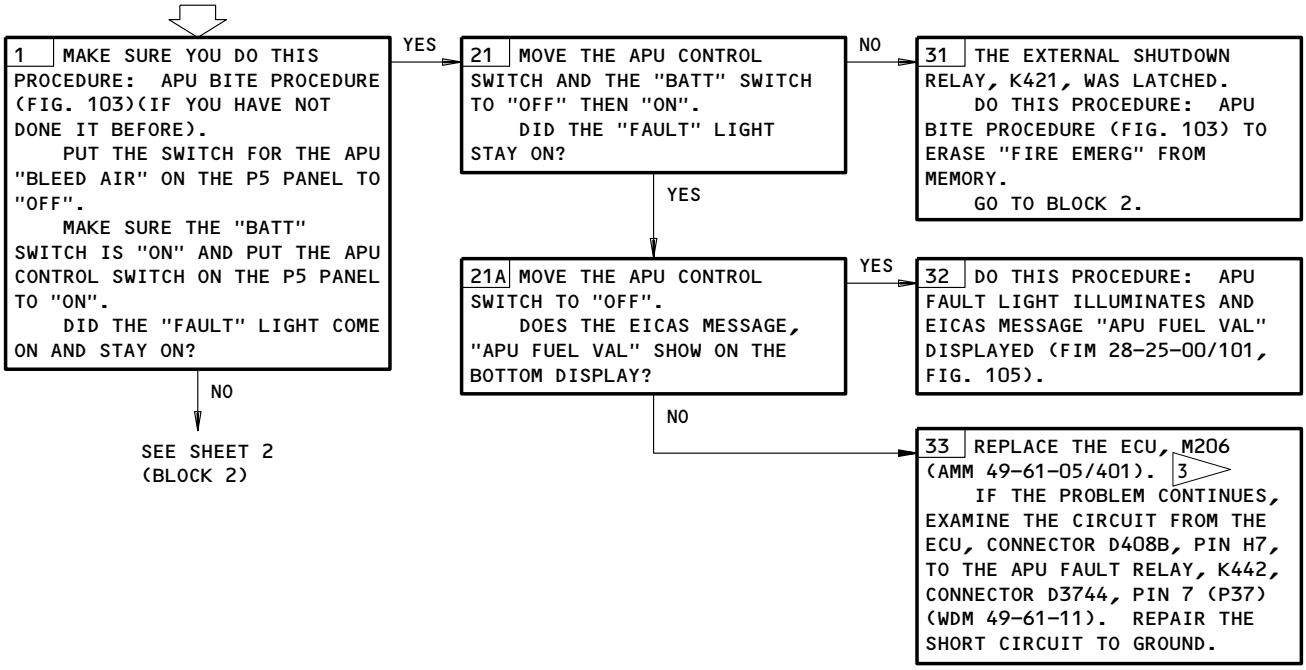
APU STARTING PROBLEMS

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 4>,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)



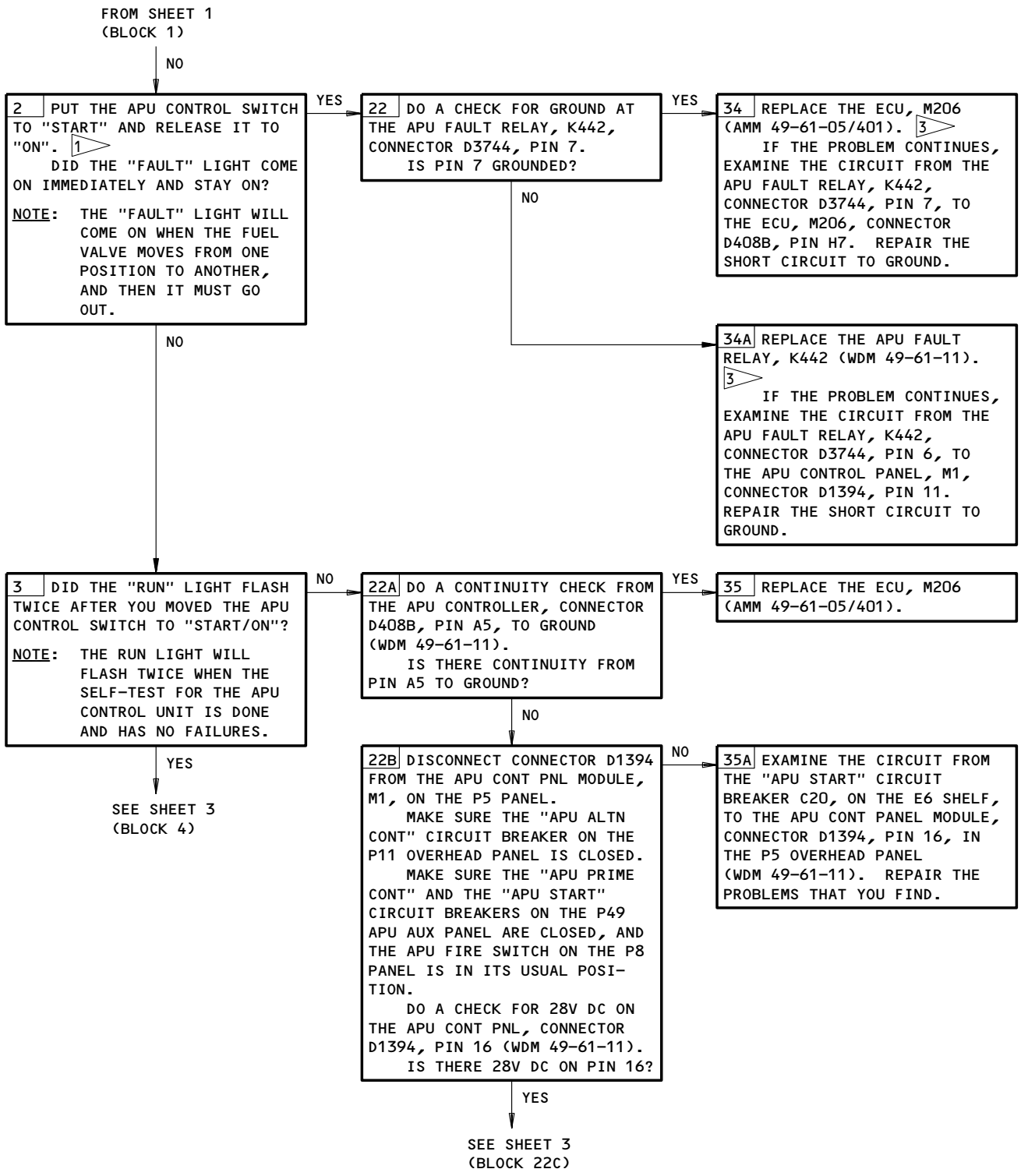
1> WHEN YOU START THE APU, LOOK AT THE APU BATTERY VOLTAGE AND THE CURRENT ON THE EICAS "ELEC/HYD" DISPLAY. LOOK AT THE APU RPM AND THE EGT ON THE EICAS "PERF/APU" DISPLAY.

2> PUSH THE "ECS/MSG" SWITCH ON THE EICAS PANEL, P61, AND MAKE SURE "APU DOOR" MESSAGE DOES NOT SHOW.

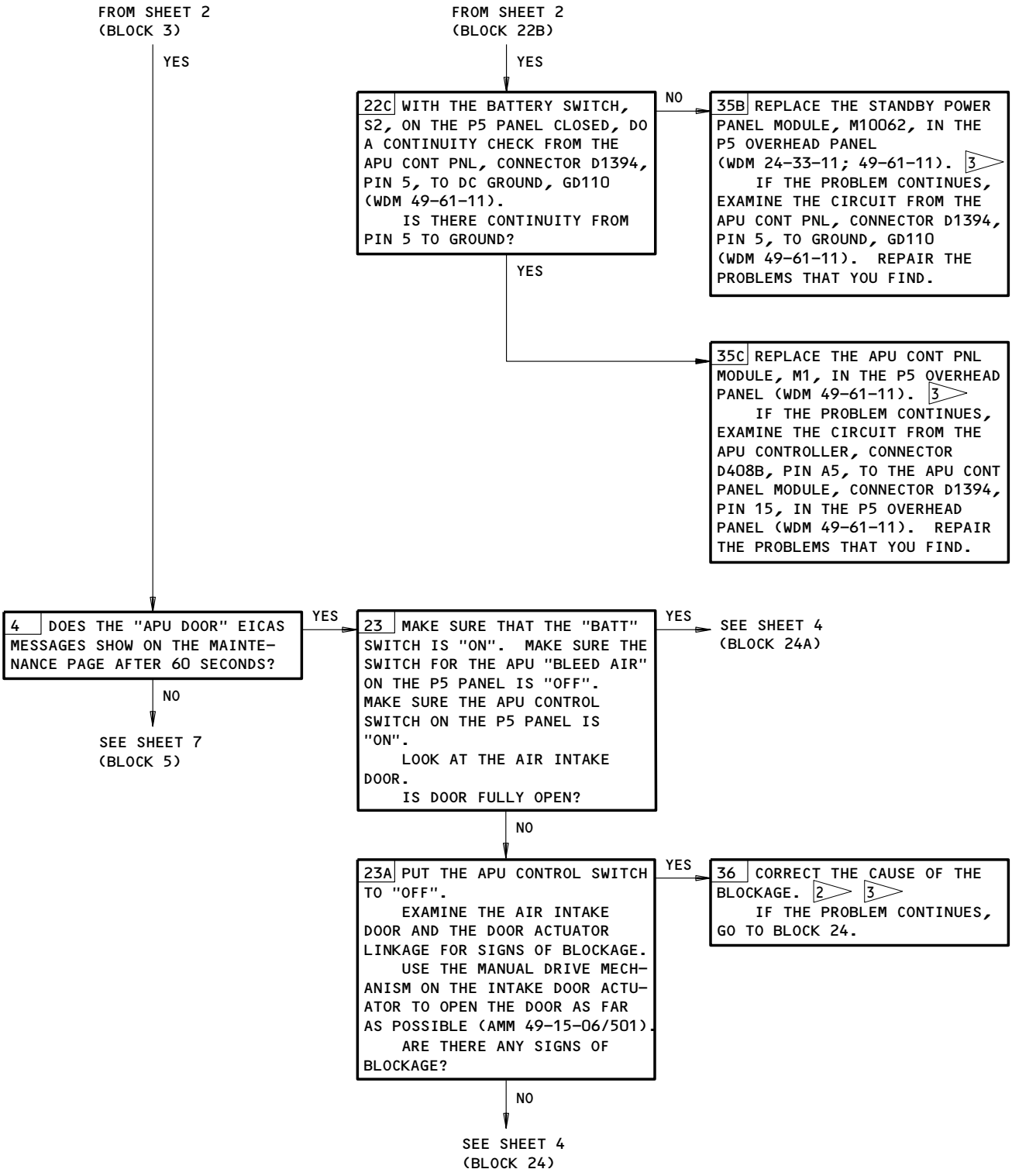
3> OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

4> AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

APU Starting Problems
Figure 104 (Sheet 1)



APU Starting Problems
Figure 104 (Sheet 2)



APU Starting Problems
Figure 104 (Sheet 3)

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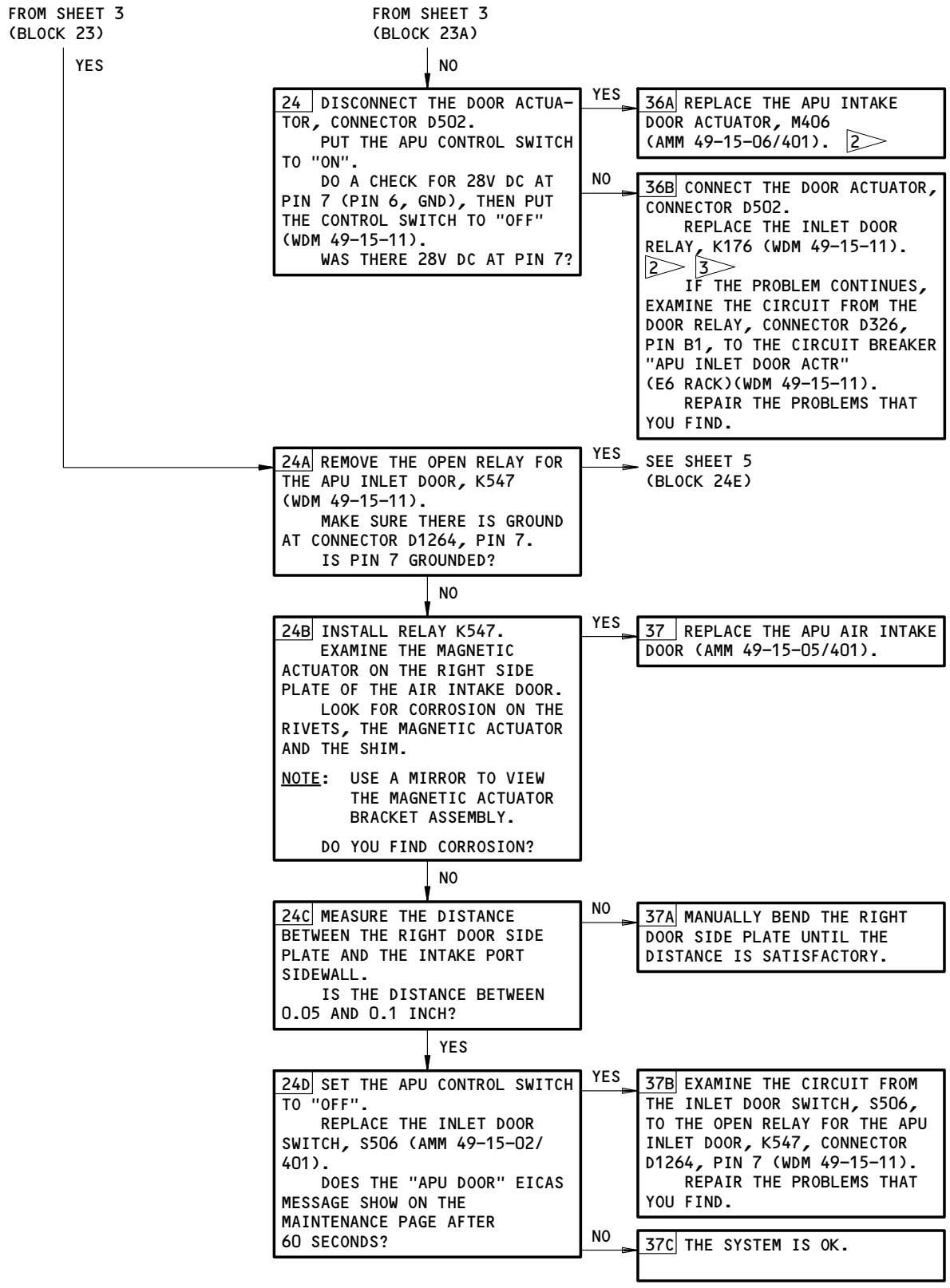
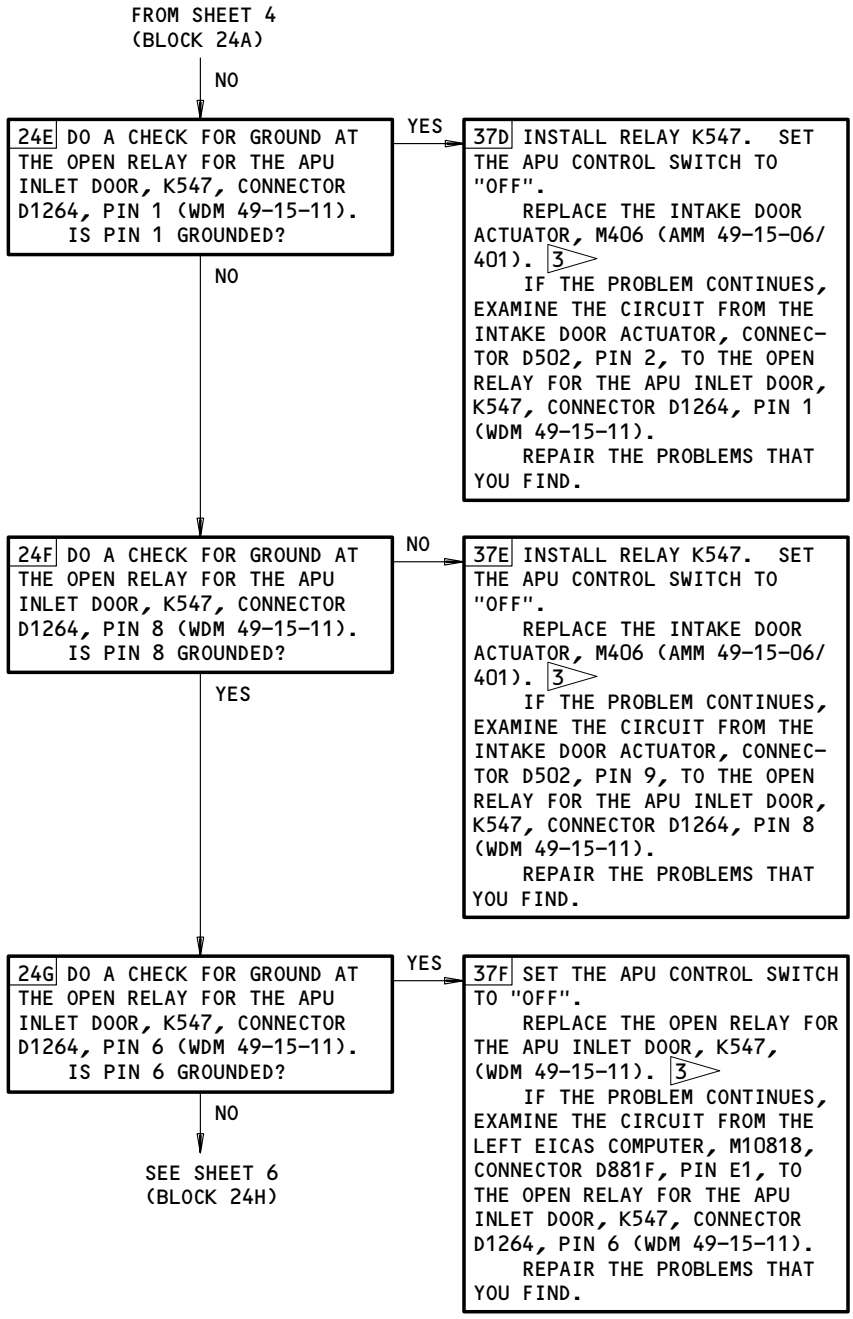
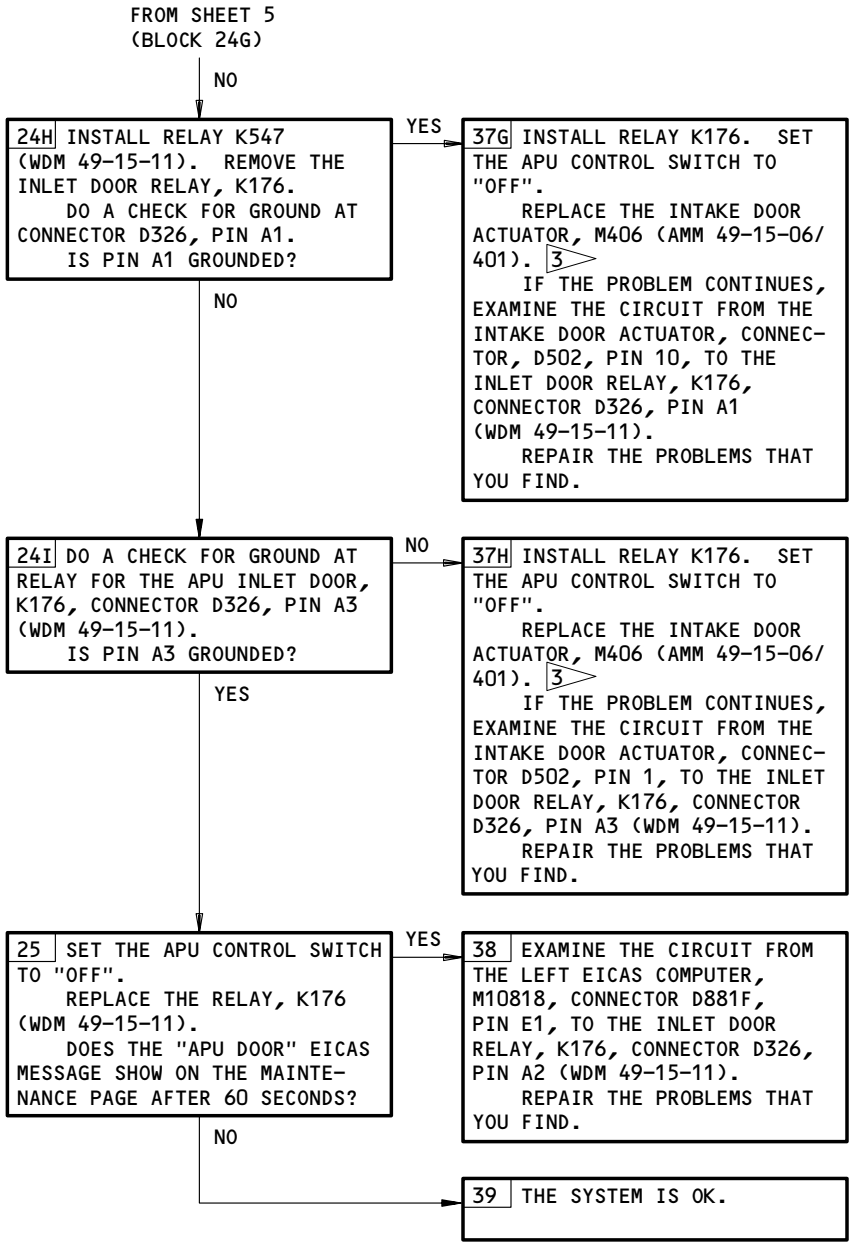


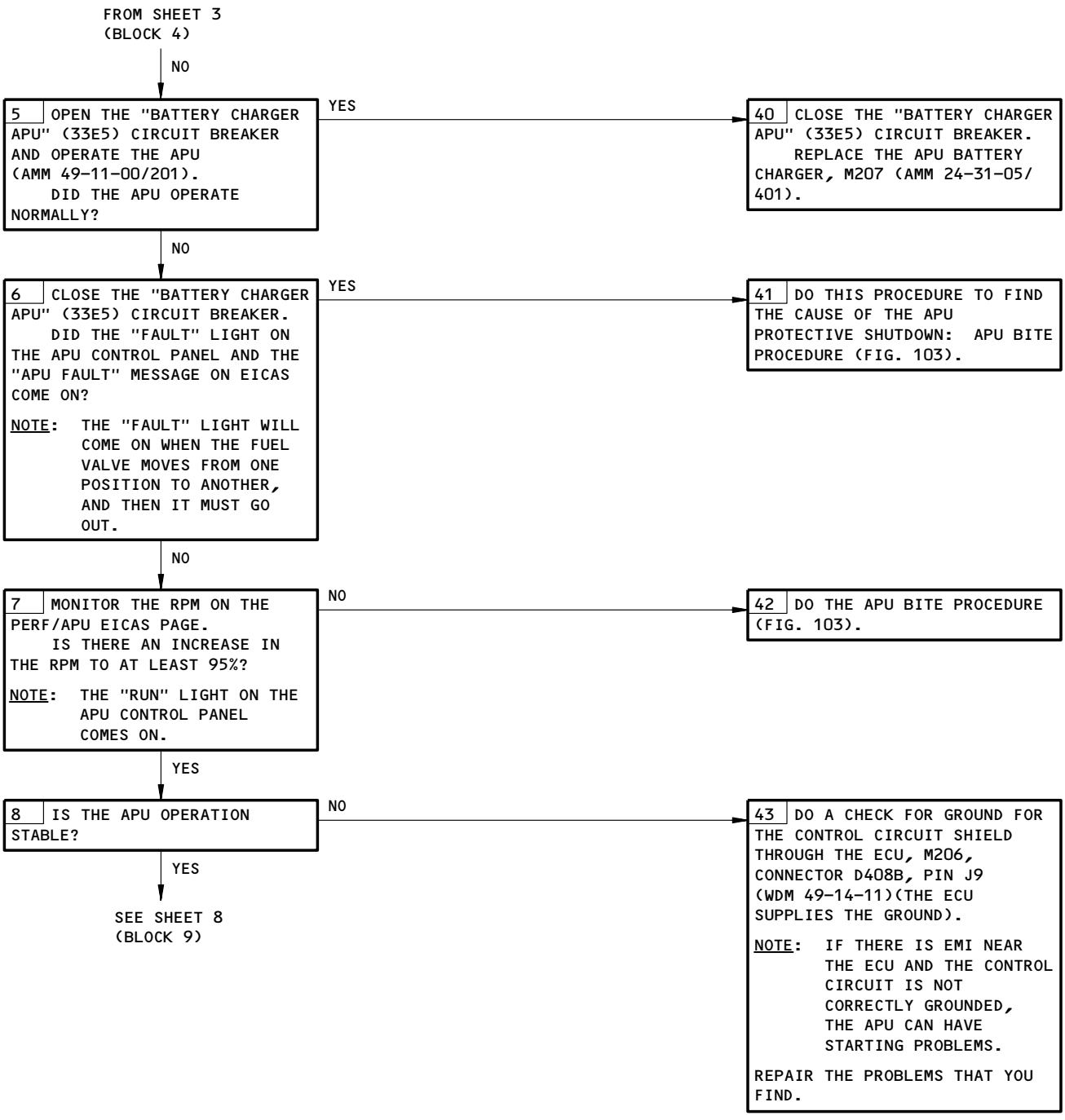
APU Starting Problems
Figure 104 (Sheet 4)



APU Starting Problems
Figure 104 (Sheet 5)

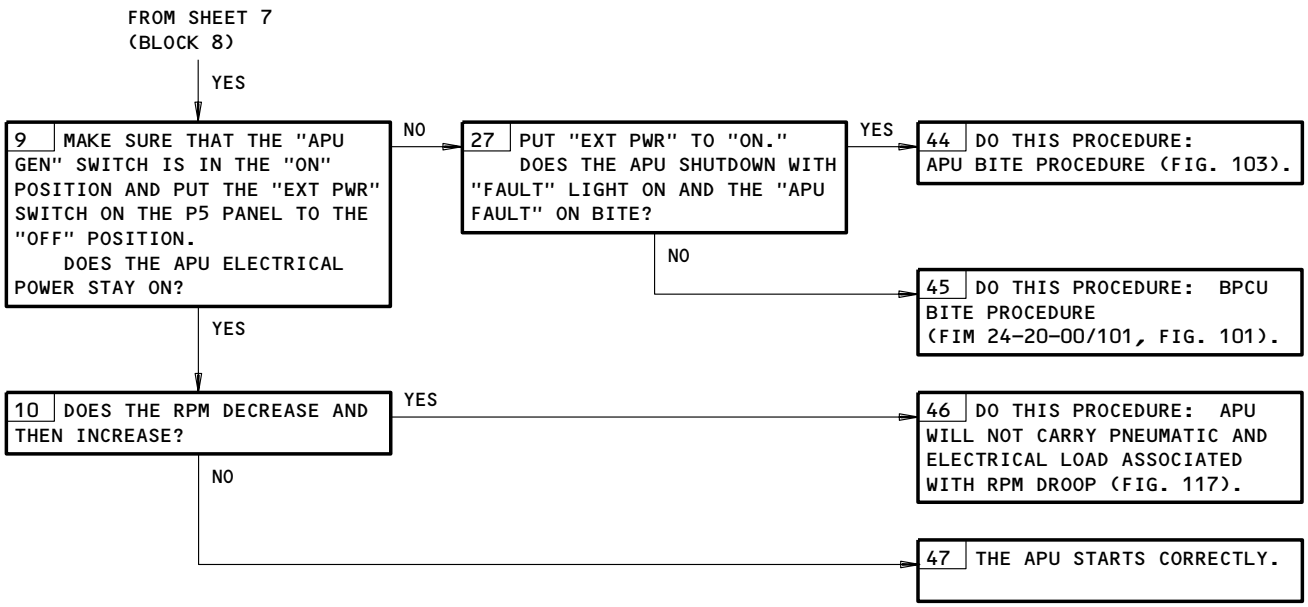


APU Starting Problems
Figure 104 (Sheet 6)



APU Starting Problems
Figure 104 (Sheet 7)

E61458



APU Starting Problems
Figure 104 (Sheet 8)

AUTO SHUTDOWN – "START ABORTED" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [3], APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
DOES THE "LOW OIL PRESSURE" OR THE "HIGH OIL TEMP" LIGHT SHOW IN THE "RECORD SELECT" SWITCH POSITIONS 2 THRU 4?

YES → 41 IF THE "LOW OIL PRESSURE" LIGHT CAME ON, DO THIS PROCEDURE: AUTO SHUTDOWN – LOW OIL PRESSURE ON BITE (FIG. 109).
IF THE "HIGH OIL TEMP" LIGHT CAME ON, DO THIS PROCEDURE: AUTO SHUTDOWN – HIGH OIL TEMP ON BITE (FIG. 110).

NO

2 DID YOU TRY TO START THE APU AFTER A LONG FLIGHT (MORE THAN 2.5 HOURS)?

YES → 21 DO THIS PROCEDURE: APU STARTING PROBLEMS (FIG. 104).
WAS IT NORMAL?

YES → 42 EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D1796B, PIN J10, TO THE STARTER MOTOR, M893, AND FROM THE STARTER MOTOR, M893, TO THE DE-OIL SOLENOID VALVE, YBMM3, CONNECTOR PIN 1 BY ADDING A JUMPER BETWEEN CONNECTOR PINS 1 AND 2 ON THE DE-OIL (LOW OIL) TEMPERATURE SWITCH, YBMS5 (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND.
IF THE PROBLEM CONTINUES, REPLACE THE LOW OIL TEMPERATURE SWITCH, YBMS5 (AMM 49-27-14/401). [1]

NO

22 DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103).
DID THE "START ABORTED" LIGHT COME ON AGAIN?

YES → 43 GO TO BLOCK 3.

NO → 44 DO THE "CORRECTIVE ACTION IN FIG. 103, TABLE B.

NO

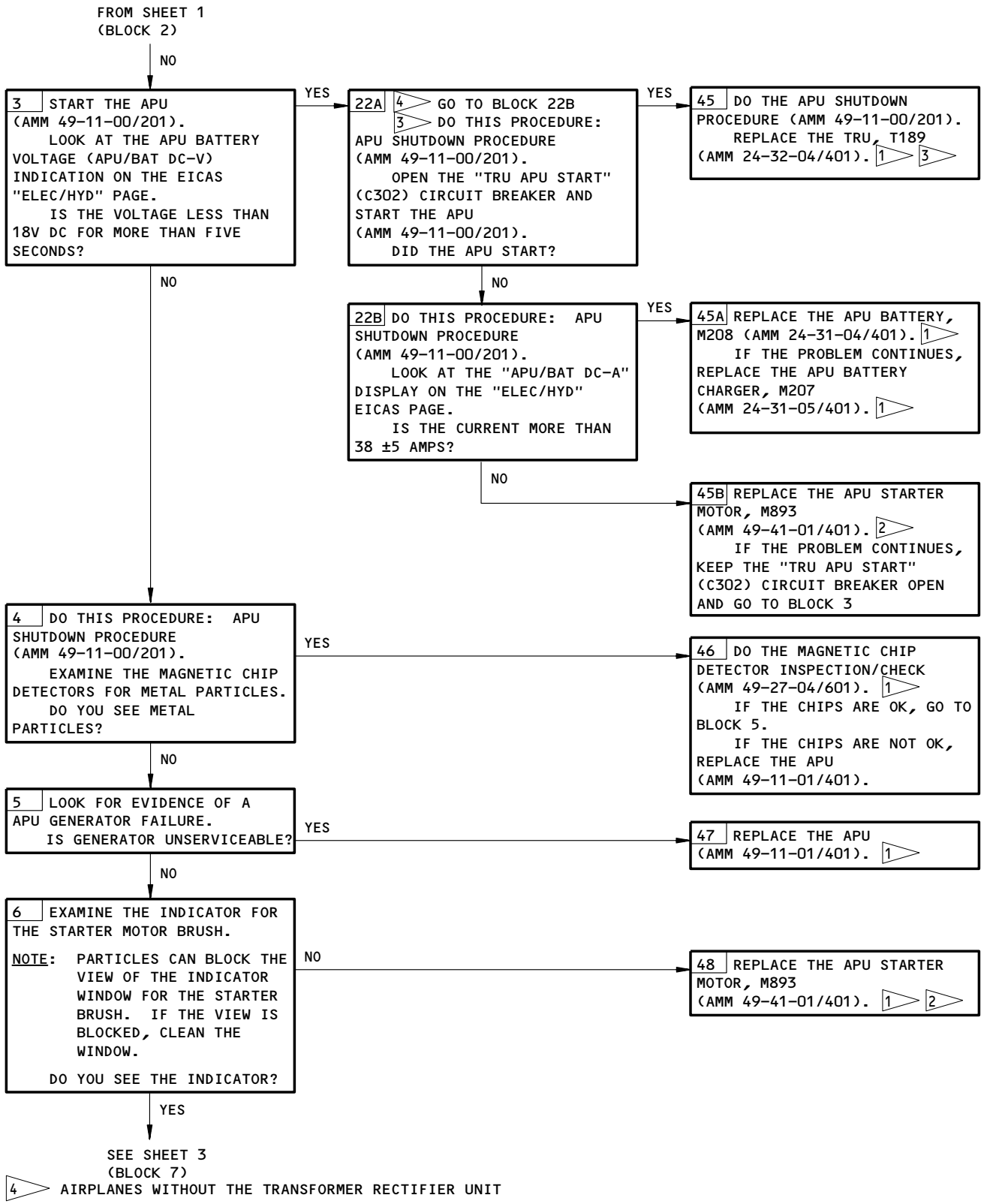
SEE SHEET 2
(BLOCK 3)

[1] AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

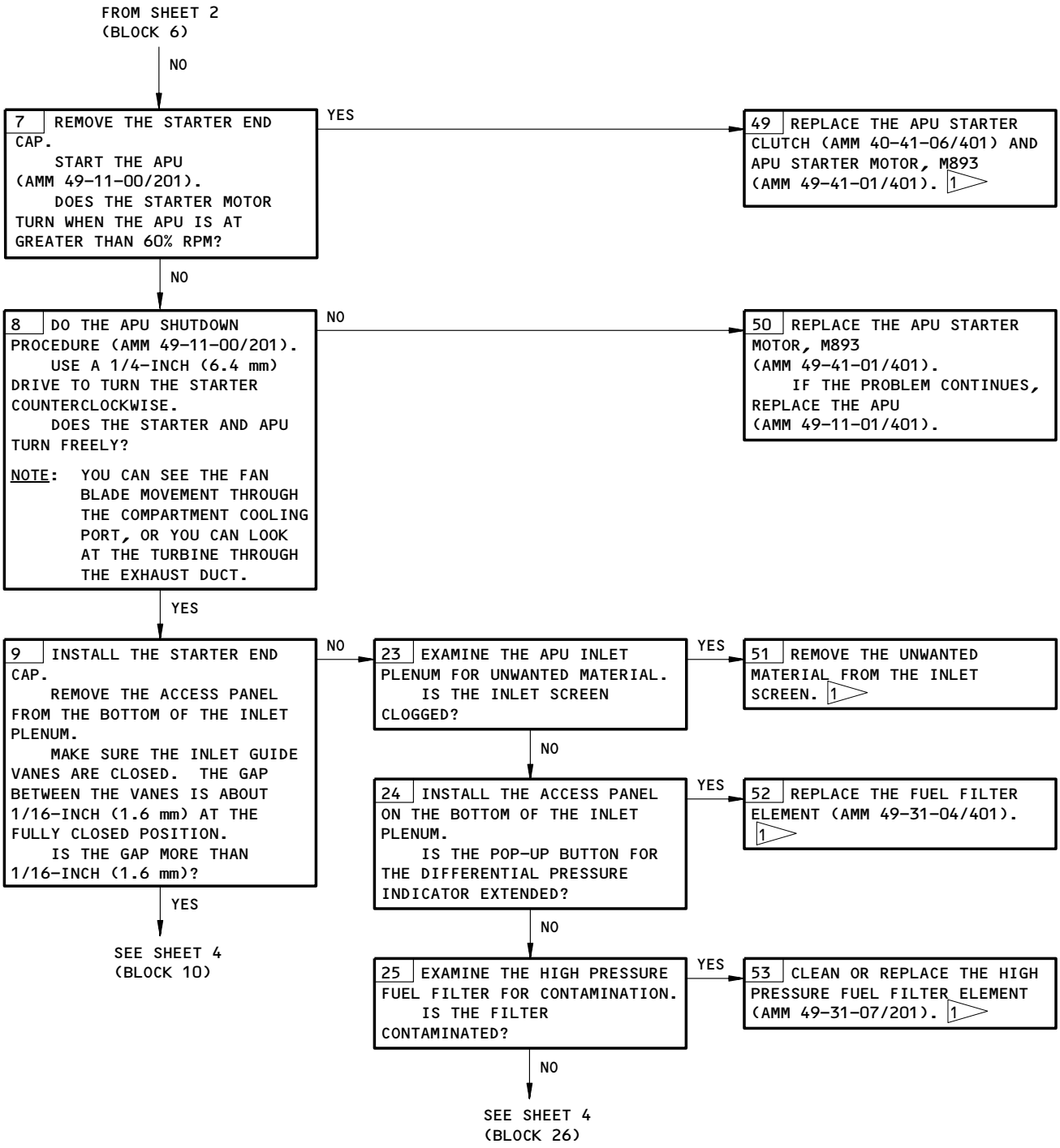
[2] IF TWO APU STARTER MOTORS ARE REPLACED IN LESS THAN 30 DAYS, REPLACE THE APU STARTER MOTOR, M893 (AMM 49-41-01/401), AND THE APU STARTER CLUTCH (AMM 49-41-06/401).

[3] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

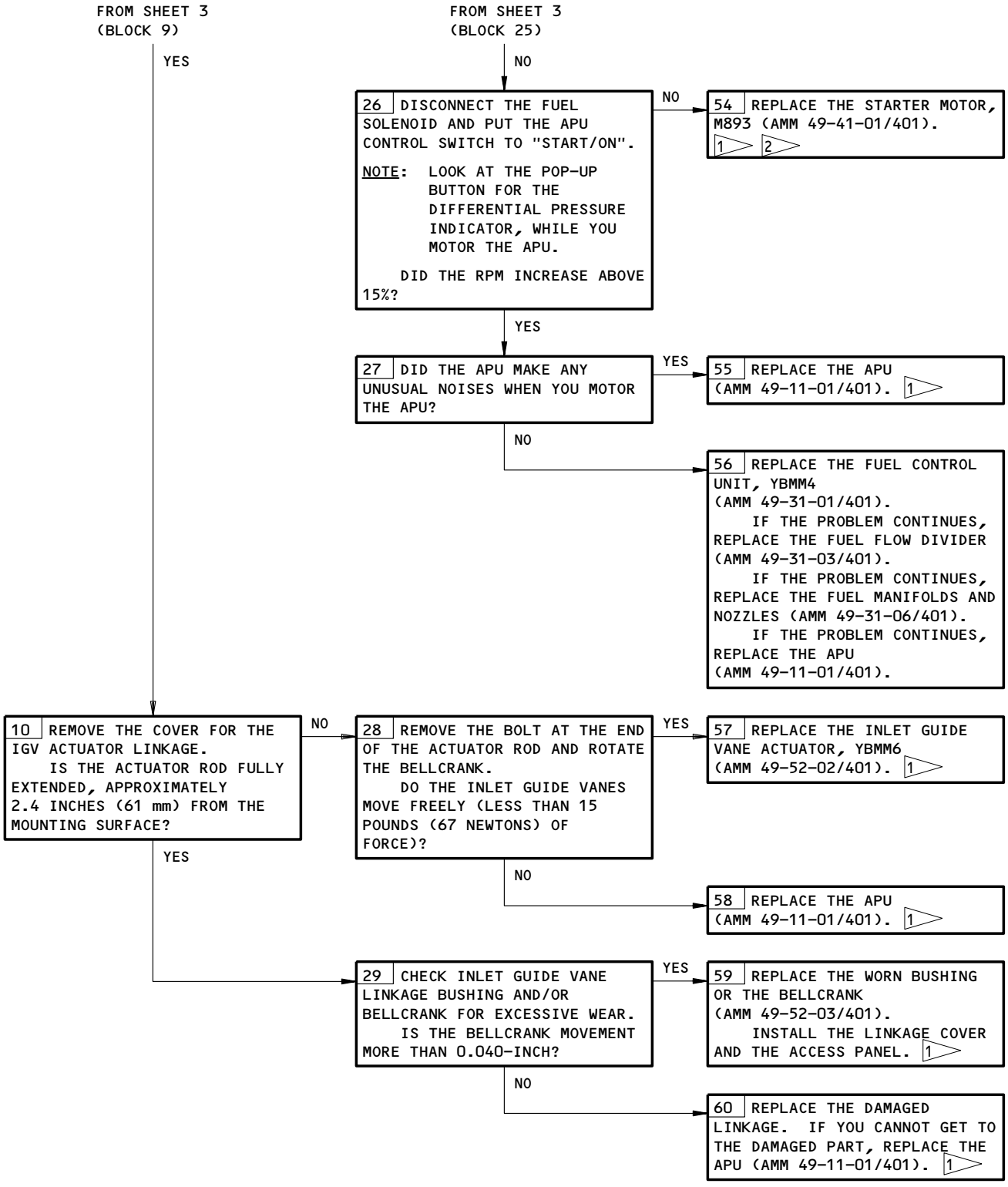
Auto Shutdown – START ABORTED on BITE
Figure 105 (Sheet 1)



Auto Shutdown - START ABORTED on BITE
Figure 105 (Sheet 2)



Auto Shutdown - START ABORTED on BITE
Figure 105 (Sheet 3)



Auto Shutdown - START ABORTED on BITE
Figure 105 (Sheet 4)

AUTO SHUTDOWN – "UNDER SPEED" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 ▷4◁,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
DOES THE "LOW OIL PRESSURE" OR THE "HIGH OIL TEMP" LIGHT COME ON IN THE "RECORD SELECT" SWITCH POSITIONS 2 THRU 4?

YES → 41 IF THE "LOW OIL PRESSURE" LIGHT IS ON, DO THIS PROCEDURE: AUTO SHUTDOWN – LOW OIL PRESSURE ON BITE (FIG. 109).
IF THE "HIGH OIL TEMP" LIGHT IS ON, DO THIS PROCEDURE: AUTO SHUTDOWN – HIGH OIL TEMP ON BITE (FIG. 110).

NO

2 REMOVE THE MAGNETIC CHIP DETECTOR FROM THE GENERATOR SCAVENGE PORT.
DOES MORE THAN 1 PINT OF OIL DRAIN FROM THE PORT, OR IS THE POP-UP BUTTON FOR THE DIFFERENTIAL PRESSURE INDICATOR FOR THE GENERATOR EXTENDED?

YES → 21 WARNING

IF YOU THINK THERE IS A FAILURE IN THE GENERATOR SCAVENGE SYSTEM, DO NOT STAND NEAR THE APU WHEN IT IS STARTED. IF YOU DO NOT OBEY THESE INSTRUCTIONS, AN INJURY CAN OCCUR.

VISUALLY EXAMINE THE GENERATOR FOR A FAILURE.
DOES THE GENERATOR HAVE A FAILURE?

NO → 42 REPLACE THE OIL PRESSURE ELEMENT AND THE SCAVENGE FILTER ELEMENT (AMM 49-27-03/401).
REPLACE THE SCAVENGE OIL PUMP FOR THE GENERATOR (AMM 49-27-02/401).
REPLACE THE APU GENERATOR (AMM 24-21-01/401).
CHANGE THE APU OIL (AMM 49-27-00/301). ▷1◁

YES → 43 REPLACE THE APU ▷1◁ (AMM 49-11-01/401).

NO

SEE SHEET 2 (BLOCK 3)

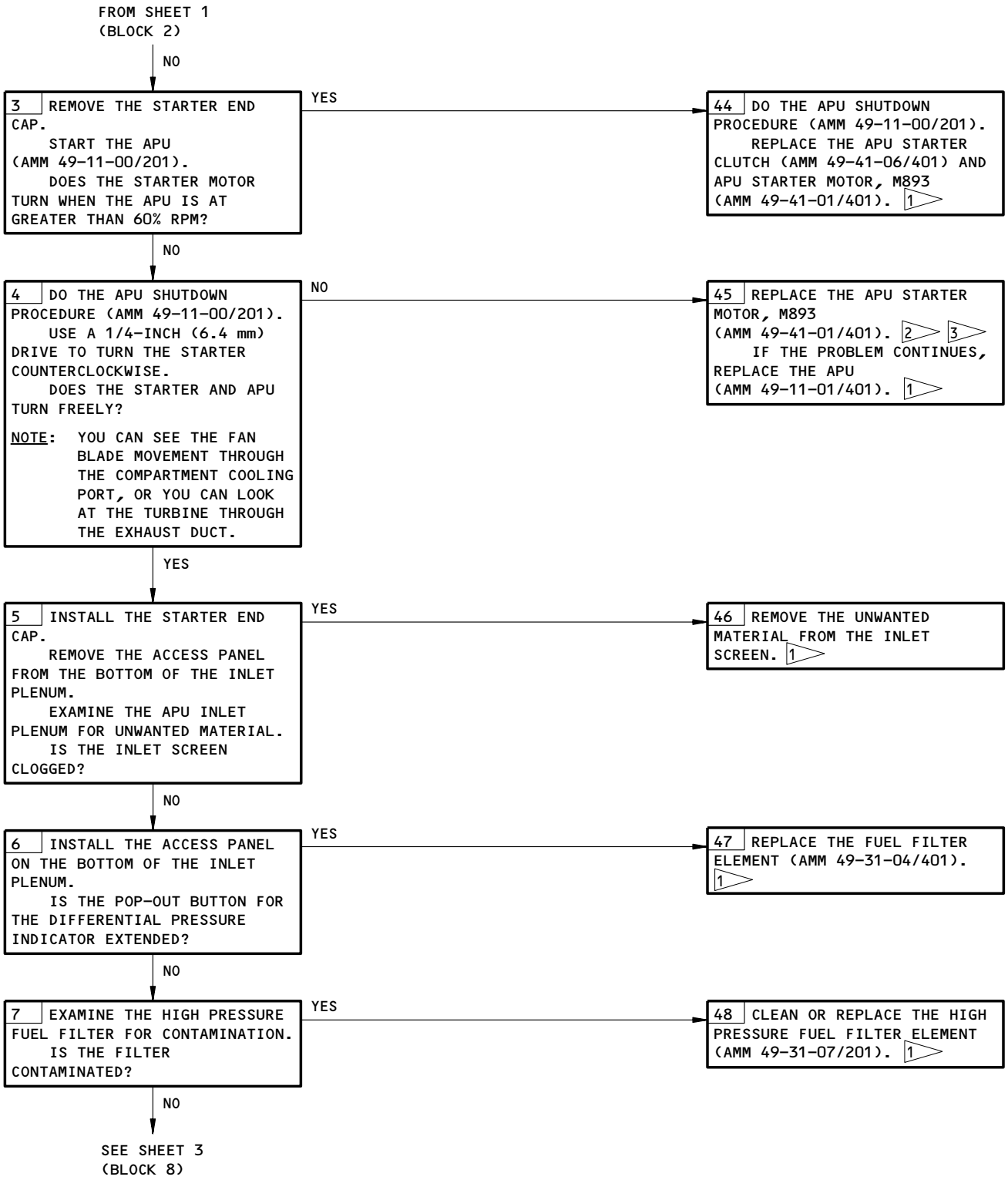
▷1◁ AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

▷2◁ IF TWO APU STARTER MOTORS ARE REPLACED IN LESS THAN 30 DAYS, REPLACE THE APU STARTER MOTOR, M893 (AMM 49-41-01/401), AND THE APU STARTER CLUTCH (AMM 49-41-06/401).

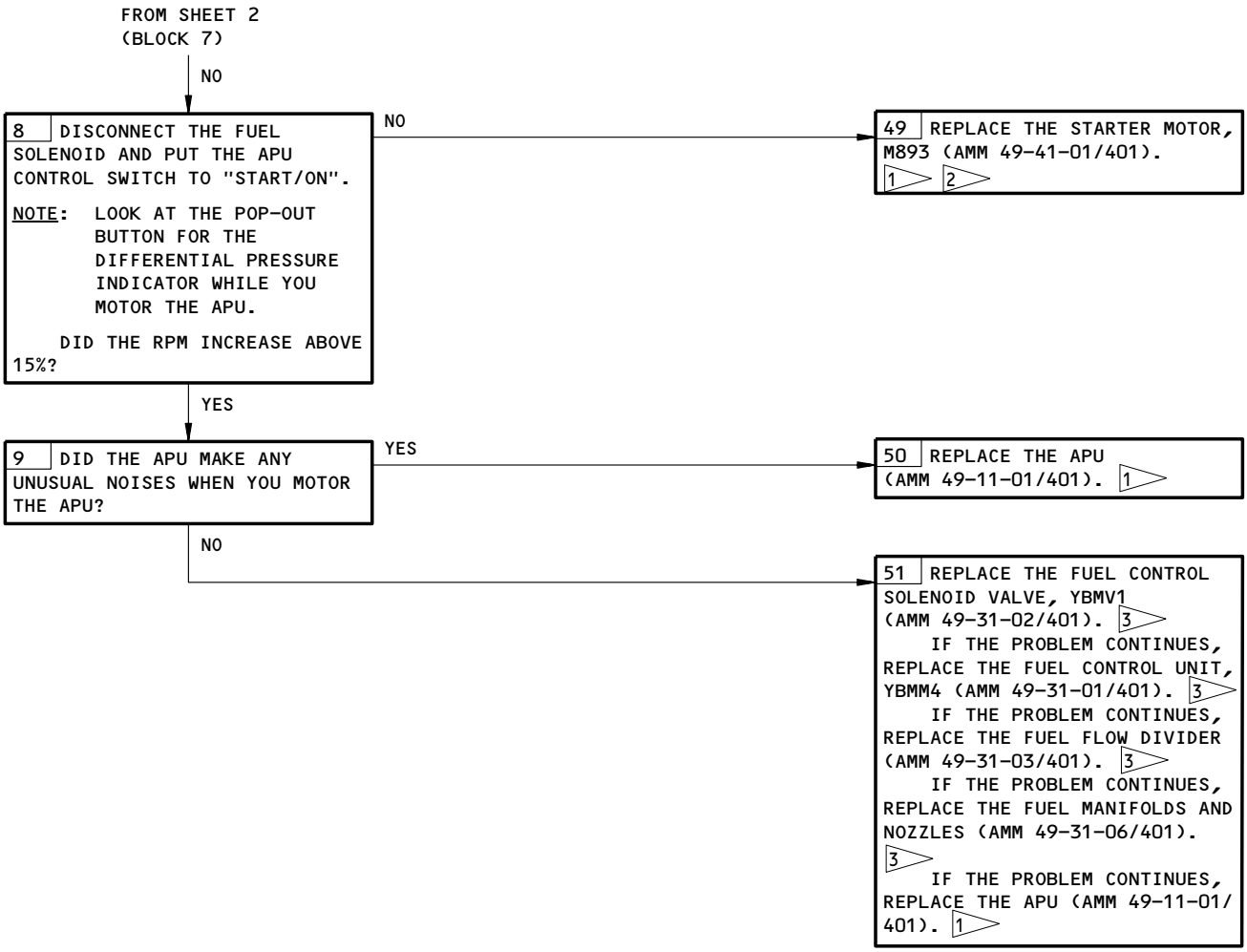
▷3◁ OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

▷4◁ AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Auto Shutdown – UNDER SPEED on BITE
Figure 106 (Sheet 1)



Auto Shutdown - UNDER SPEED on BITE
Figure 106 (Sheet 2)



Auto Shutdown - UNDER SPEED on BITE
Figure 106 (Sheet 3)

PREREQUISITES

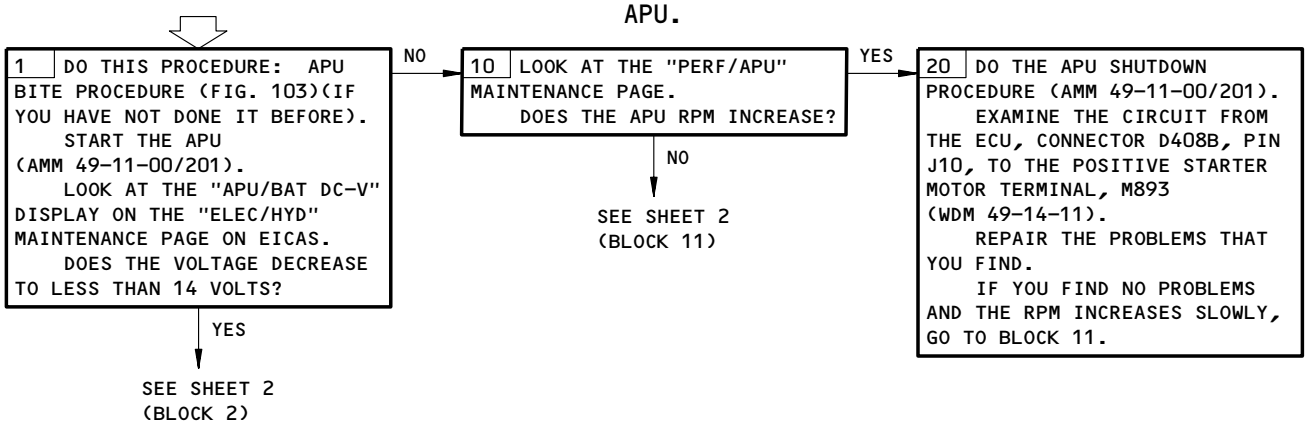
MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, APU PRIME CONT (49C2), APU START (49C3), APU INLET DR ACT (49C4)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

FAULTY LRU - "A/C STRT CIRCUIT" ON BITE

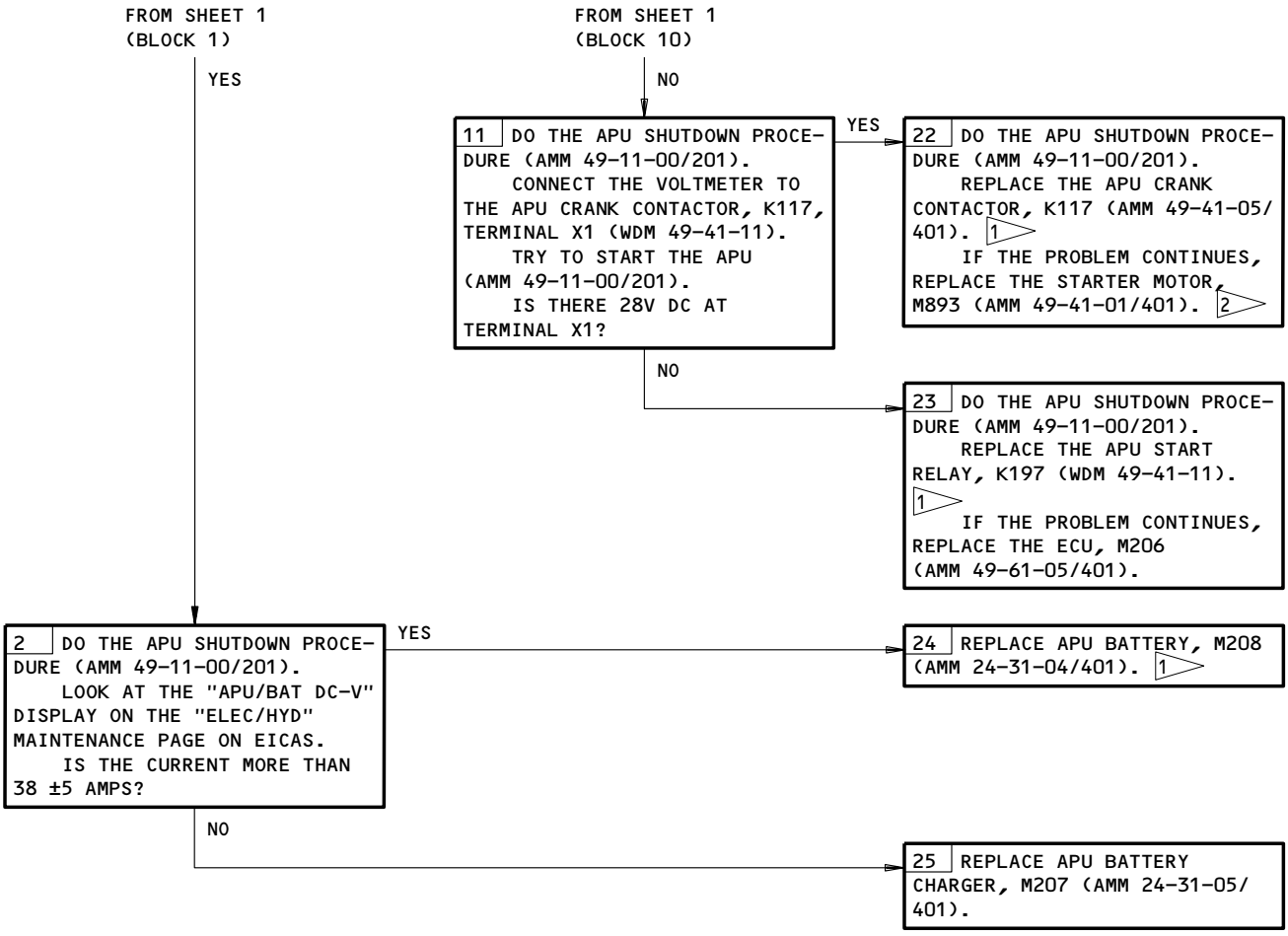
CAUTION: MAKE SURE YOU OBEY THE STARTER DUTY CYCLE IN THE APU OPERATION LIMITS (AMM 49-11-00/201). IF YOU DO NOT OBEY THESE INSTRUCTIONS, YOU CAN CAUSE DAMAGE TO THE APU.



1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

2 IF TWO APU STARTER MOTORS ARE REPLACED IN LESS THAN 30 DAYS, REPLACE THE APU STARTER MOTOR, M893 (AMM 49-41-01/401), AND THE APU STARTER CLUTCH (AMM 49-41-06/401).

Faulty LRU - A/C STRT CIRCUIT on BITE
Figure 106A (Sheet 1)



Faulty LRU - A/C STRT CIRCUIT on BITE
Figure 106A (Sheet 2)

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

CAUTION: MAKE SURE YOU OBEY THE STARTER DUTY CYCLE IN THE APU OPERATION LIMITS (AMM 49-11-00/ 201). IF YOU DO NOT OBEY THESE INSTRUCTIONS, YOU CAN CAUSE DAMAGE TO THE APU.

FAULTY LRU - "A/C STRT CIRCUIT" ON BITE

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
START THE APU (AMM 49-11-00/201).
LOOK FOR THE APU RPM TO INCREASE ON THE "PERF/APU" EICAS PAGE.
DOES THE RPM INCREASE?

YES → 21 DO THE APU SHUTDOWN PROCEDURE (AMM 49-11-00/201).
EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D049B, PIN J10, TO THE POSITIVE TERMINAL ON THE STARTER MOTOR, M893 (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND.
IF YOU FIND NO PROBLEMS AND THE RPM INCREASES SLOWLY, GO TO BLOCK 2.

NO ↓

2 DO THE APU SHUTDOWN PROCEDURE (AMM 49-11-00/201).
OPEN THE CIRCUIT BREAKER APU START TRU START CONT, 11T35.
START THE APU (AMM 49-11-00/201).
LOOK FOR THE APU RPM TO INCREASE ON THE "PERF/APU" EICAS PAGE.
DOES THE RPM INCREASE?

NO → 22 DO THE APU SHUTDOWN PROCEDURE (AMM 49-11-00/201).
REPLACE THE APU START RELAY, K197 (WDM 24-32-41). 1
IF THE PROBLEM CONTINUES, REPLACE THE ECU, M206 (AMM 49-61-05/401).
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE APU CRANK CONTACTOR, K117, PIN A1, TO THE POSITIVE TERMINAL FOR THE STARTER MOTOR, M893 (WDM 49-41-11). REPAIR THE PROBLEMS THAT YOU FIND.
IF THE PROBLEM CONTINUES, REPLACE THE STARTER MOTOR (AMM 49-41-01/401). 2

YES ↓

SEE SHEET 2
(BLOCK 11)

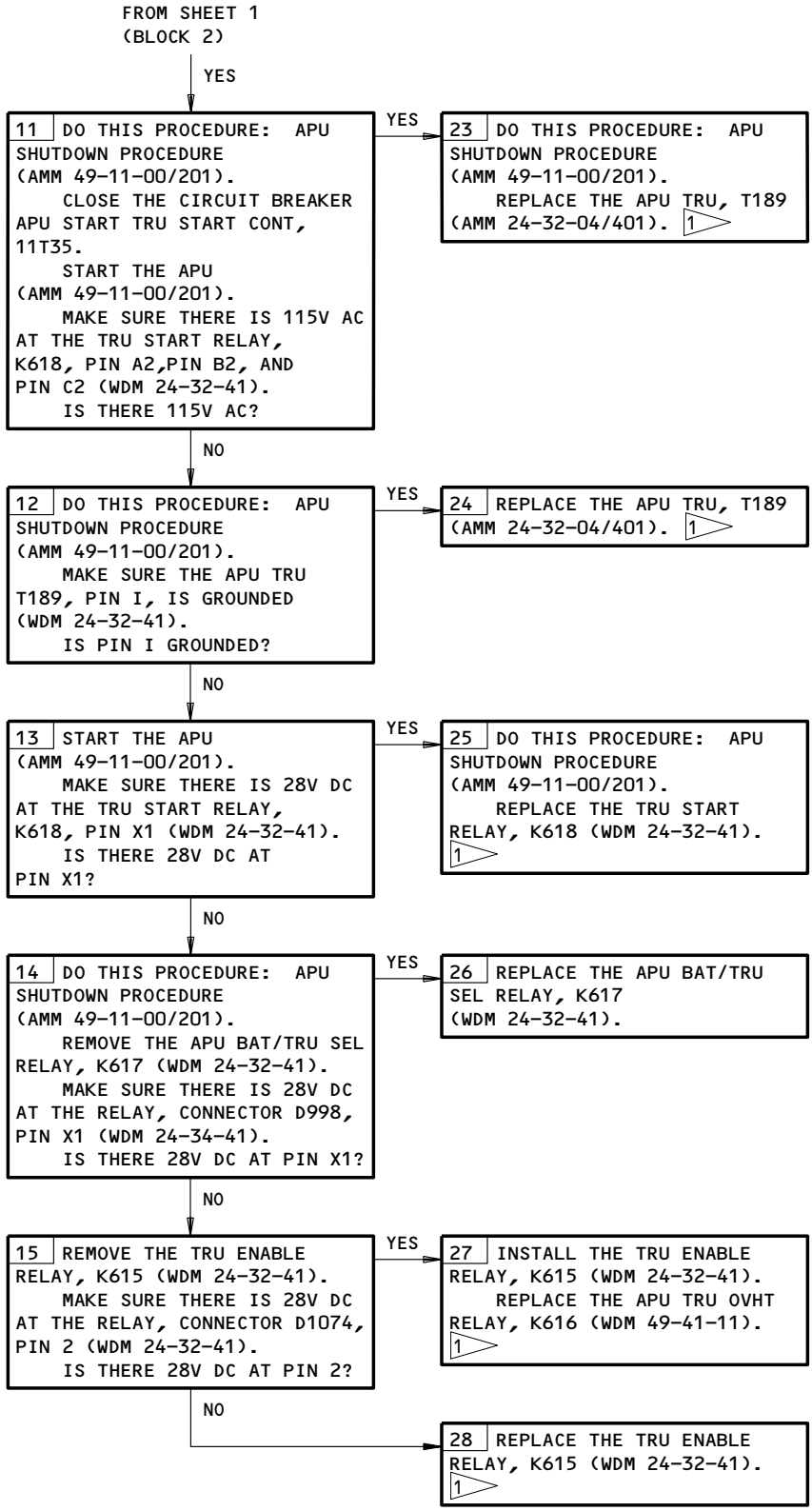
1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

2 IF TWO APU STARTER MOTORS ARE REPLACED IN LESS THAN 30 DAYS, REPLACE THE APU STARTER MOTOR, M893 (AMM 49-41-01/401), AND THE APU STARTER CLUTCH (AMM 49-41-06/401).

Faulty LRU - A/C STRT CIRCUIT on BITE
Figure 106B (Sheet 1)

EFFECTIVITY
AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

L16848



Faulty LRU - A/C STRT CIRCUIT on BITE
Figure 106B (Sheet 2)

L16849

AUTO SHUTDOWN – "NO LIGHT OFF" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 3, APU PRIME CONT (P49), APU START (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
START THE APU (AMM 49-11-00/201).
DO NOT DISCONNECT THE PRIMARY LEAD, ABOVE 7% RPM (AMM 49-11-00/201).
CAN YOU HEAR THE IGNITER PLUG?

NO → 11 MAKE SURE THESE CIRCUIT BREAKERS ARE OPEN:

"APU ALT CONT" P11 OVERHEAD PANEL, 11B35
"APU PRIME CONT" E6 RACK, AFT EQUIPMENT CENTER

WARNING: DO NOT TOUCH THE IGNITION COMPONENTS UNTIL YOU DO THESE STEPS. THESE STEPS WILL RELEASE THE HIGH VOLTAGE FROM THE IGNITION UNIT. IF YOU DO NOT OBEY THESSE STEPS, INJURY TO PERSONS CAN OCCUR.

RELEASE THE HIGH VOLTAGE FROM THE IGNITION UNIT:
- STOP FOR A MINIMUM OF 5 MINUTES
- DISCONNECT THE IGNITION CABLE FROM THE IGNITER PLUG
- GROUND THE IGNITION CABLE TERMINAL TO THE APU ENGINE.

EXAMINE THE IGNITION LEAD CONNECTION TO THE IGNITER PLUG (AMM 49-41-04/601).
IS THE CONNECTION BAD?

YES → 21 REPLACE THE IGNITER PLUG, YBMM7 (AMM 49-41-02/401) AND THE IGNITION LEAD (AMM 49-41-04/401). 1

NO → 22 REPLACE THE IGNITION LEAD (AMM 49-41-04/401). 1 2
IF THE PROBLEM CONTINUES, REPLACE THE IGNITER PLUG (AMM 49-41-02/401). 2
IF THE PROBLEM CONTINUES, REPLACE THE IGNITION UNIT, YBMM1 (AMM 49-41-03/401).

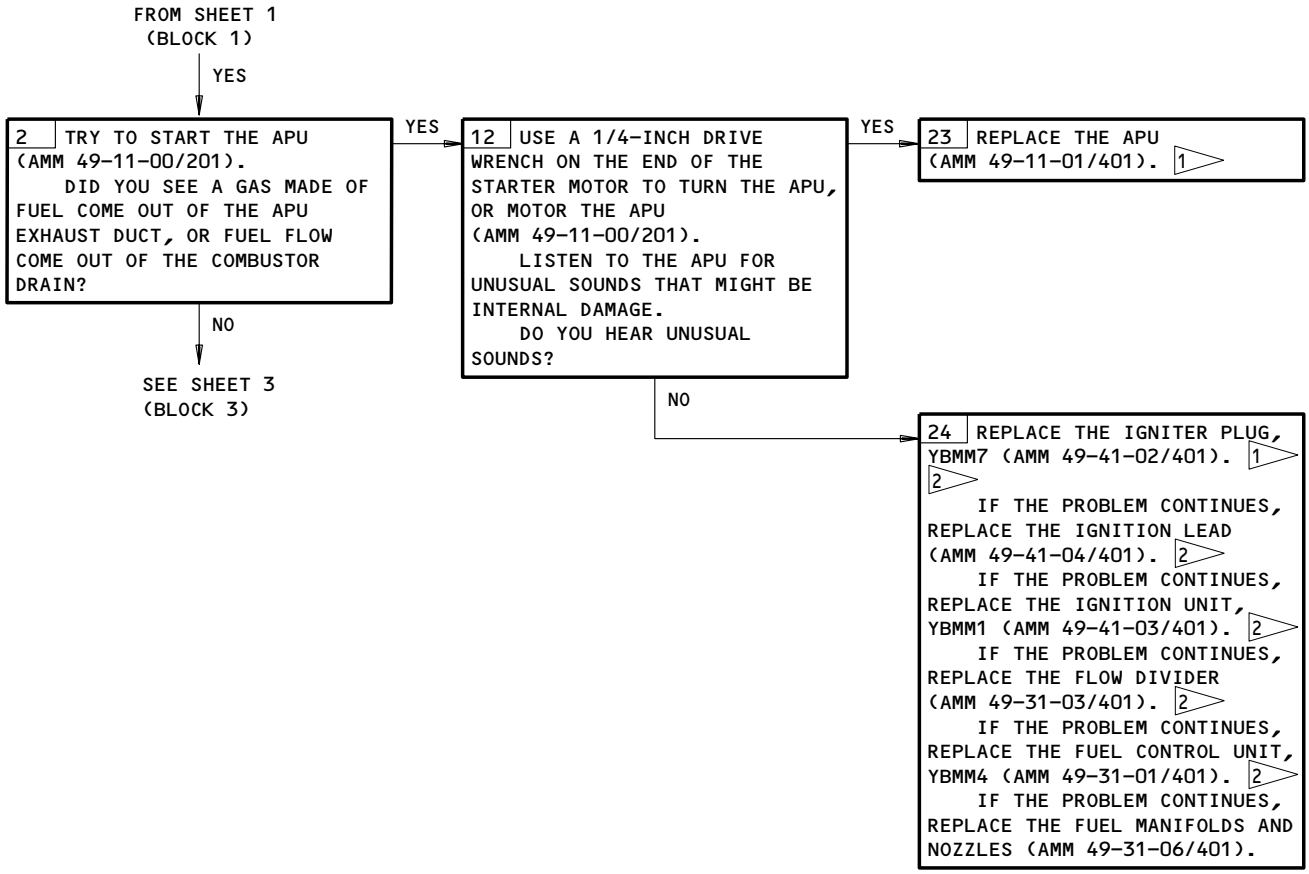
YES → SEE SHEET 2 (BLOCK 2)

1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

2 OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

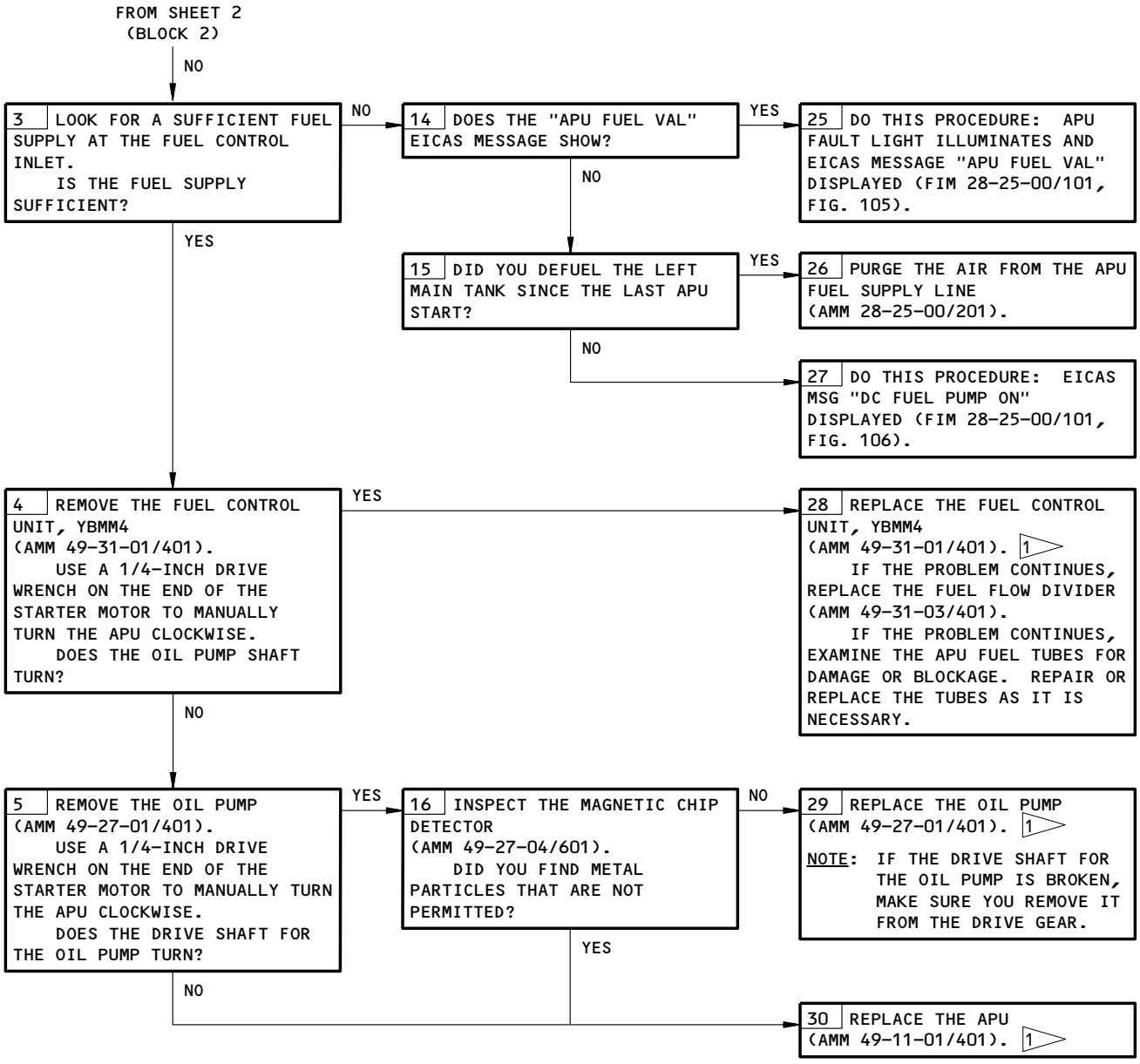
3 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Auto Shutdown – NO LIGHT OFF on BITE
Figure 107 (Sheet 1)



1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

Auto Shutdown - NO LIGHT OFF on BITE
Figure 107 (Sheet 2)



1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

Auto Shutdown - NO LIGHT OFF on BITE
Figure 107 (Sheet 3)

AUTO SHUTDOWN DURING GOVERNED SPEED – "REVERSE FLOW" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 3, APU PRIME CONT (P49), APU START (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS E6 AND E7, TO THE LOAD COMPRESSOR INLET TEMPERATURE SENSOR, YBMTS5 (WDM 49-14-11).
ARE THERE LOOSE OR BROKEN CONNECTIONS?

YES → 41 REPAIR THE PROBLEMS THAT YOU FIND. 1

NO

2 IS THE POSITION INDICATOR ON THE SURGE CONTROL VALVE IN THE "OPEN" POSITION?

NO → 42 REPLACE THE SURGE VALVE, YBMM5 (AMM 49-53-01/401). 1

YES

3 DOES THE SHUTDOWN OCCUR WHEN THE APU OPERATES WITH THE BLEED VALVE CLOSED AND THE MAIN ENGINES OFF?

YES → 43 REPLACE THE LOAD COMPRESSOR INLET TEMPERATURE SENSOR, YBMTS5 (AMM 49-61-03/401). 2
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS E6 AND E7, TO THE LOAD COMPRESSOR INLET TEMPERATURE SENSOR, YBMTS5 (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND. 2
IF THE PROBLEM CONTINUES, REPLACE THE ECU (AMM 49-61-05/401). 1

NO

4 DOES THE SHUTDOWN OCCUR ONLY WHEN THE MAIN ENGINES OPERATE?

YES → 44 REPLACE THE APU CHECK VALVE (AMM 36-11-11/401). 1

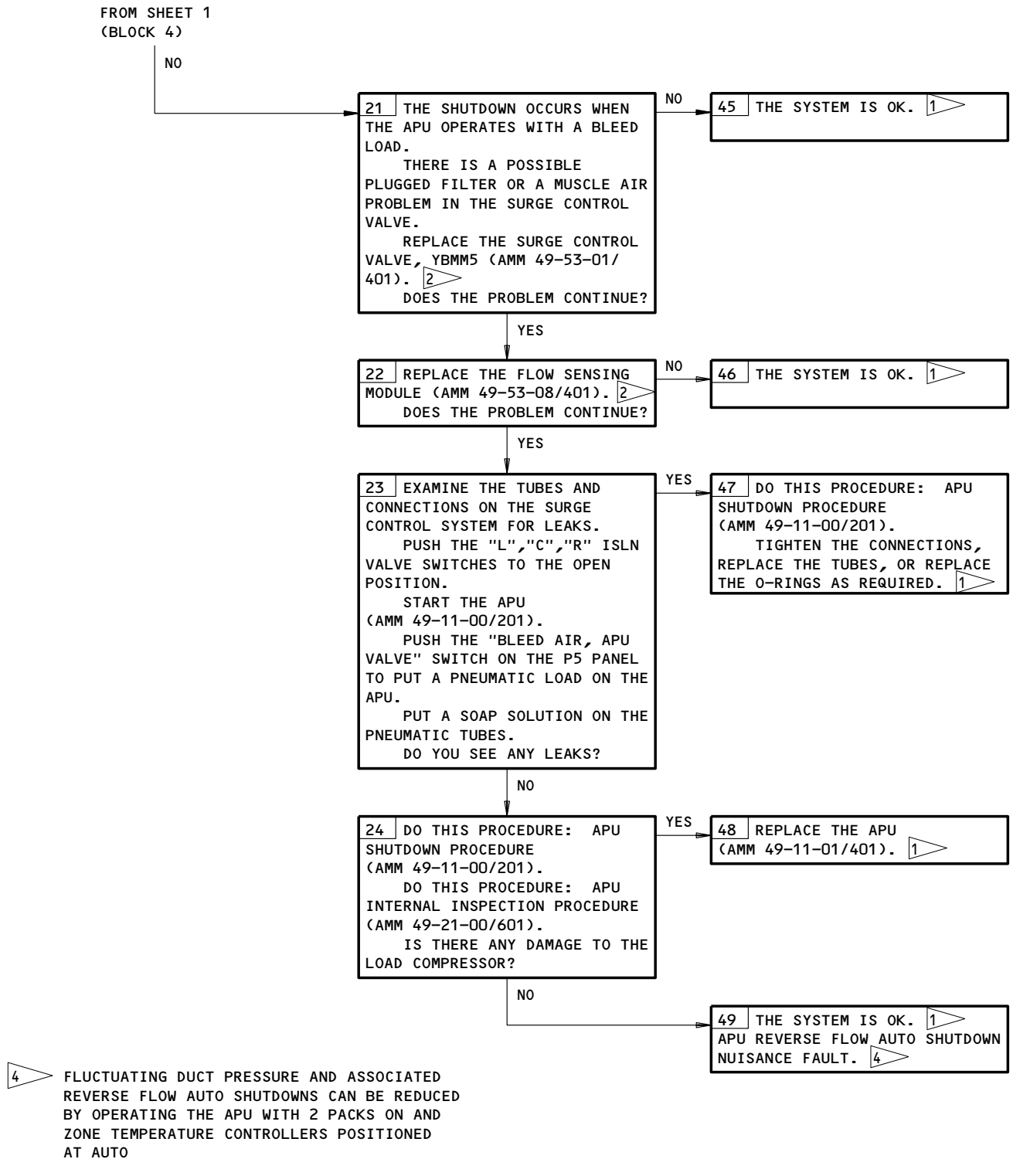
NO → SEE SHEET 2 (BLOCK 21)

1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

2 OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

3 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Auto Shutdown During Governed Speed – REVERSE FLOW on BITE
Figure 108 (Sheet 1)



Auto Shutdown During Governed Speed – REVERSE FLOW on BITE
Figure 108 (Sheet 2)

L16860

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

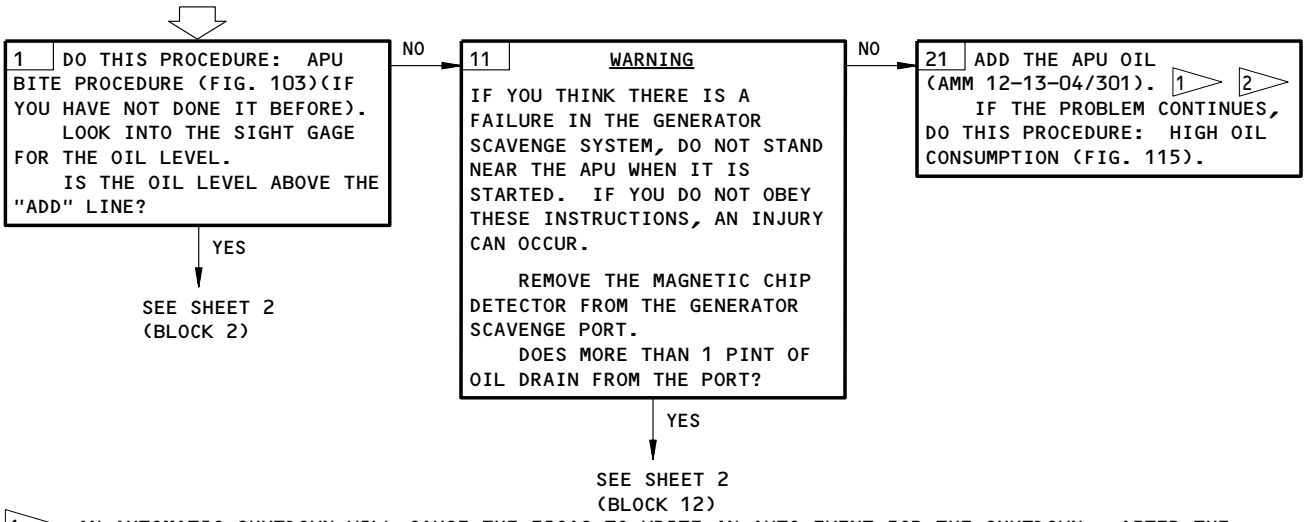
MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [3], APU PRIME CONT (P49), APU START (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

NOTE: THE "LOW OIL PRESSURE" LIGHT ON THE ECU WILL FLASH WHEN A "LOW OIL PRESSURE" SHUTDOWN OCCURS ON THE THIRD TRY TO START THE APU WITH THE AIRPLANE ON THE GROUND. THE "LOW OIL PRESSURE" LIGHT WILL ONLY FLASH IF THE ECU MEMORY WAS NOT ERASED AFTER THE FIRST TWO "LOW OIL PRESSURE" SHUTDOWNS.

IF THE APU IS INITIALLY STARTED WITH LOW OIL PRESSURE, THE APU WILL SHUTDOWN 15.5 SECONDS AFTER IT GETS TO 95% RPM (OR ONE SECOND IF THE APU OIL TEMPERATURE IS GREATER THAN 20°F). THE SUBSEQUENT START WITH LOW OIL PRESSURE WILL CAUSE A SHUTDOWN ONE SECOND AFTER THE APU GETS TO 95% RPM. THE APU WILL THEN NOT START IF THERE IS LOW OIL PRESSURE.

AUTO SHUTDOWN - "LOW OIL PRESSURE" ON BITE

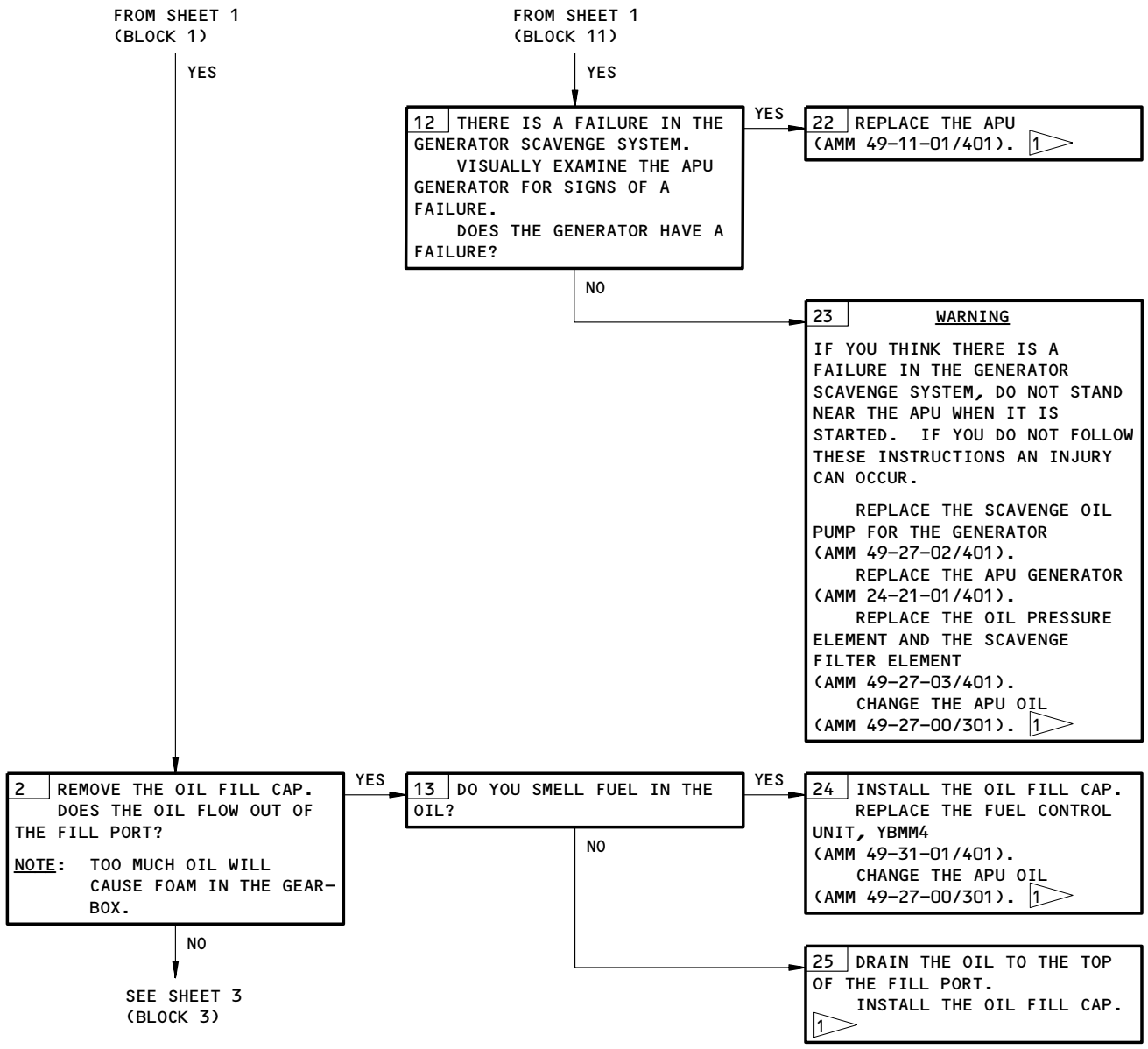


1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

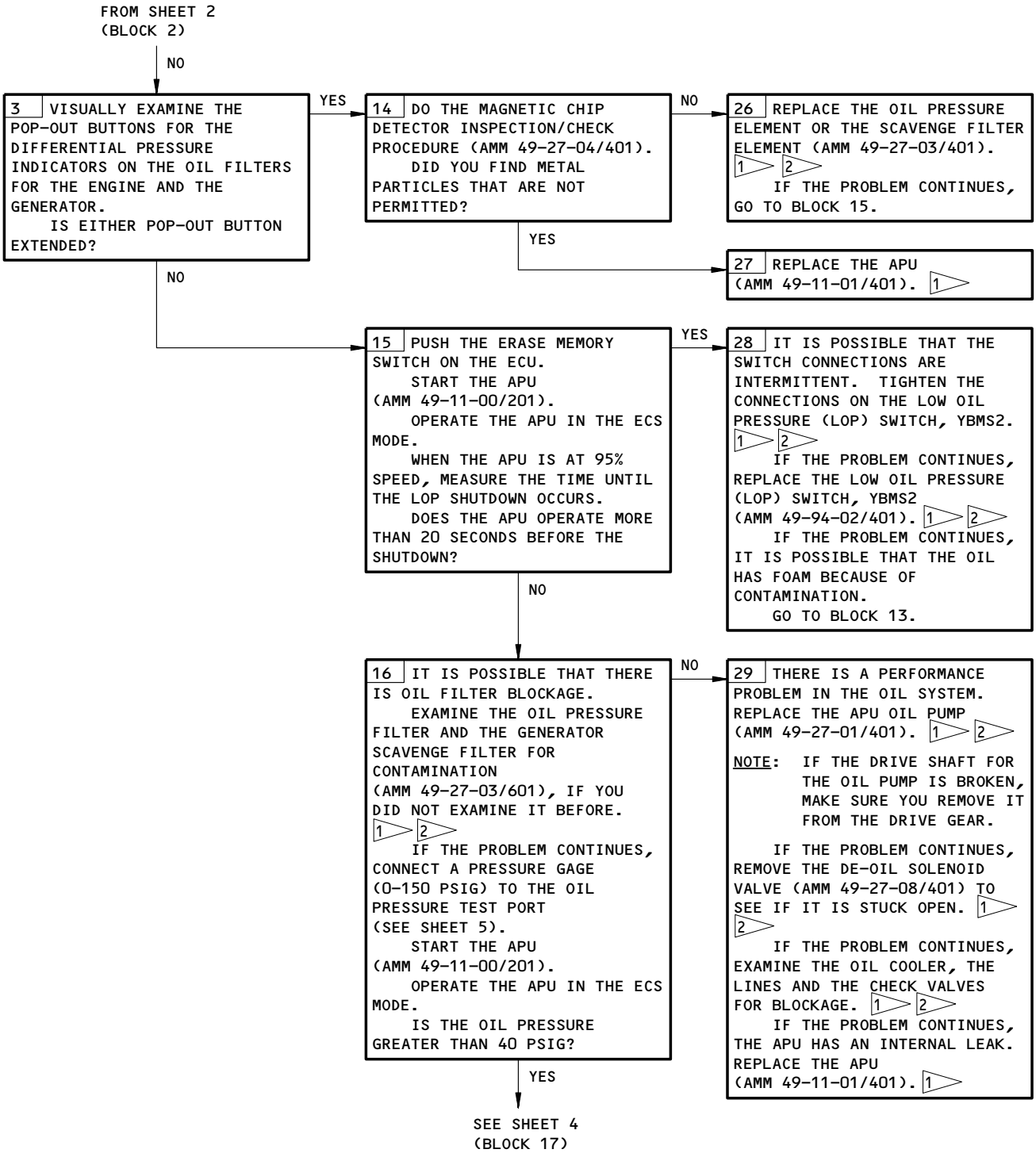
2 OPERATE THE APU (AMM 49-11-00/201) AND DO THE BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

3 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Auto Shutdown - LOW OIL PRESSURE on BITE
Figure 109 (Sheet 1)



Auto Shutdown - LOW OIL PRESSURE on BITE
Figure 109 (Sheet 2)



Auto Shutdown - LOW OIL PRESSURE on BITE
Figure 109 (Sheet 3)

FROM SHEET 3
(BLOCK 16)

YES

17 IS THE OIL PRESSURE LESS THAN 60 PSI?

YES

30 IT IS POSSIBLE THAT THERE IS A PERFORMANCE PROBLEM IN THE OIL SYSTEM.
REPLACE THE APU OIL PUMP (AMM 49-27-01/401). 1 2

NOTE: IF THE DRIVE SHAFT FOR THE OIL PUMP IS BROKEN, MAKE SURE YOU REMOVE IT FROM THE DRIVE GEAR.

IF THE PROBLEM CONTINUES, REMOVE THE DE-OIL SOLENOID VALVE (AMM 49-27-08/401) TO SEE IF IT IS STUCK OPEN. 1 2

IF THE PROBLEM CONTINUES, EXAMINE THE OIL COOLER, THE LINES AND THE CHECK VALVES FOR BLOCKAGE. 1 2

IF THE PROBLEM CONTINUES, THE APU HAS AN INTERNAL LEAK. REPLACE THE APU (AMM 49-11-01/401). 1 2

IF THE PROBLEM CONTINUES, THERE IS AN INDICATION PROBLEM. EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PIN C5 TO THE LOW OIL PRESSURE SWITCH, YBMS2, CONNECTOR P6, PIN 1 (GROUND, PIN 2) (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND. 1 2

IF THE PROBLEM CONTINUES, REPLACE THE ECU, M206 (AMM 49-61-05/401). 1

NO

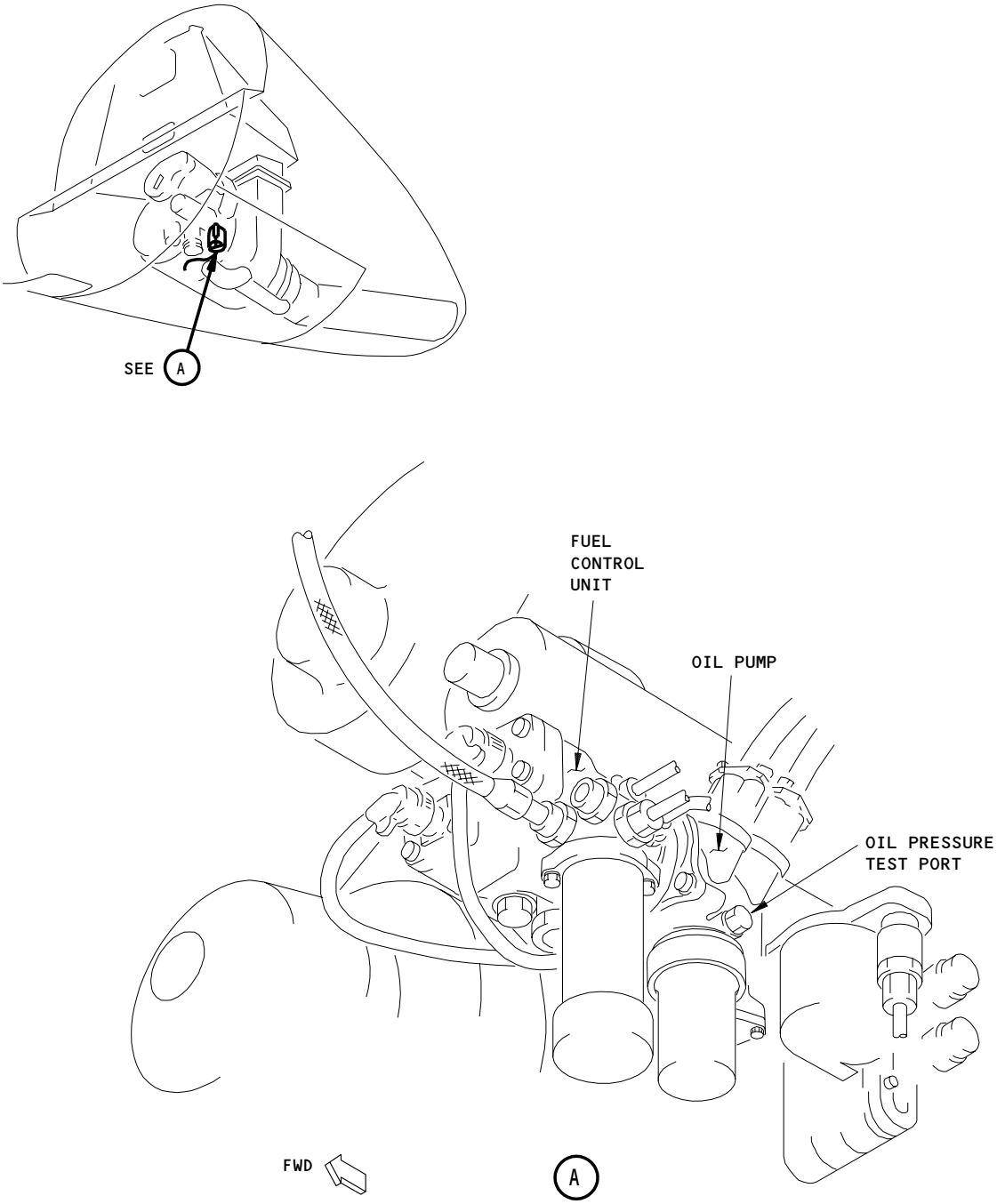
18 THERE IS AN INDICATION PROBLEM. IT IS POSSIBLE THAT THERE IS A CALIBRATION SHIFT IN THE LOW OIL PRESSURE (LOP) SWITCH. REPLACE THE LOW OIL PRESSURE (LOP) SWITCH, YBMS2 (AMM 49-94-02/401). 1 2

IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PIN C5, TO THE LOW OIL PRESSURE SWITCH, YBMS2, CONNECTOR P6, PIN 1 (GROUND, PIN 2) (WDM 49-14-11).

REPAIR THE PROBLEMS THAT YOU FIND. 1 2

IF THE PROBLEM CONTINUES, REPLACE THE ECU, M206 (AMM 49-61-05/401). 1

Auto Shutdown - LOW OIL PRESSURE on BITE
Figure 109 (Sheet 4)



Auto Shutdown – LOW OIL PRESSURE on BITE
Figure 109 (Sheet 5)

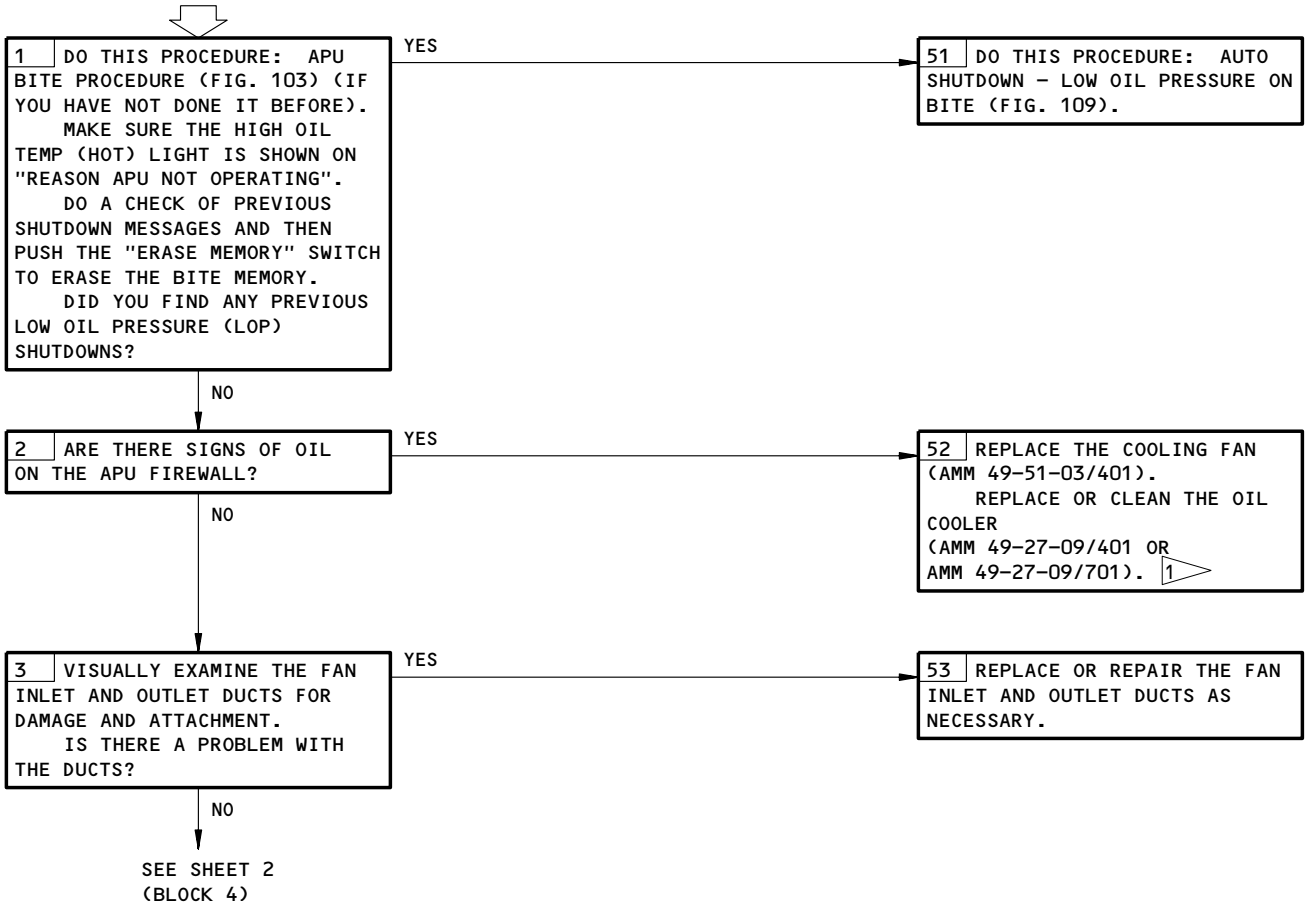
G33488

AUTO SHUTDOWN – "HIGH OIL TEMP" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

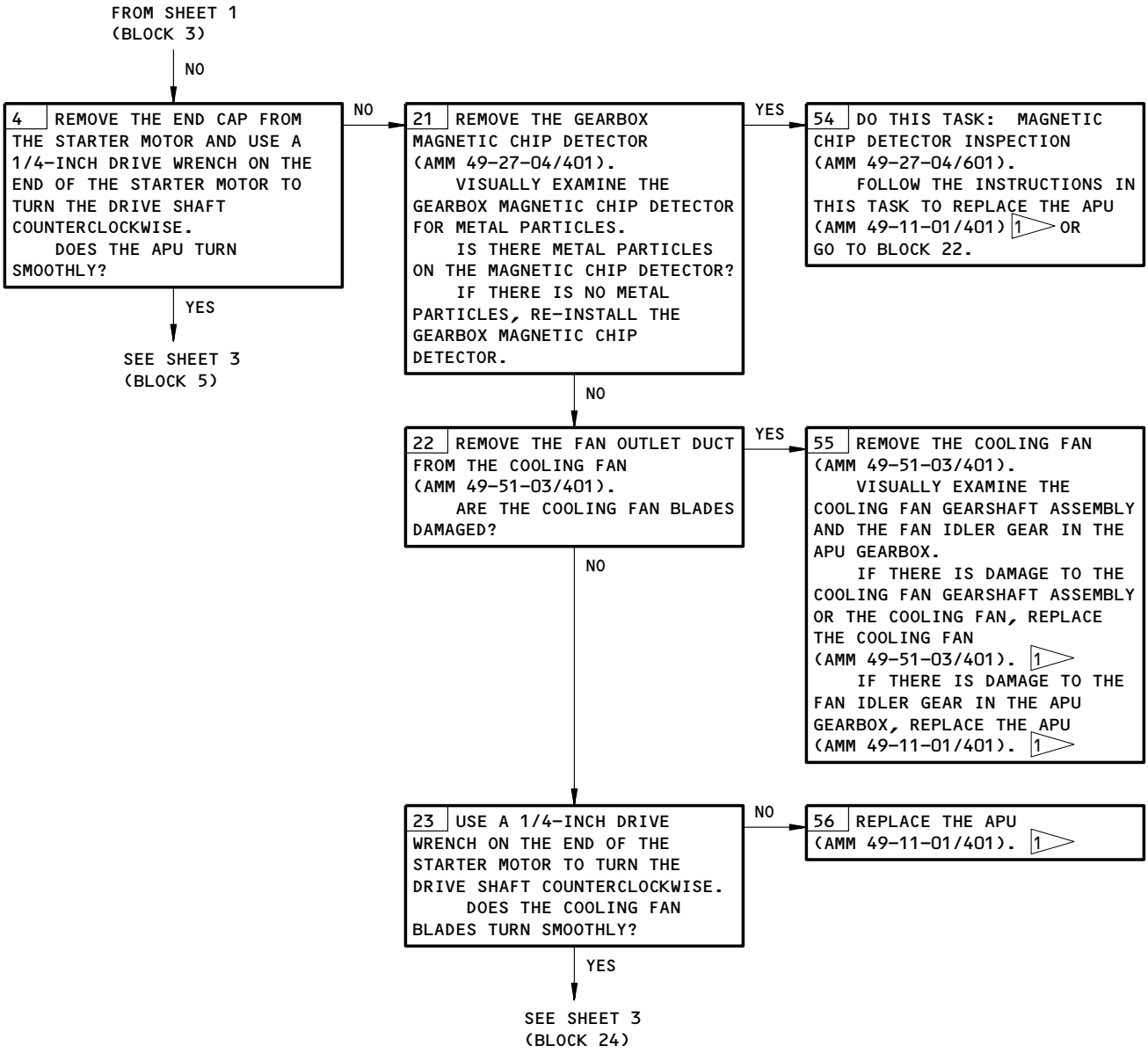
MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)



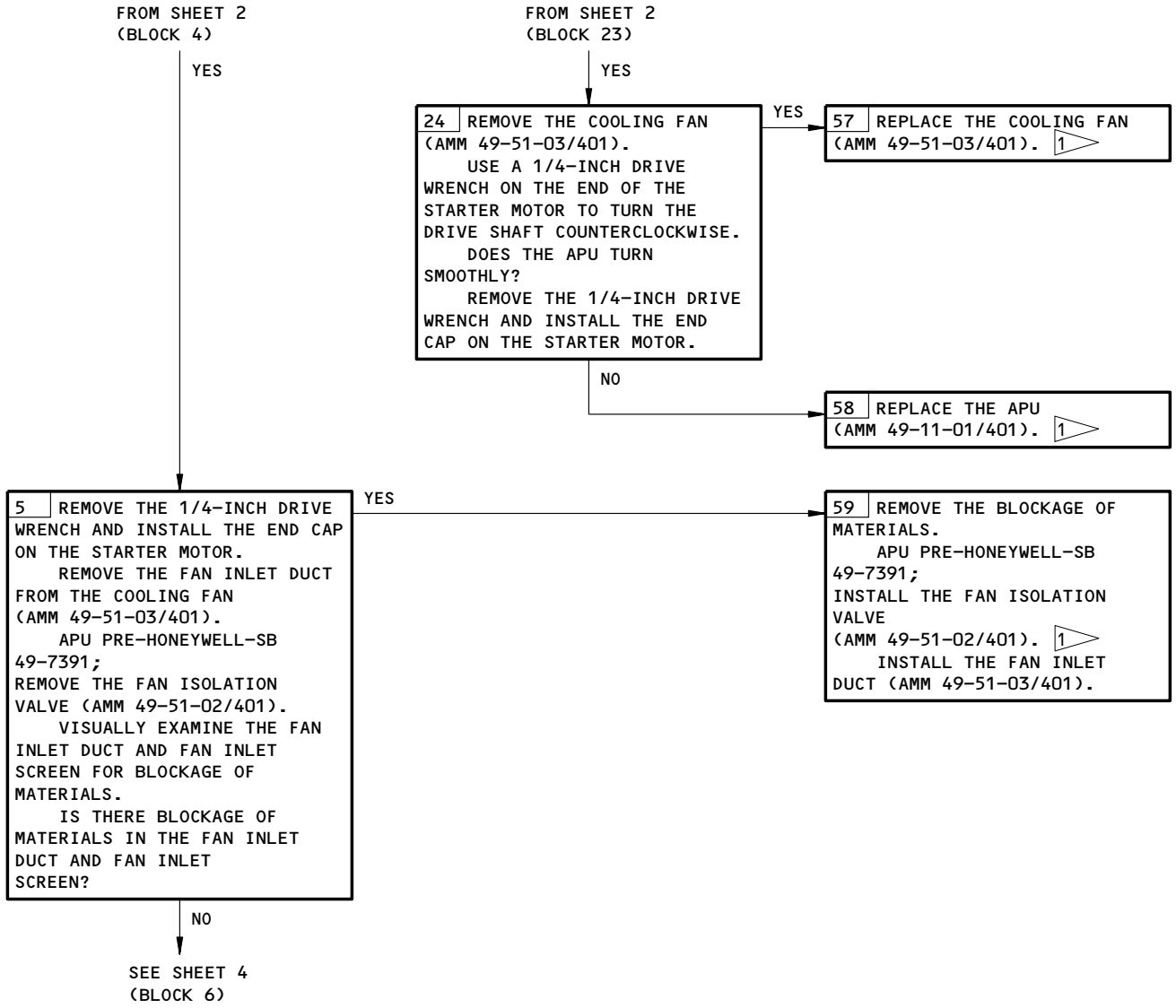
1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF-APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

Auto Shutdown – HIGH OIL TEMP on BITE
Figure 110 (Sheet 1)

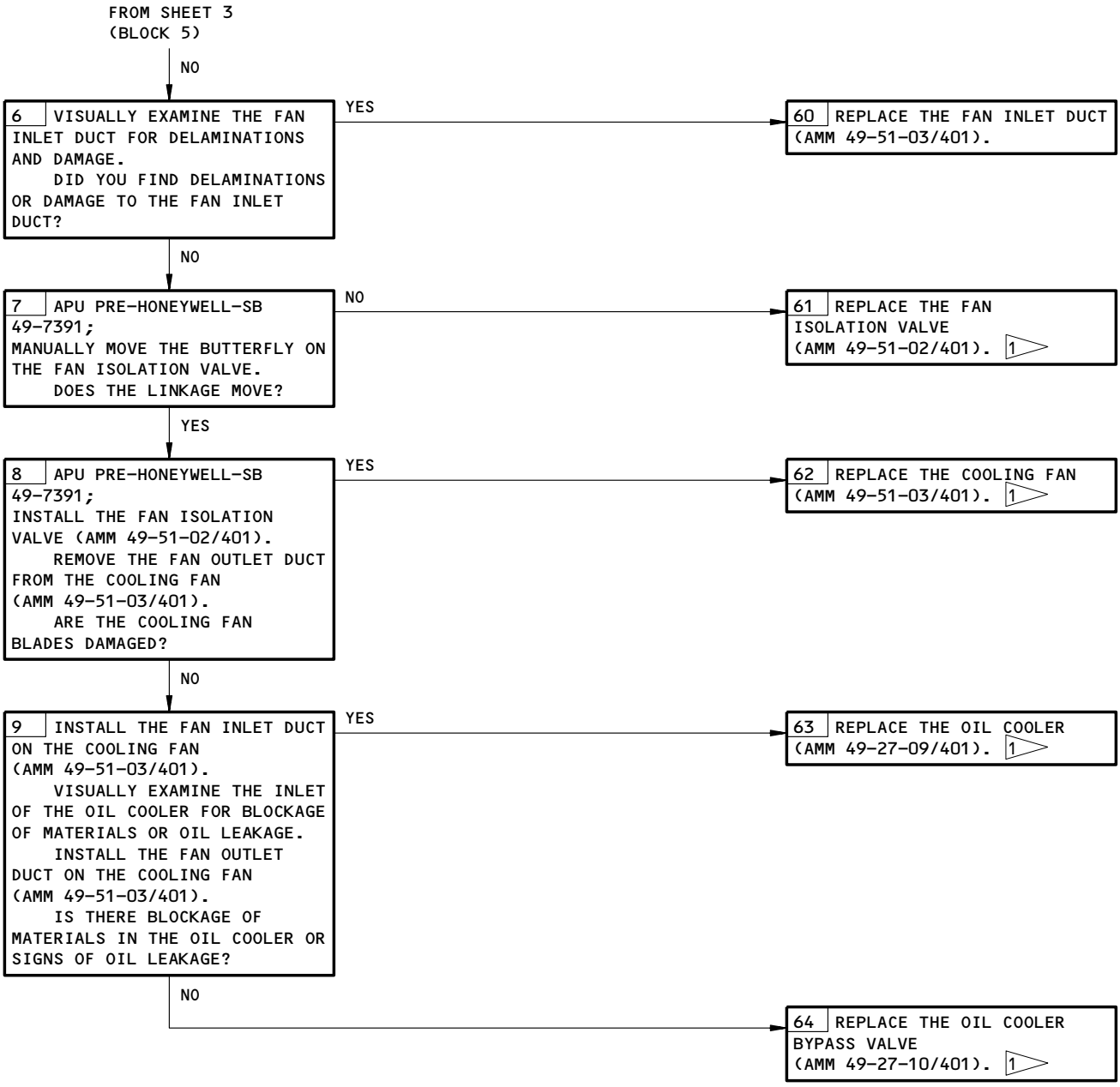
E78896



Auto Shutdown - HIGH OIL TEMP on BITE
Figure 110 (Sheet 2)



Auto Shutdown - HIGH OIL TEMP on BITE
Figure 110 (Sheet 3)



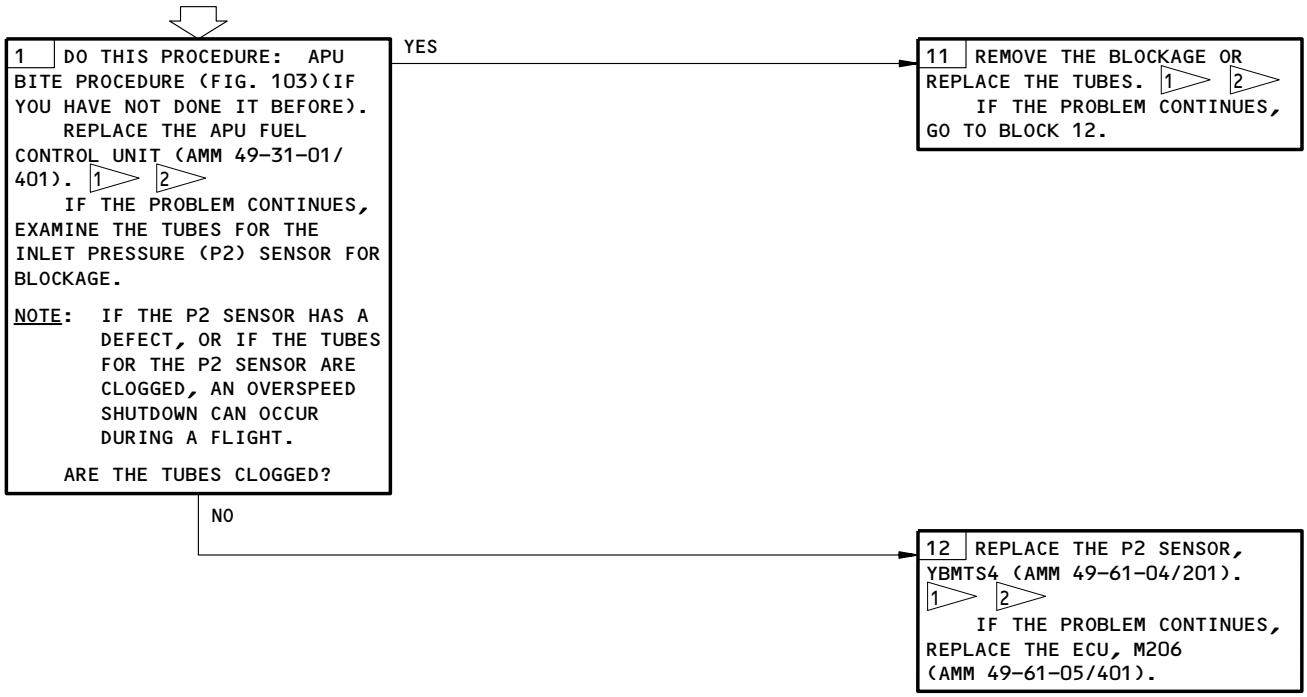
Auto Shutdown - HIGH OIL TEMP on BITE
Figure 110 (Sheet 4)

AUTO SHUTDOWN – "OVER SPEED" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)



1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

2 OPERATE THE APU (AMM 49-11-00/201) AND DO THE BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

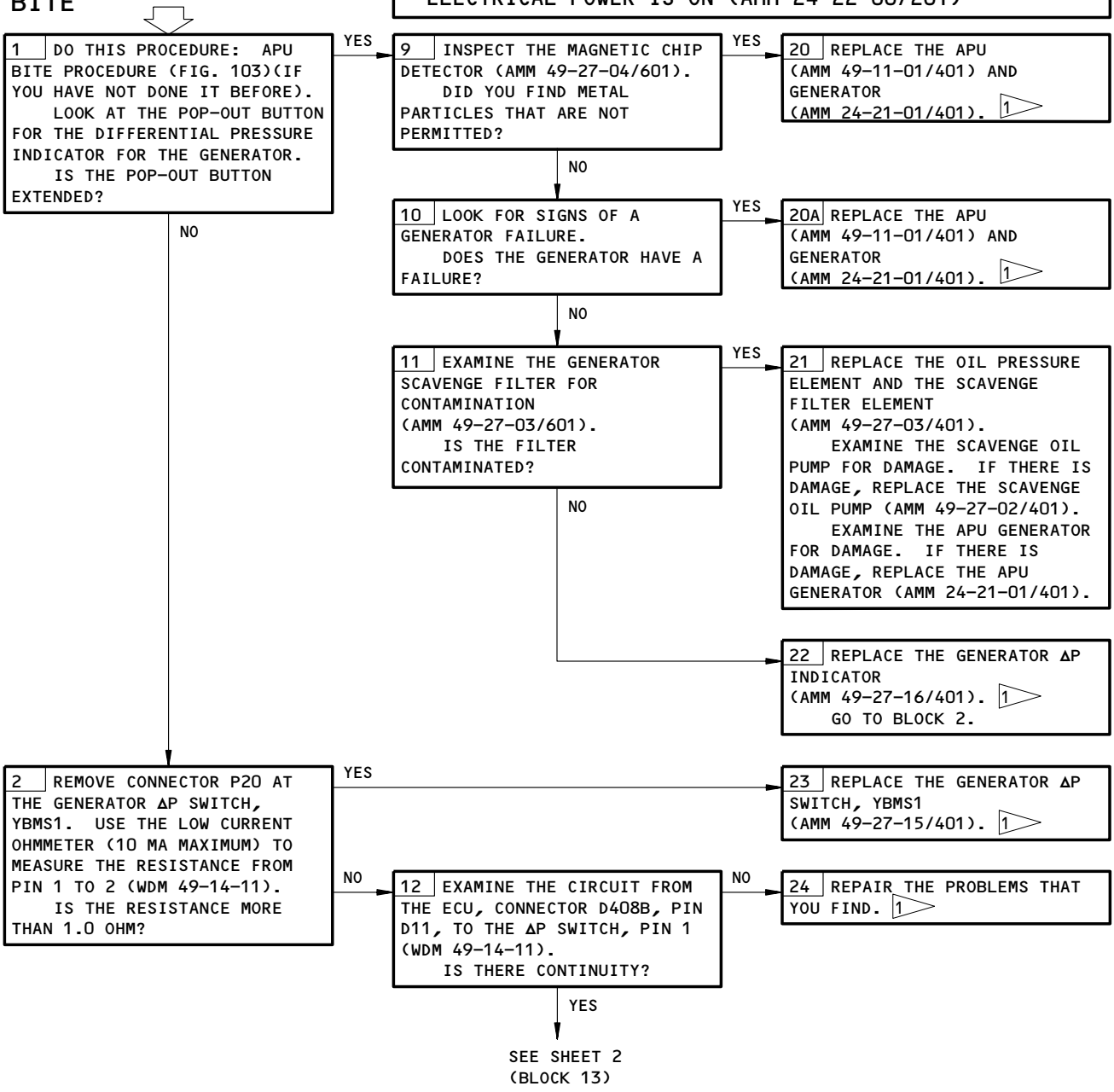
Auto Shutdown – OVER SPEED on BITE
Figure 111

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

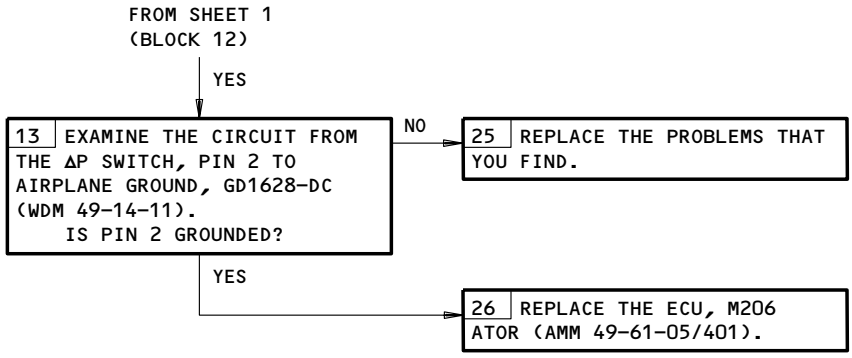
MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

AUTO SHUTDOWN - "GEN FILTER" ON BITE



1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

Auto Shutdown - GEN FILTER on BITE
Figure 112 (Sheet 1)



Auto Shutdown - GEN FILTER on BITE
Figure 112 (Sheet 2)

PREREQUISITES

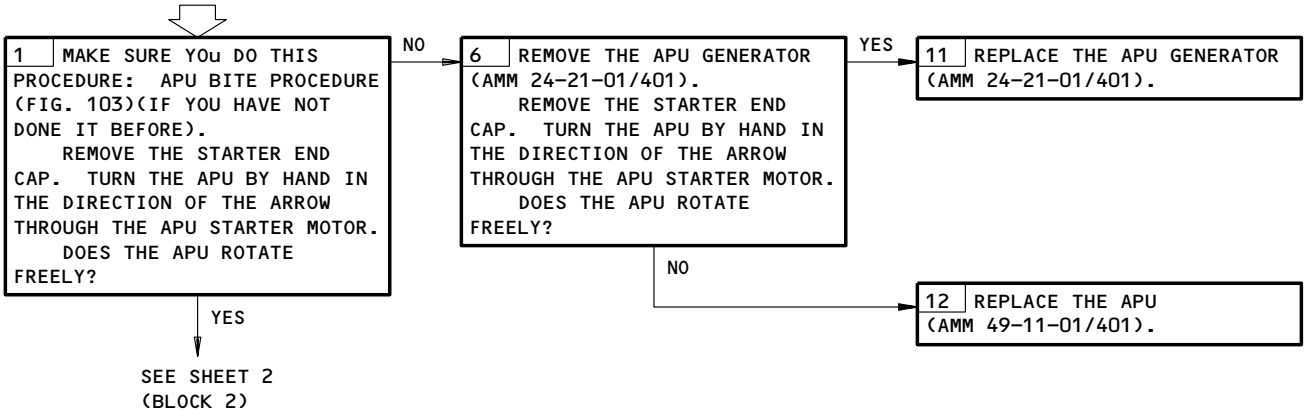
MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 3,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

AUTO SHUTDOWN - "EGT OVERTEMP" ON BITE

NOTE: IF THE APU HAS A START PROBLEM ("NO LIGHT OFF", OR "START ABORTED") AND THE AUTOMATIC SHUTDOWN "EGT OVERTEMP", THERE IS A DEFECT IN THE FLOW DIVIDER OR THE PRIMARY FUEL NOZZLE.

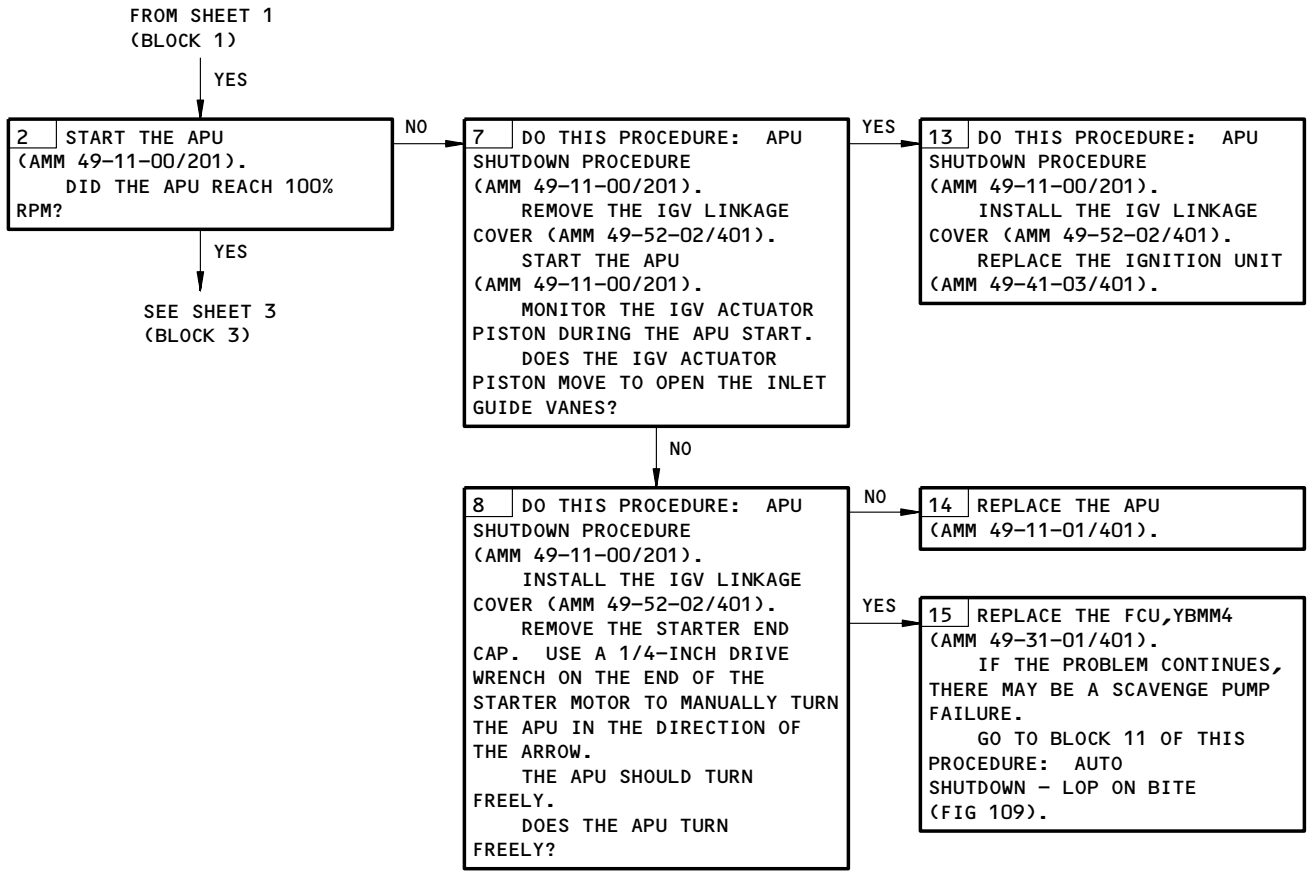


1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

2 DO THIS PROCEDURE: SELF-TEST (FIG. 103) TO MAKE SURE THE PROBLEM IS REPAIRED.

3 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Auto Shutdown - EGT OVERTEMP on BITE
Figure 113 (Sheet 1)



Auto Shutdown - EGT OVERTEMP on BITE
Figure 113 (Sheet 2)

FROM SHEET 2
(BLOCK 2)

YES

3 AFTER THE APU IS AT 100%, PUT AN ELECTRICAL LOAD ON THE APU.

PUT A PNEUMATIC LOAD ON THE APU AS FOLLOWS:

- PUSH THE TWO BLEED AIR L (R) ENG SWITCHES ON THE P5 PANEL TO THE "OFF" POSITION
- PUSH THE BLEED AIR ISOLATION VALVE TO THE OPEN POSITION
- SELECT THE LEFT AND RIGHT ECS PACKS ON
- LOOK AT THE EGT ON THE "PERF/APU" PAGE ON EICAS.

IS THE EGT MORE THAN 600°C?

NO

16 REPLACE THE FUEL CONTROL UNIT (AMM 49-31-01/401). 2

IF THE PROBLEM CONTINUES, REPLACE THE EGT THERMOCOUPLES (AMM 49-71-01/401). 2

IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D1796B, PINS A6 AND A7, TO THE THERMOCOUPLE RAKE NO. 1 (WDM 49-14-11).

EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D1796B, PINS A8 AND A9, TO THE THERMOCOUPLE RAKE NO. 2 (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND. 1

YES

17 THE EGT IS NOT ALWAYS STABLE WITH THIS PROBLEM.

REPLACE THE APU CONTROL UNIT (ECU), M206 (AMM 49-61-05/401). 2

IF THE PROBLEM CONTINUES, REPLACE THE EGT THERMOCOUPLES (AMM 49-71-01/401). 2

IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D1796B, PINS A6 AND A7, TO THE THERMOCOUPLE RAKE NO. 1 (WDM 49-14-11).

EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D1796B, PINS A8 AND A9, TO THE THERMOCOUPLE RAKE NO. 2 (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND. 1

Auto Shutdown - EGT OVERTEMP on BITE
Figure 113 (Sheet 3)

Not Used
Figure 114

HIGH OIL CONSUMPTION

PREREQUISITES

NONE

1 DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
IS WHITE SMOKE OR OIL IN THE EXHAUST?

YES → 20 GO TO BLOCK 5.

NO ↓

2 ARE THERE SIGNS OF EXTERNAL APU OIL LEAKAGE?

YES → 21 REPLACE THE COMPONENT THAT LEAKS, REPAIR THE TUBES, REPLACE THE PACKINGS, OR TIGHTEN THE FITTINGS AS IT IS NECESSARY.

NO ↓

3 EXAMINE THE FORWARD COOLING PORT AND FIREWALL IN THE APU COMPARTMENT.
ARE THERE SIGNS OF OIL LEAKAGE?

YES → 22 REPLACE THE COOLING FAN (AMM 49-51-03/401).
CLEAN THE OIL COOLER (AMM 49-27-09/701).

NO ↓

4 ARE THERE SIGNS THAT THE OIL LEAK IS FROM THE DRAIN MAST?

YES → 10 IS THE LEAKAGE FROM THE DRAIN FOR THE FUEL CONTROL, OIL PUMP, AND IGV ACTUATOR?

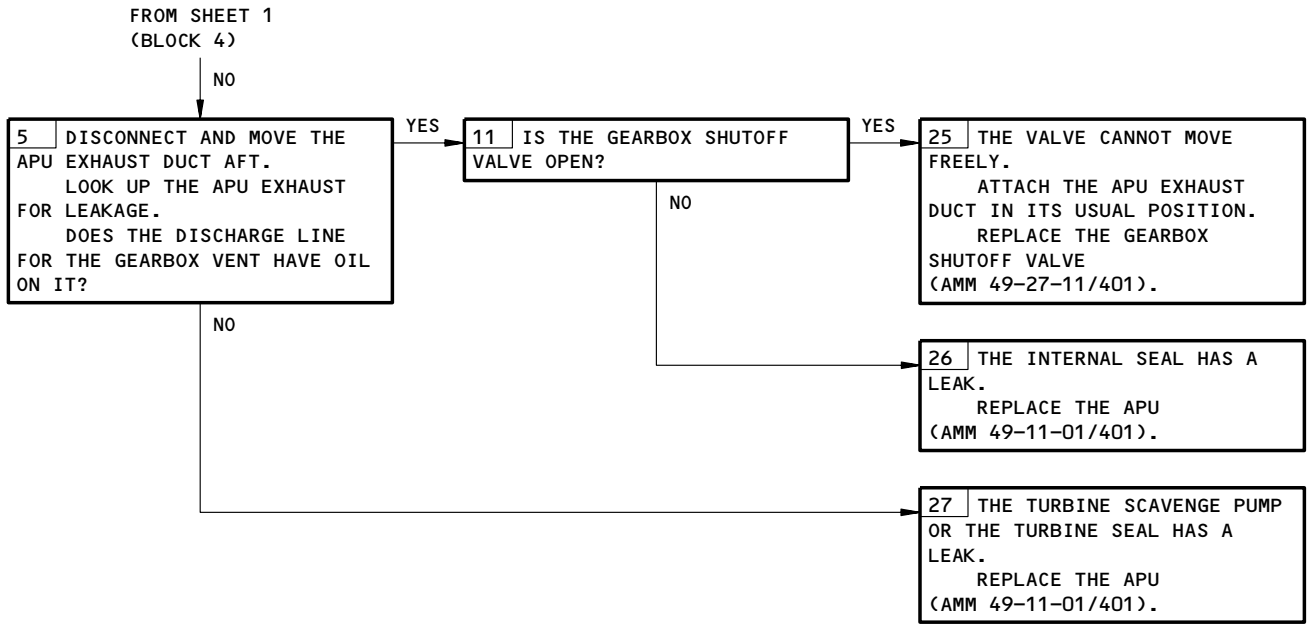
YES → 23 REPLACE THE FUEL CONTROL UNIT, YBMM4 (AMM 49-31-01/401).

NO → 24 THE LEAKAGE IS FROM THE DRAIN FOR THE BEARING CAVITY SEAL.
NO CORRECTIVE STEPS ARE NECESSARY, PROVIDED THE APU OIL CONSUMPTION RATE IS NOT MORE THAN THE LIMIT (AMM 49-11-00/201).
IF THE RATE IS MORE THAN THE LIMIT, REPLACE THE APU (AMM 49-11-01/401).

NO ↓

SEE SHEET 2
(BLOCK 5)

High Oil Consumption
Figure 115 (Sheet 1)



High Oil Consumption
Figure 115 (Sheet 2)

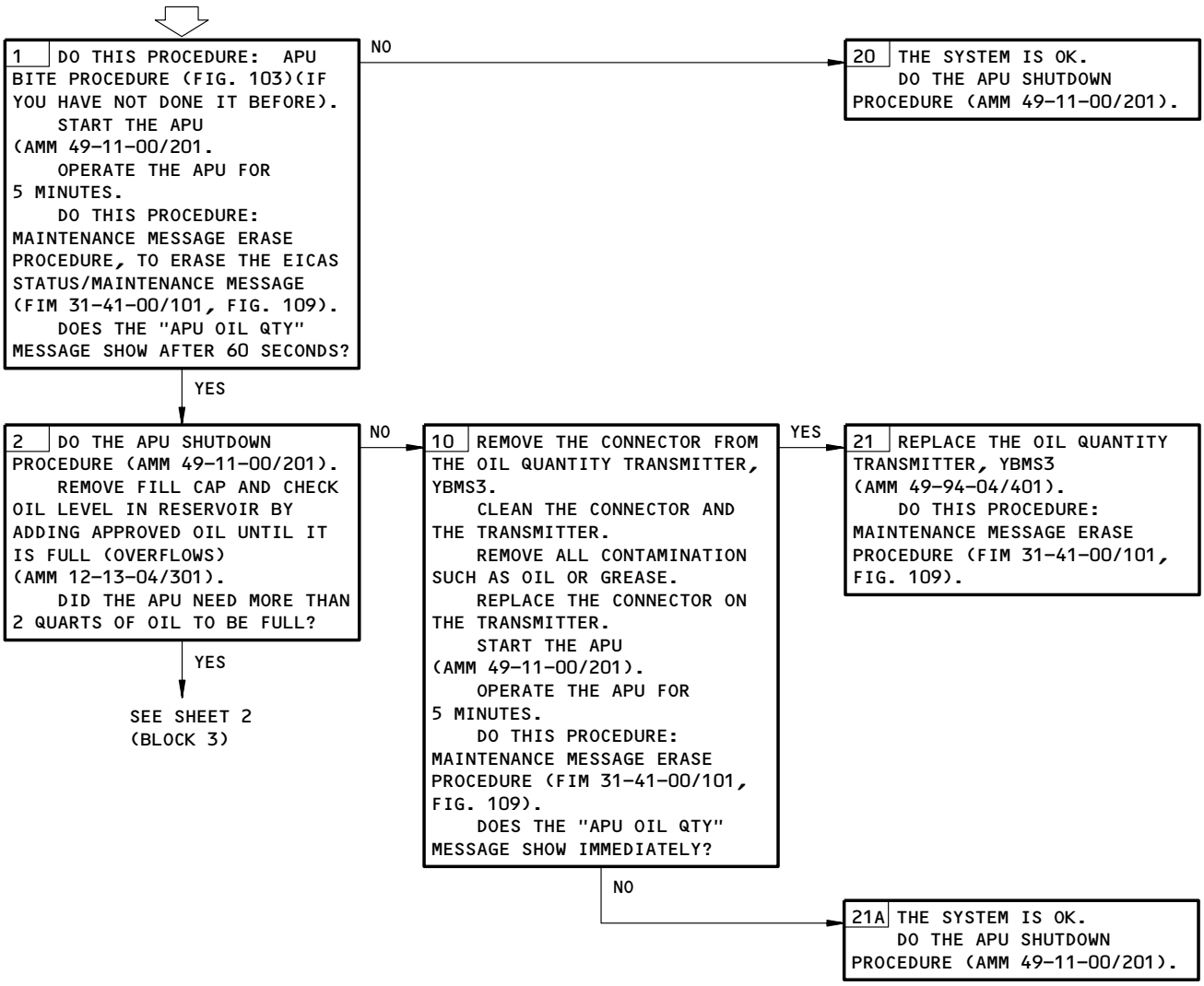
PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

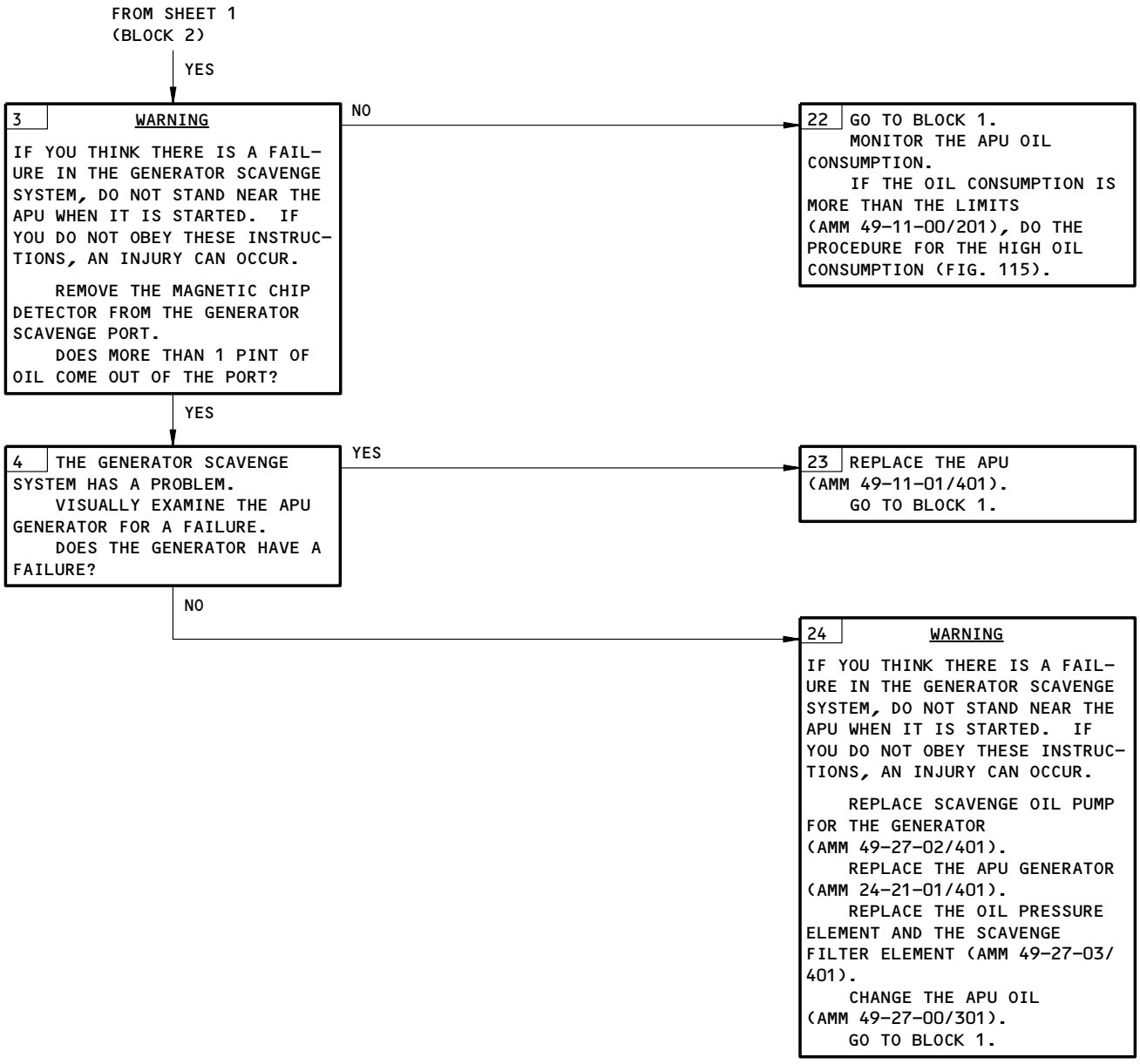
MAKE SURE THIS CIRCUIT BREAKER IS CLOSED:
11A33

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

EICAS MSG "APU OIL QTY" DISPLAYED



EICAS Msg APU OIL QTY Displayed
Figure 116 (Sheet 1)



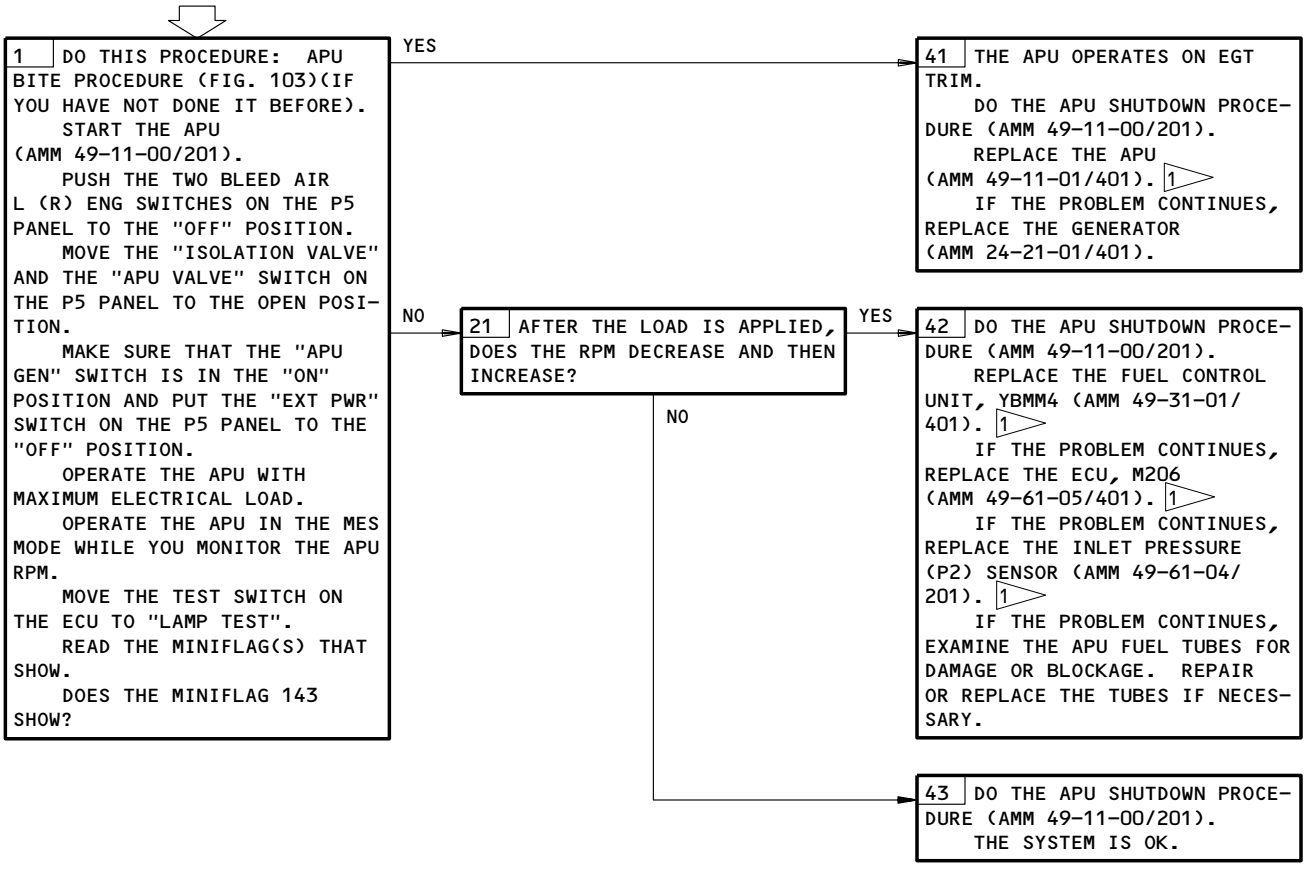
EICAS Msg APU OIL QTY Displayed
Figure 116 (Sheet 2)

APU WILL NOT CARRY PNEUMATIC AND ELECTRICAL LOAD ASSOCIATED WITH RPM DROOP

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)
APU START NORMAL (AMM 49-11-00/201)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)



1 OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

APU Will Not Carry Pneumatic and Electrical Load Associated with RPM Droop
Figure 117

NO DUCT PRESSURE (0-2 PSIG)

PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- EICAS (AMM 31-41-00/201)
- APU START NORMAL (AMM 49-11-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 1>,
- APU PRIME CONT (P49), APU START (P49),
- APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
- ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
EITHER APU COMPONENT OR PNEUMATIC SYSTEM COMPONENT MAY BE AT FAULT.
START THE APU (AMM 49-11-00/201).
PUSH THE TWO BLEED AIR L (R) ENG SWITCHES ON THE P5 PANEL TO THE "OFF" POSITION.
PUSH THE BLEED AIR ISOLATION VALVE SWITCH TO THE OPEN POSITION.
PUSH THE BLEED AIR APU VALVE SWITCH TO THE OPEN POSITION.
IDENTIFY IF THE APU SHUTOFF VALVE OPENED: DID THE "BLEED AIR, APU, VALVE" LIGHT COME ON, THEN GO OFF IN LESS THAN 10 SECONDS?

NO → 11 PNEUMATIC COMPONENT IS CAUSE OF NO DUCT PRESSURE PROBLEM.
LOOK AT THE POSITION INDICATION ON THE APU SHUTOFF VALVE.
IS THE APU SHUTOFF VALVE CLOSED AND LOCKED?

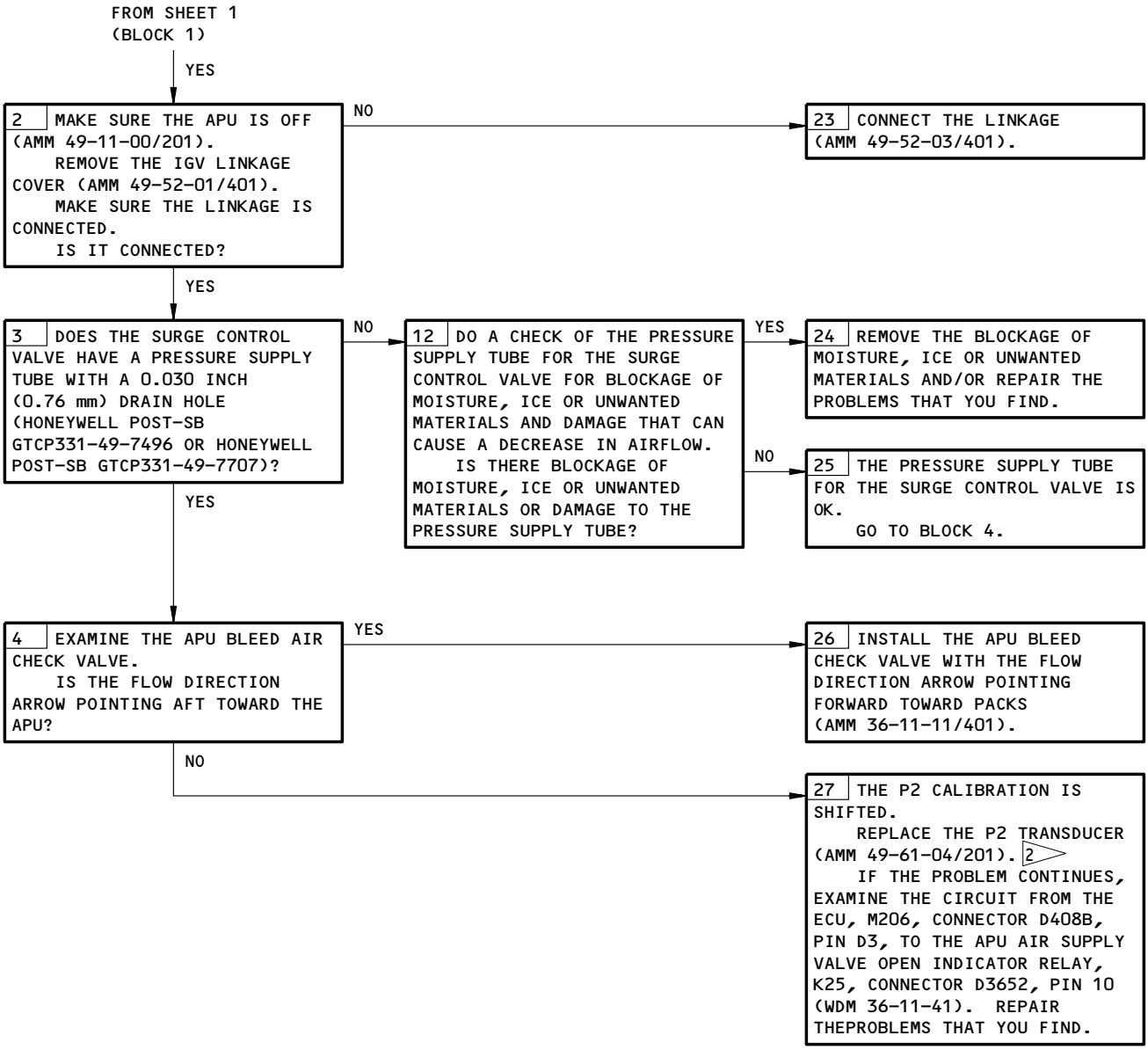
YES → 21 UNLOCK THE APU SHUTOFF VALVE UNLESS IT IS LOCKED FOR OTHER CAUSES.

NO → 22 DO THIS PROCEDURE: APU BLEED AIR VALVE LIGHT ILLUMINATED WITH SW "ON" ("OFF")(FIM 36-10-00/101, FIG. 106).

YES → SEE SHEET 2 (BLOCK 2)

1> AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

No Duct Pressure (0-2 PSIG)
Figure 118 (Sheet 1)



2 OPERATE THE APU (AMM 49-11-00/201) AND DO THE BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

No Duct Pressure (0-2 PSIG)
Figure 118 (Sheet 2)

PREREQUISITES

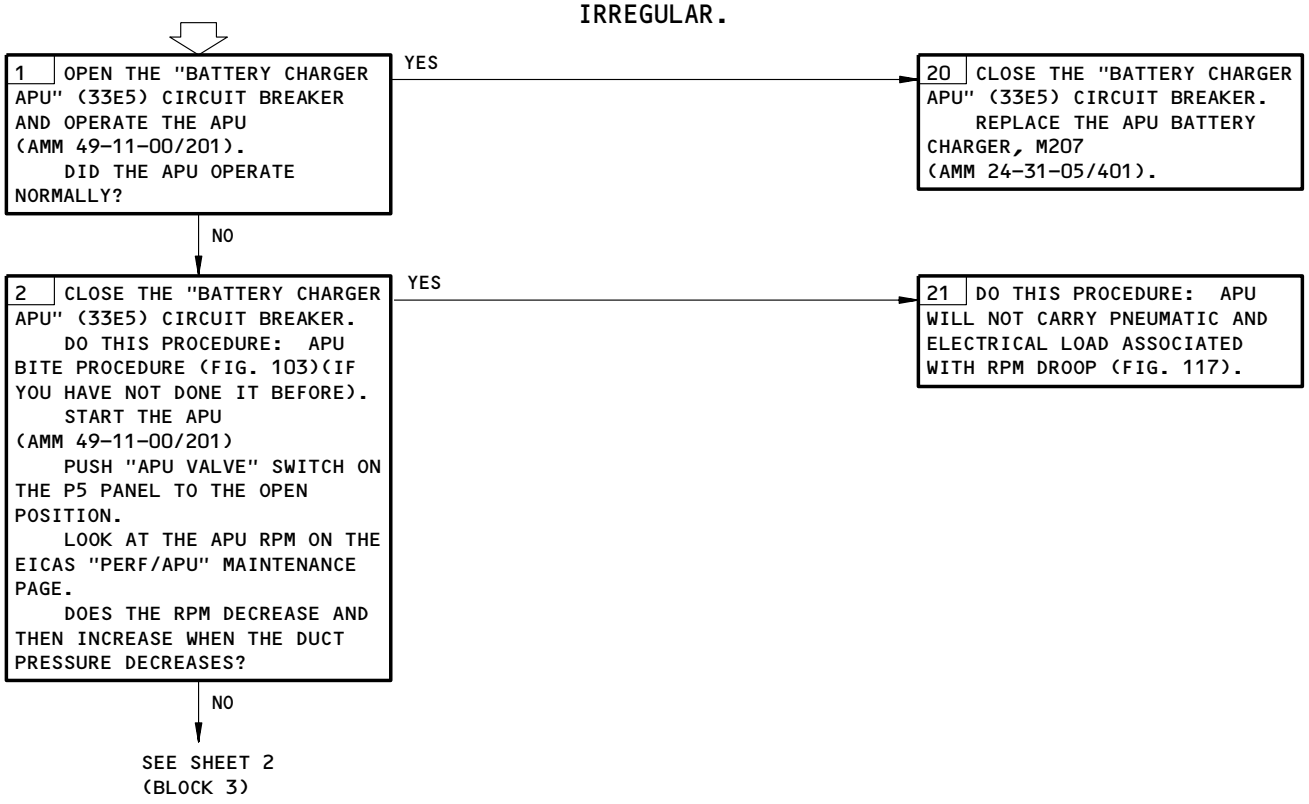
MAKE SURE THESE SYSTEMS WILL OPERATE:
EICAS (AMM 31-41-00/201)
APU START NORMAL (AMM 49-11-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25,
APU PRIME CONT (49C2), APU START (49C3),
APU INLET DOOR ACTR (49C4)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

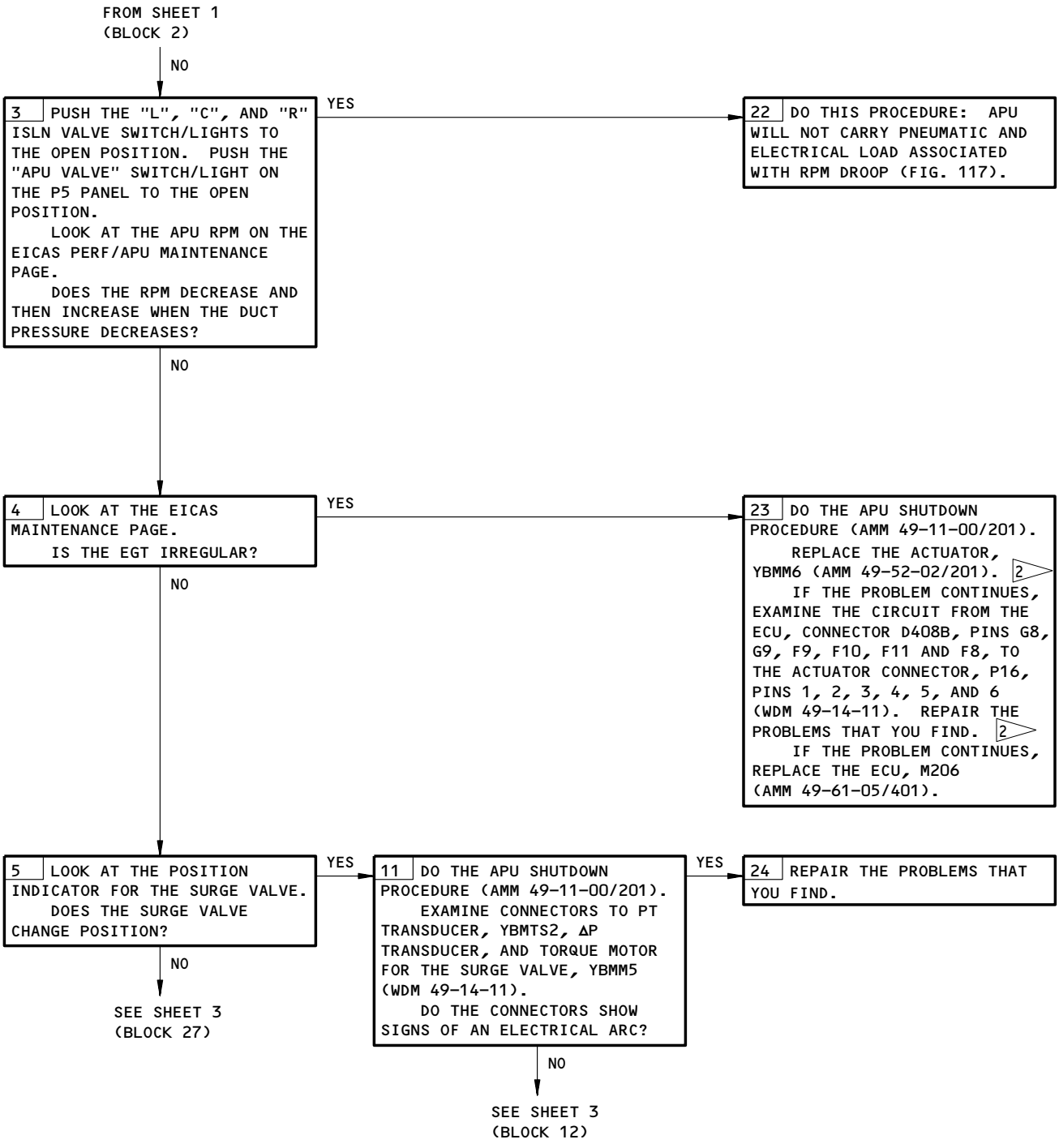
NOTE: IF YOU LOSE ELECTRICAL POWER WHEN YOU TRANSFER FROM ONE GENERATOR TO ANOTHER, THE DUCT PRESSURE WILL MOMENTARILY BE IRREGULAR.

FLUCTUATING DUCT PRESSURE



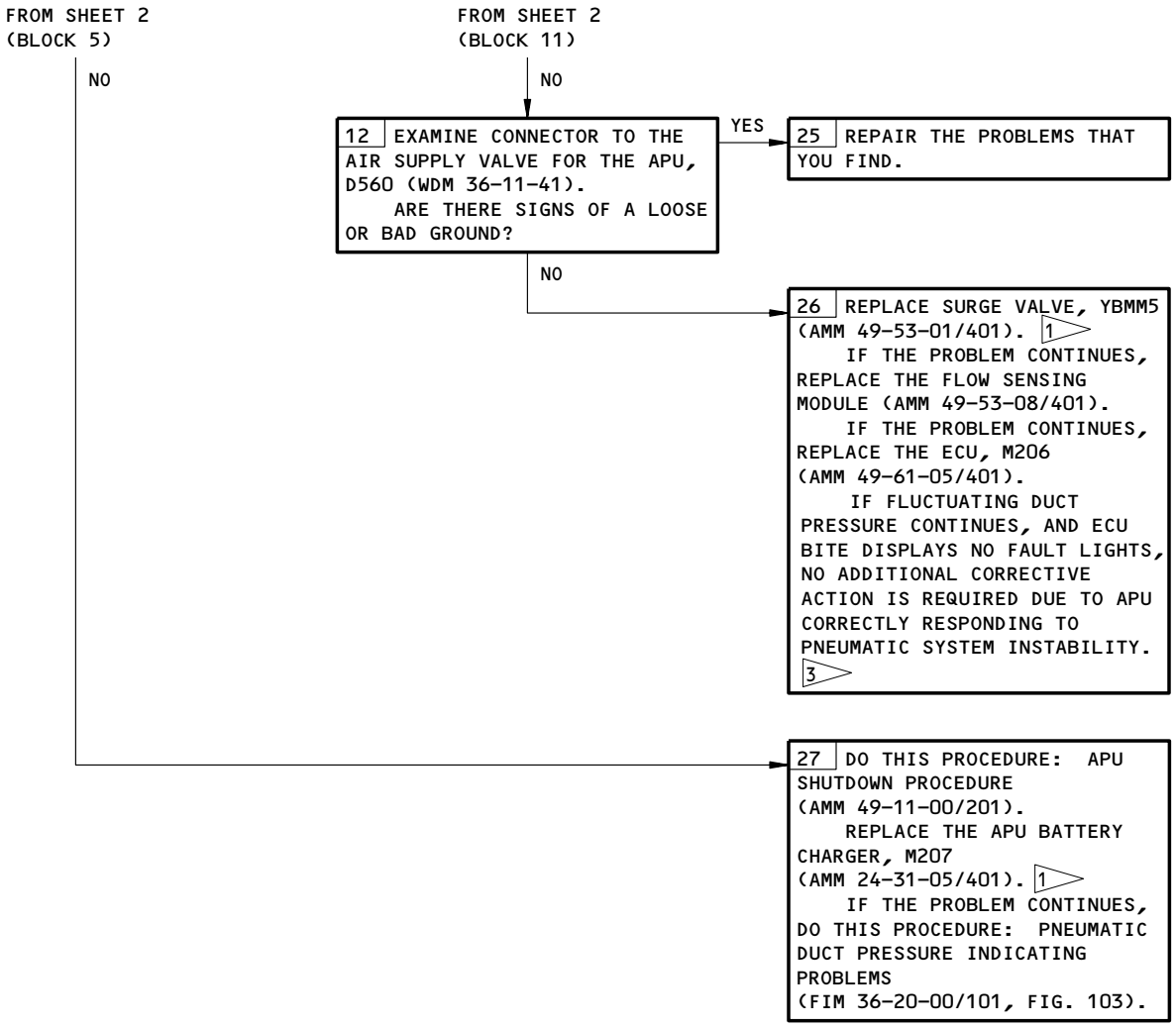
Fluctuating Duct Pressure
Figure 119 (Sheet 1)

L16966



2 OPERATE THE APU (AMM 49-11-00/201) AND DO THE BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

Fluctuating Duct Pressure
Figure 119 (Sheet 2)



3 FLUCTUATING DUCT PRESSURE CAN BE REDUCED BY OPERATING THE APU WITH 2 PACKS ON AND ZONE TEMPERATURE CONTROLLERS POSITIONED AT AUTO

Fluctuating Duct Pressure
Figure 119 (Sheet 3)

LOW DUCT PRESSURE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
APU START NORMAL (AMM 49-11-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [1], APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 DOES THE SURGE CONTROL VALVE HAVE A PRESSURE SUPPLY TUBE WITH A 0.030 INCH (0.76 mm) DRAIN HOLE (HONEYWELL POST-SB GTCP331-49-7496 OR HONEYWELL POST-SB GTCP331-49-7707)?

NO → 11 DO A CHECK OF THE PRESSURE SUPPLY TUBE FOR THE SURGE CONTROL VALVE FOR BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS AND DAMAGE THAT CAN CAUSE A DECREASE IN AIRFLOW.
IS THERE BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS OR DAMAGE TO THE PRESSURE SUPPLY TUBE?

YES → 21 REMOVE THE BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS AND/OR REPAIR THE PROBLEMS THAT YOU FIND.

NO → 22 THE PRESSURE SUPPLY TUBE FOR THE SURGE CONTROL VALVE IS OK.
GO TO BLOCK 2.

YES

2 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
START THE APU (AMM 49-11-00/201).
PUSH THE TWO BLEED AIR L (R) ENG SWITCHES ON THE P5 PANEL TO THE "OFF" POSITION.
PUSH THE BLEED AIR APU VALVE SWITCH TO THE OPEN POSITION.
OPERATE THE APU IN DUCT PRESSURIZATION MODE, ONE (1) ECS PACK, TWO (2) ECS PACKS AND MES MODES.
OBSERVE THE LOW DUCT PRESSURE PROBLEM.
DOES THE LOW DUCT PRESSURE PROBLEM OCCUR IN MORE THAN ONE (1) OPERATIONAL MODE?

YES → 12 IS THE APU EGT MORE THAN 500°C IN THE DUCT PRESSURIZATION MODE?

YES → 23 REPLACE THE APU BECAUSE OF PERFORMANCE DEGRADATION (AMM 49-11-01/401).

NO → 24 DO THIS PROCEDURE: LOW DUCT PRESSURE IN ALL OPERATIONAL MODES ECS, MES AND DUCT PRESSURIZATION (FIG. 120C).

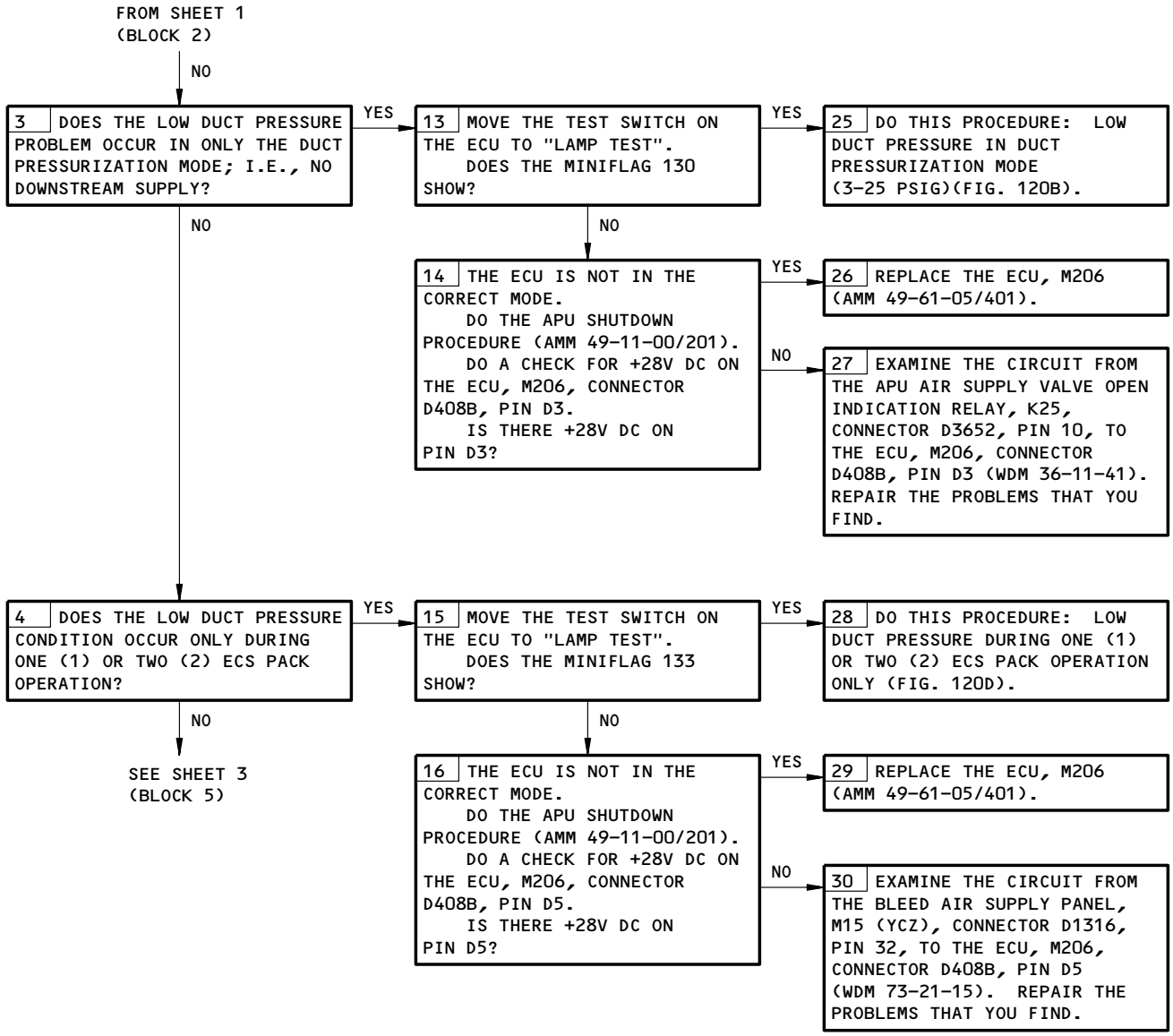
NO

SEE SHEET 2
(BLOCK 3)

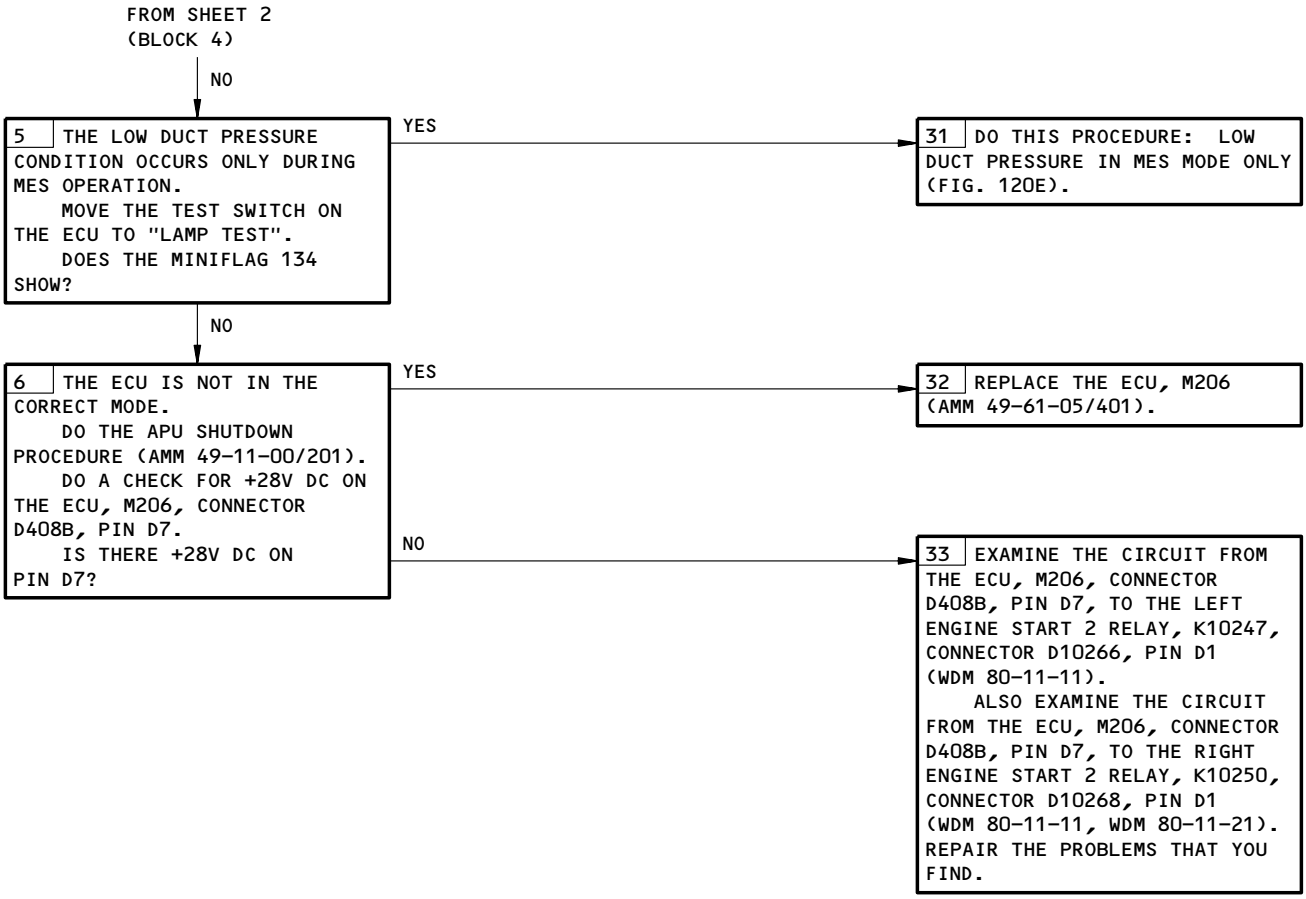
[1] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Low Duct Pressure
Figure 120 (Sheet 1)

L16998



Low Duct Pressure
Figure 120 (Sheet 2)



Low Duct Pressure
Figure 120 (Sheet 3)

Not Used
Figure 120A

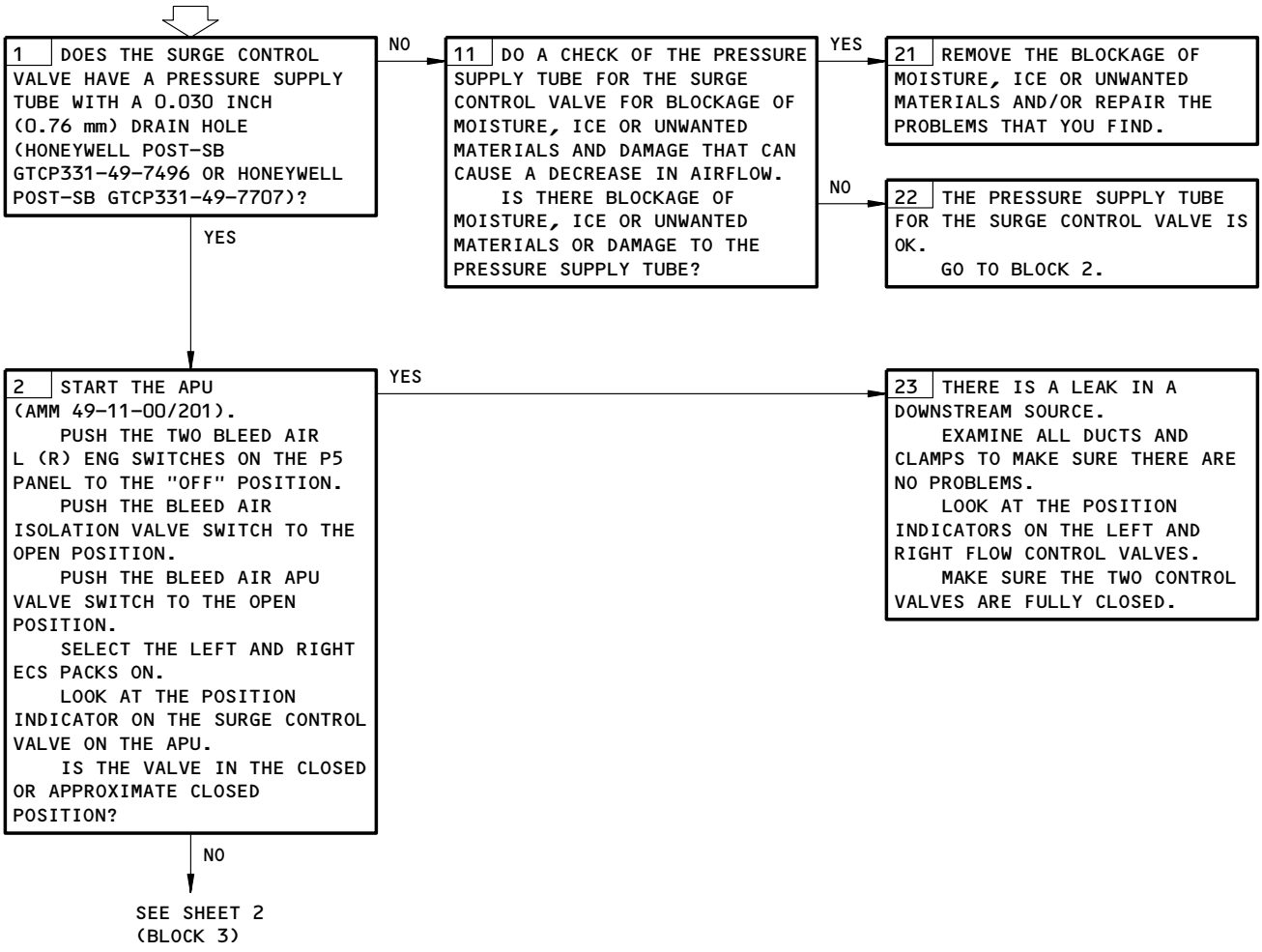
LOW DUCT PRESSURE IN DUCT PRESSURIZATION MODE (3-25 PSIG)

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
APU START NORMAL (AMM 49-11-00/201)

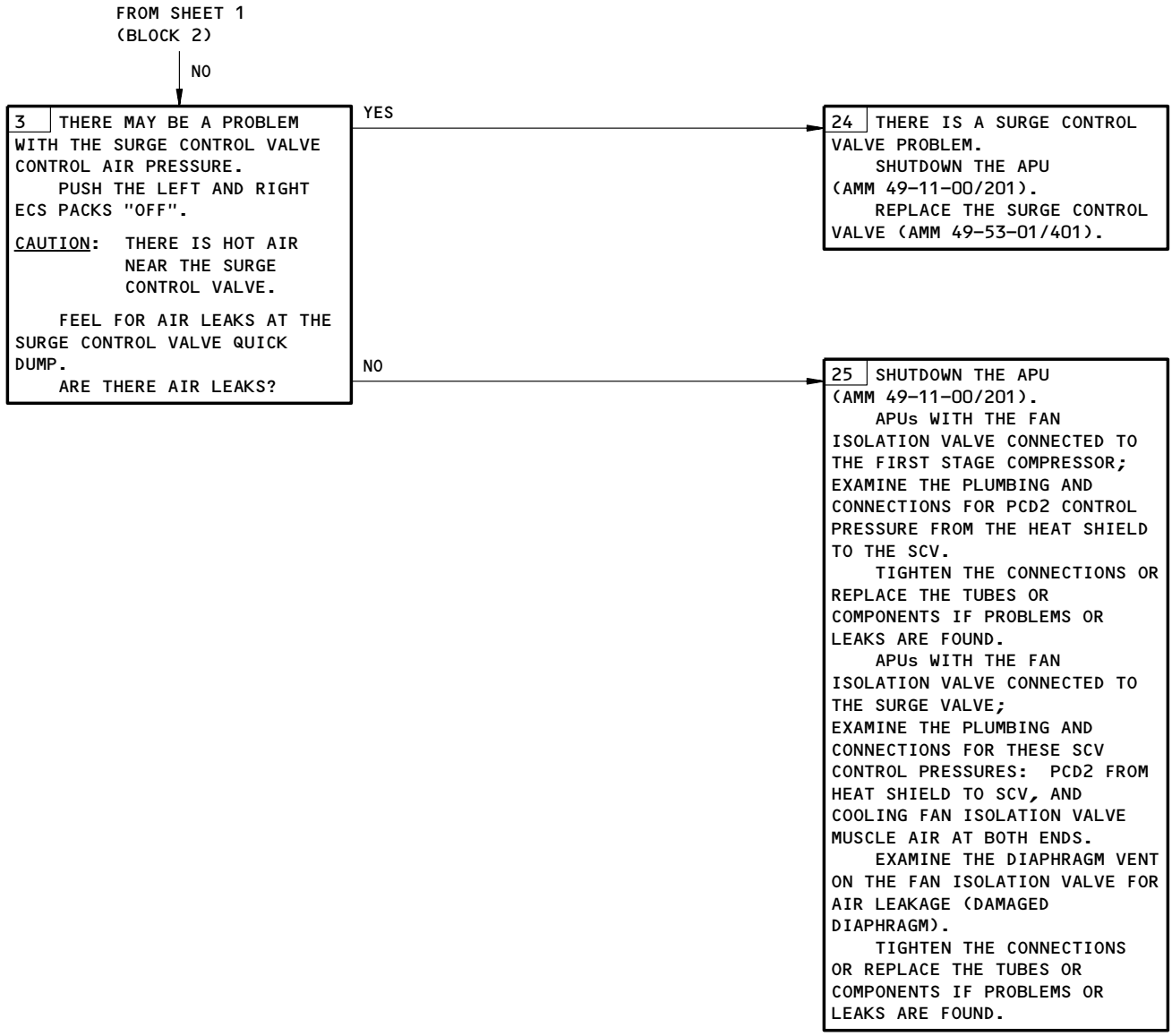
MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [1], APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)



[1] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Low Duct Pressure in Duct Pressurization Mode (3-25 PSIG)
Figure 120B (Sheet 1)



Low Duct Pressure in Duct Pressurization Mode (3-25 PSIG)
Figure 120B (Sheet 2)

LOW DUCT PRESSURE IN ALL OPERATIONAL MODES: ECS, MES AND DUCT PRESSURIZATION

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
APU START NORMAL (AMM 49-11-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [2], APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 DOES THE SURGE CONTROL VALVE HAVE A PRESSURE SUPPLY TUBE WITH A 0.030 INCH (0.76 mm) DRAIN HOLE (HONEYWELL POST-SB GTCP331-49-7496 OR HONEYWELL POST-SB GTCP331-49-7707)?

NO → 10 DO A CHECK OF THE PRESSURE SUPPLY TUBE FOR THE SURGE CONTROL VALVE FOR BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS AND DAMAGE THAT CAN CAUSE A DECREASE IN AIRFLOW.
IS THERE BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS OR DAMAGE TO THE PRESSURE SUPPLY TUBE?

YES → 40 REMOVE THE BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS AND/OR REPAIR THE PROBLEMS THAT YOU FIND.

NO → 41 THE PRESSURE SUPPLY TUBE FOR THE SURGE CONTROL VALVE IS OK.
GO TO BLOCK 1A.

YES

1A START THE APU (AMM 49-11-00/201).
SELECT THE LEFT AND RIGHT ECS PACKS "ON".
MOVE THE TEST SWITCH ON THE ECU TO "LAMP TEST".
DOES THE MINIFLAG 133 SHOW?

NO → 11 THE ECU IS NOT IN THE ECS MODE.
DO THIS TASK: APU SHUTDOWN PROCEDURE (AMM 49-11-00/201).
DISCONNECT THE ELECTRICAL CONNECTOR D2770 FROM THE LEFT FLOW CONTROL AND SHUTOFF VALVE, V16 (WDM 21-51-11).
PUSH THE "C ISLN VALVE" SWITCH/LIGHT ON THE BLEED AIR SUPPLY PANEL, M15 TO THE "ON" POSITION.
SELECT THE LEFT AND RIGHT ECS PACKS TO "ON".
REMOVE THE ECU, M206 (AMM 49-61-05/401).
DO A CHECK FOR +28V DC ON THE ECU, M206, CONNECTOR D408B, PIN D5 (WDM 73-21-15).
RE-CONNECT ELECTRICAL CONNECTOR D2770.
IS THERE +28V DC ON PIN D5?

YES → 42 REPLACE THE ECU, M206 (AMM 49-61-05/401).

NO → 43 EXAMINE THE CIRCUIT FROM THE ELECTRICAL SYSTEMS CARD FILE, P50, TB182, PIN YC5, TO THE ECU, M206, CONNECTOR D408B, PIN D5 (WDM 73-21-15). REPAIR THE PROBLEMS THAT YOU FIND.

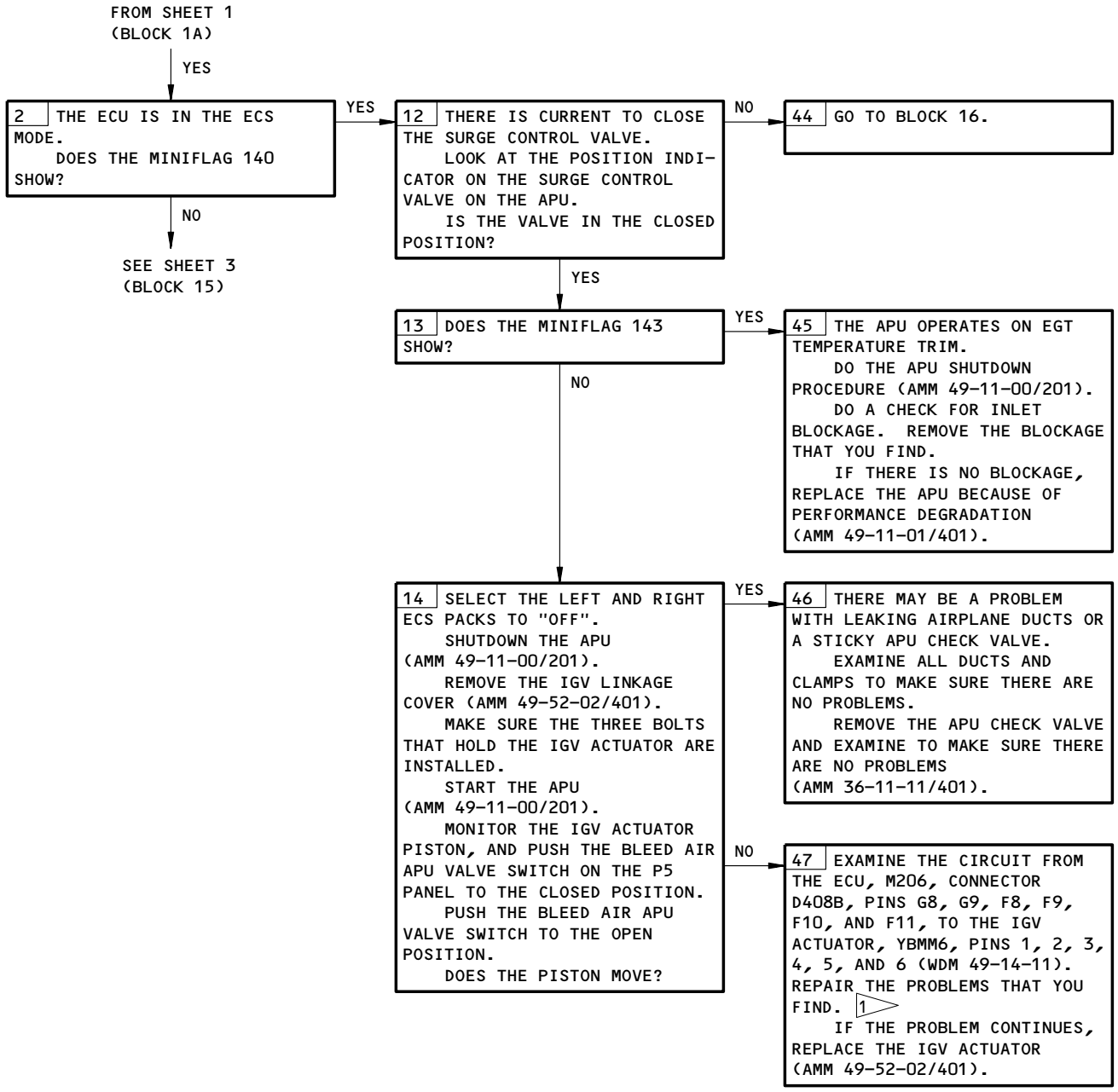
YES

SEE SHEET 2 (BLOCK 2)

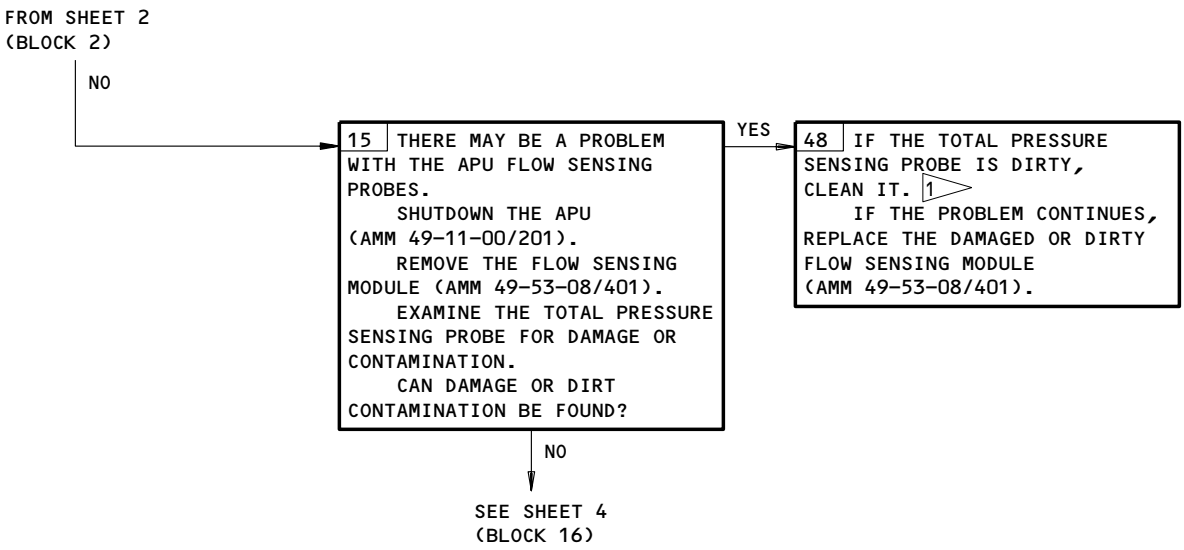
[1] OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

[2] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

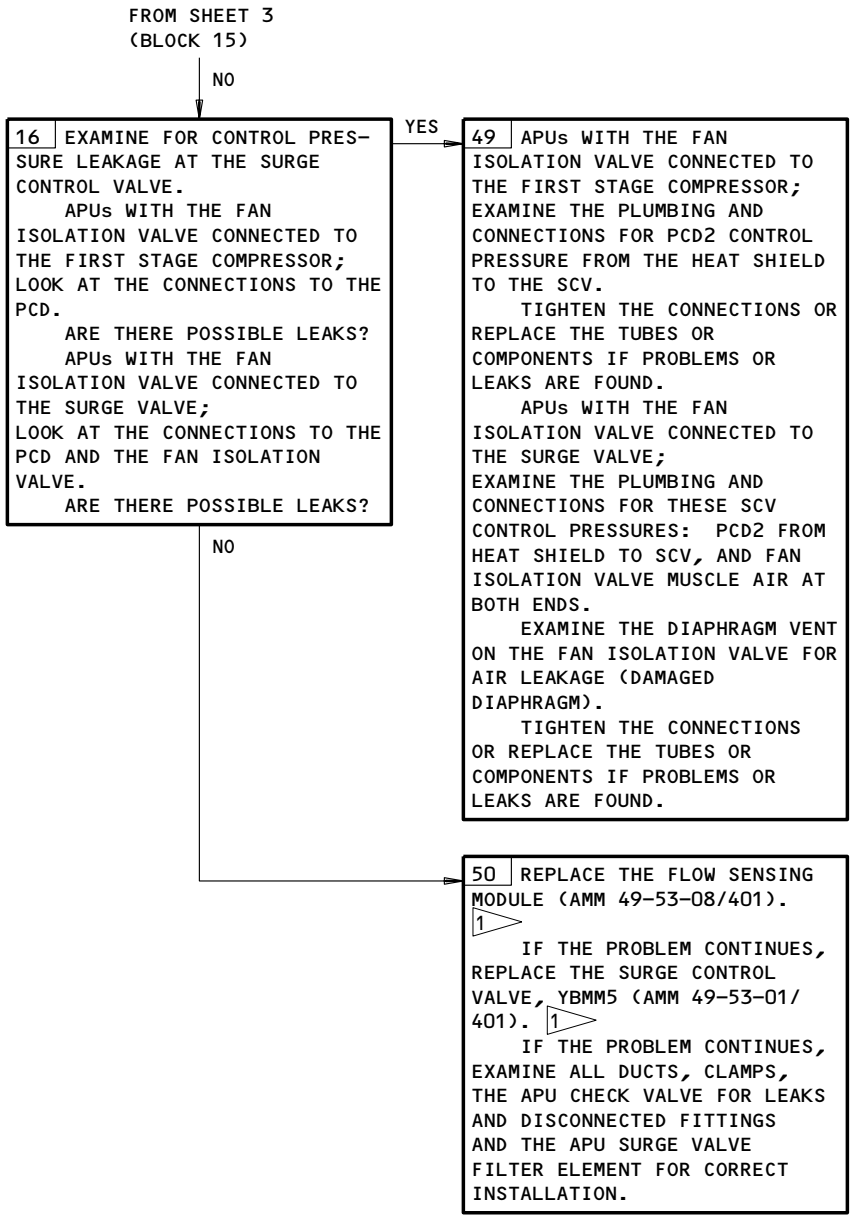
Low Duct Pressure in All Operational Modes:
ECS, MES and Duct Pressurization
Figure 120C (Sheet 1)



Low Duct Pressure in All Operational Modes:
ECS, MES and Duct Pressurization
Figure 120C (Sheet 2)



Low Duct Pressure in All Operational Modes:
ECS, MES and Duct Pressurization
Figure 120C (Sheet 3)



Low Duct Pressure in All Operational Modes:
ECS, MES and Duct Pressurization
Figure 120C (Sheet 4)

LOW DUCT PRESSURE DURING ONE OR TWO ECS PACK OPERATION ONLY

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
APU START NORMAL (AMM 49-11-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 1,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 DOES THE SURGE CONTROL VALVE HAVE A PRESSURE SUPPLY TUBE WITH A 0.030 INCH (0.76 mm) DRAIN HOLE (HONEYWELL POST-SB GTCP331-49-7496 OR HONEYWELL POST-SB GTCP331-49-7707)?

NO → 11 DO A CHECK OF THE PRESSURE SUPPLY TUBE FOR THE SURGE CONTROL VALVE FOR BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS AND DAMAGE THAT CAN CAUSE A DECREASE IN AIRFLOW.
IS THERE BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS OR DAMAGE TO THE PRESSURE SUPPLY TUBE?

YES → 21 REMOVE THE BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS AND/OR REPAIR THE PROBLEMS THAT YOU FIND.

NO → 22 THE PRESSURE SUPPLY TUBE FOR THE SURGE CONTROL VALVE IS OK.
GO TO BLOCK 2.

YES

2 START THE APU (AMM 49-11-00/201).
PUSH THE TWO BLEED AIR L (R) ENG SWITCHES ON THE P5 PANEL TO THE "OFF" POSITION.
PUSH THE ISOLATION VALVE TO THE OPEN POSITION.
PUSH THE THE TRIM AIR SWITCH TO THE "OFF" POSITION.
SET THE L PACK TO STBY "C" AND WRITE THE PRESSURE FROM THE EICAS ECS PAGE.
SET THE L PACK TO STBY "W".
ARE THE DUCT PRESSURES UNDER THE TWO CONDITIONS WITHIN 2 PSI?

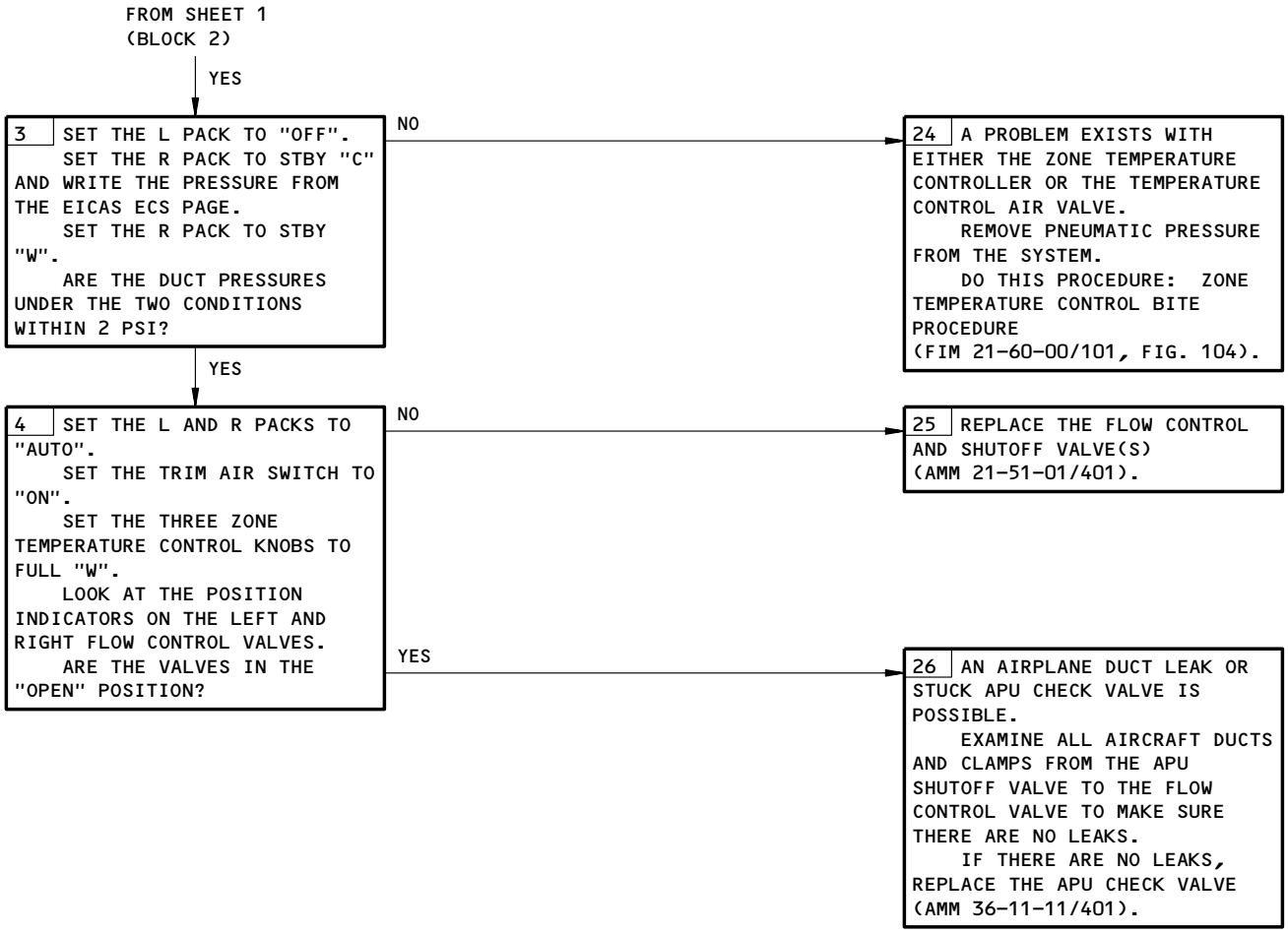
NO → 23 A PROBLEM EXISTS WITH EITHER THE ZONE TEMPERATURE CONTROLLER OR THE TEMPERATURE CONTROL AIR VALVE.
REMOVE PNEUMATIC PRESSURE FROM THE SYSTEM.
DO THIS PROCEDURE: ZONE TEMPERATURE CONTROL BITE PROCEDURE (FIM 21-60-00/101, FIG. 104).

YES

SEE SHEET 2
(BLOCK 3)

1 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Low Duct Pressure During One or Two ECS Pack Operation Only
Figure 120D (Sheet 1)



Low Duct Pressure During One or Two ECS Pack Operation Only
Figure 120D (Sheet 2)

LOW DUCT PRESSURE IN "MES" MODE ONLY

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
APU START NORMAL (AMM 49-11-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [1], APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 DOES THE SURGE CONTROL VALVE HAVE A PRESSURE SUPPLY TUBE WITH A 0.030 INCH (0.76 mm) DRAIN HOLE (HONEYWELL POST-SB GTCP331-49-7496 OR HONEYWELL POST-SB GTCP331-49-7707)?

NO → 11 DO A CHECK OF THE PRESSURE SUPPLY TUBE FOR THE SURGE CONTROL VALVE FOR BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS AND DAMAGE THAT CAN CAUSE A DECREASE IN AIRFLOW.
IS THERE BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS OR DAMAGE TO THE PRESSURE SUPPLY TUBE?

YES → 21 REMOVE THE BLOCKAGE OF MOISTURE, ICE OR UNWANTED MATERIALS AND/OR REPAIR THE PROBLEMS THAT YOU FIND.

NO → 22 THE PRESSURE SUPPLY TUBE FOR THE SURGE CONTROL VALVE IS OK.
GO TO BLOCK 2.

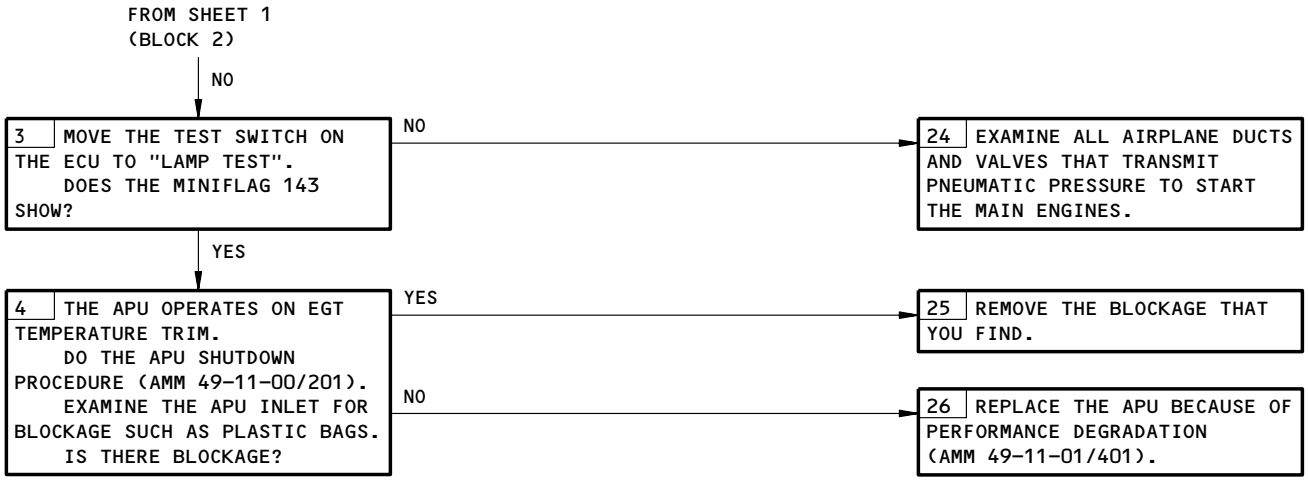
YES → 2 DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
START THE APU (AMM 49-11-00/201).
PUSH THE TWO BLEED AIR L (R) ENG SWITCHES ON THE P5 PANEL TO THE "OFF" POSITION.
PUSH THE BLEED AIR APU VALVE SWITCH TO THE OPEN POSITION.
OPERATE THE APU IN THE "MES" MODE.
OBSERVE THE LOW DUCT PRESSURE PROBLEM.
DOES THE LOW DUCT PRESSURE CONDITION OCCUR ONLY DURING THE "MES" OPERATION FOR THE SECOND ENGINE?

YES → 23 REPLACE THE FLOW SENSING MODULE (AMM 49-53-08/401).

NO → SEE SHEET 2 (BLOCK 3)

[1] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Low Duct Pressure in MES Mode Only
Figure 120E (Sheet 1)



Low Duct Pressure in MES Mode Only
Figure 120E (Sheet 2)

W41904

FLUIDS COMING FROM DRAIN MAST

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
APU START NORMAL (AMM 49-11-00/201)

1 IF YOU DO NOT KNOW WHICH DRAIN MAST TUBE THE FLUID COMES FROM, START THE APU (AMM 49-11-00/201).
DOES FLUID COME OUT OF THE DRAIN FOR THE FUEL CONTROL, OIL PUMP, AND IGV ACTUATOR?

YES → 6 IS THE FLUID OIL?

YES → 11 DO THE APU SHUTDOWN PROCEDURE (AMM 49-11-00/201).
REPLACE THE FUEL CONTROL UNIT, YBMM4 (AMM 49-31-01/401).

NO → 7 DISCONNECT THE DRAIN LINE FROM THE IGV ACTUATOR.
START AND OPERATE THE APU (AMM 49-11-00/201).
DOES MORE THAN ONE DROP OF FUEL COME OUT OF THE IGV ACTUATOR IN A MINUTE?

YES → 12 DO THE APU SHUTDOWN PROCEDURE (AMM 49-11-00/201).
REPLACE THE IGV ACTUATOR, YBMM6 (AMM 49-52-02/401).

NO → 13 DO THE APU SHUTDOWN PROCEDURE (AMM 49-11-00/201).
REPLACE THE FUEL CONTROL UNIT, YBMM4 (AMM 49-31-01/401).

NO → 2 DO YOU SEE MORE THAN ONE DROP OF FUEL COME OUT OF THE DRAIN FOR THE FUEL FLOW DIVIDER AND HEAT SHIELD IN ONE MINUTE?

NOTE: FUEL CAN DRAIN FROM THIS LOCATION DURING A SHUTDOWN OR AN UNSATISFACTORY START. FUEL MUST NOT DRAIN WHEN YOU OPERATE THE APU.

YES → 14 REPLACE THE FUEL FLOW DIVIDER, YBMM2 (AMM 49-31-03/401).

NO → 3 DOES OIL COME OUT OF THE DRAIN FOR THE BEARING CAVITY SEAL OR THE DRAIN FOR THE TURBINE PLENUM?

YES → 15 NO CORRECTIVE STEPS ARE NECESSARY, PROVIDED THE APU OIL CONSUMPTION RATE IS NOT MORE THAN THE LIMIT (AMM 49-11-00/201).
IF THE RATE IS MORE THAN THE LIMIT, REPLACE THE APU (AMM 49-11-01/401).

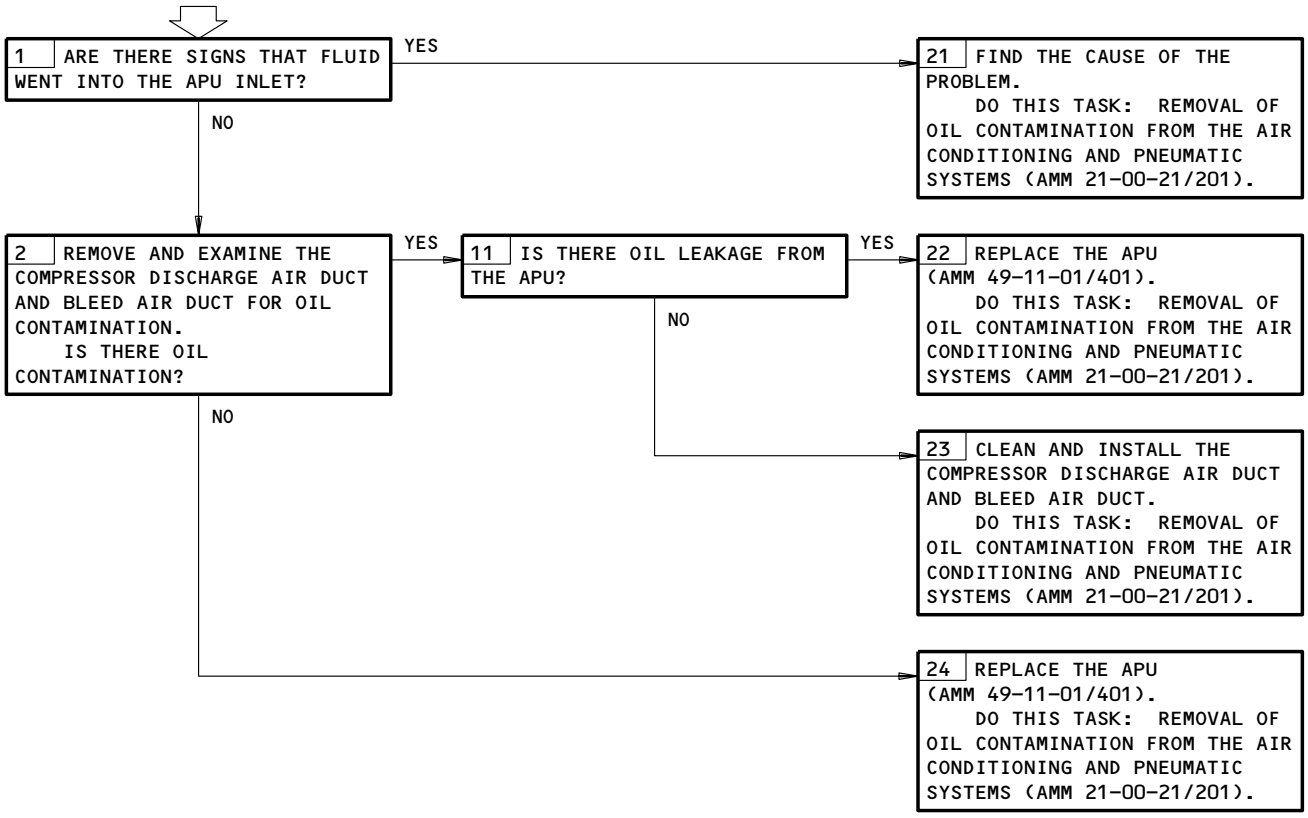
NO → 16 WHEN FUEL COMES OUT OF THE TURBINE PLENUM DRAIN DURING A SHUTDOWN OR AN UNSATISFACTORY START, THE COMBUSTOR DRAIN VALVE IS CLOGGED.
REPLACE THE VALVE (AMM 49-16-01/401).

Fluids Coming from Drain Mast
Figure 121

FUMES AND/OR SMOKE IN THE CABIN

PREREQUISITES

NONE



Fumes and/or Smoke in the Cabin
Figure 122

FAULTY LRU – "FUEL SOL" ON BITE

PREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [2], APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
REPLACE THE FUEL SOLENOID VALVE, YBMV1 (AMM 49-31-02/401). [1]
DOES THE PROBLEM CONTINUE?

NO → 20 THE SYSTEM IS OK.

YES

2 DID THE MINIFLAG 25 COME ON?

YES → 10 THE FUEL SOLENOID CIRCUIT IS OPEN OR SHORTED.
DID THE MINIFLAG 90 ALSO COME ON?

YES → 21 REPAIR THE OPEN CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS F6 AND F7, TO THE FUEL SOLENOID, YBMV1, CONNECTOR P9, PINS 1 AND 2 (WDM 49-14-11).

NO → 22 REPAIR THE SHORT CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS F6 AND F7, TO THE FUEL SOLENOID, YBMV1, CONNECTOR P9, PINS 1 AND 2 (WDM 49-14-11).

NO

3 DID THE MINIFLAG 108 COME ON?

YES → 23 THE APU DID NOT STOP WHEN THE ECU TRIED TO CLOSE THE SOLENOID. THE FUEL SOLENOID CAN NOT MOVE FREELY. REPLACE THE FUEL SOLENOID VALVE, YBMV1 (AMM 49-31-02/401).

NO → 24 REPLACE THE ECU, M206 (AMM 49-61-05/401).

[1] OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

[2] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU – FUEL SOL on BITE
Figure 123

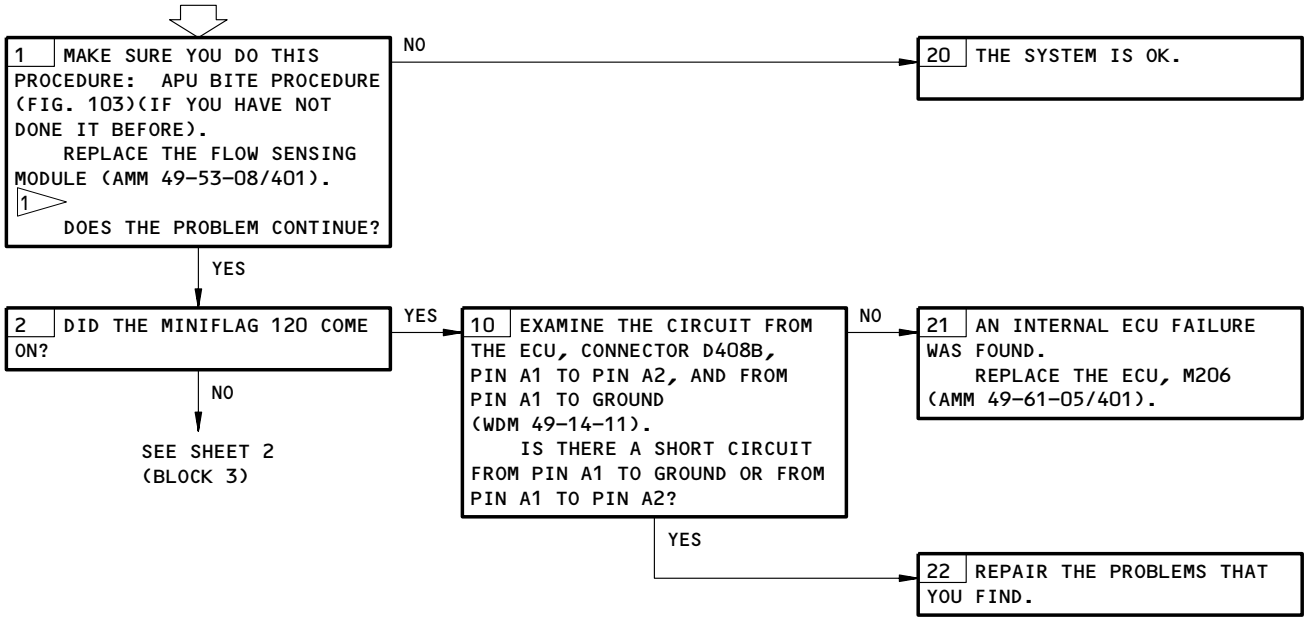
FAULTY LRU – "PT SENSOR" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [2], APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

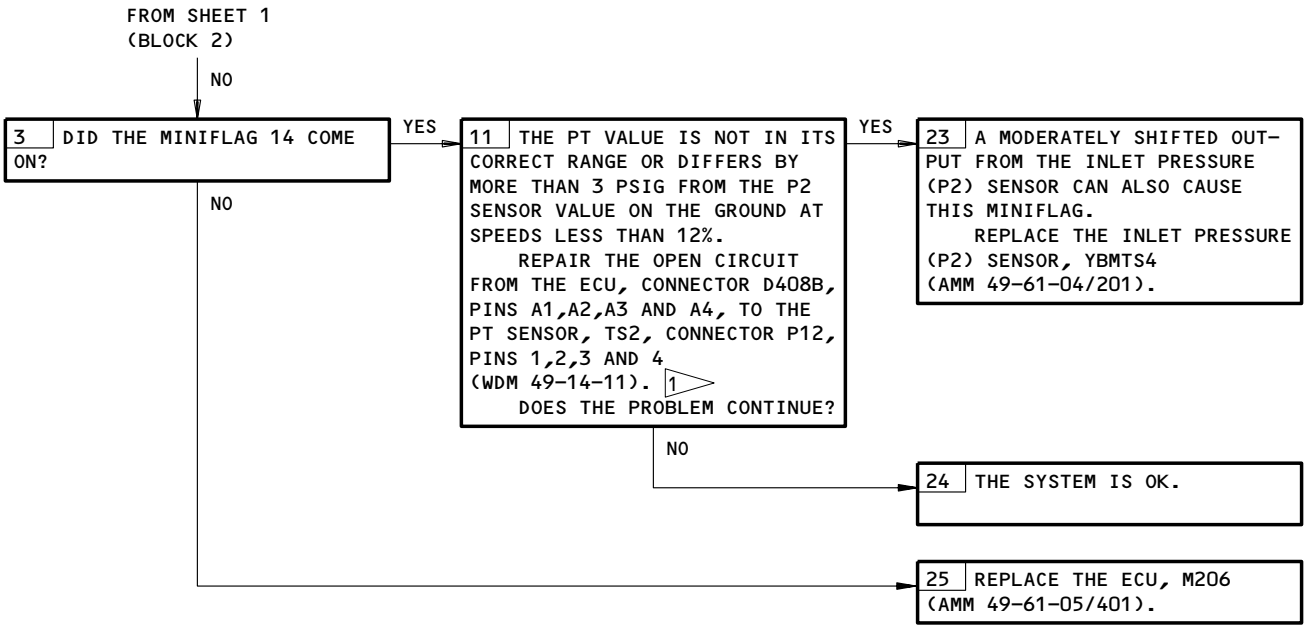
MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)



[1] OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

[2] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU – PT SENSOR on BITE
Figure 124 (Sheet 1)



Faulty LRU - PT SENSOR on BITE
Figure 124 (Sheet 2)

E77844

FAULTY LRU – "ΔP SENSOR" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [2], APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
REPLACE THE FLOW SENSING MODULE (AMM 49-53-08/401).
[1]
DOES THE PROBLEM CONTINUE?

NO → 20 THE SYSTEM IS OK.

YES

2 DID THE MINIFLAG 120 COME ON?

YES → 10 EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PIN A1 TO PIN A2, AND FROM PIN A1 TO GROUND (WDM 49-14-11).
IS THERE A SHORT CIRCUIT FROM PIN A1 TO GROUND OR FROM PIN A1 TO PIN A2?

NO → 21 AN INTERNAL ECU FAILURE WAS FOUND.
REPLACE THE ECU, M206 (AMM 49-61-05/401).

YES → 22 REPAIR THE PROBLEMS THAT YOU FIND.

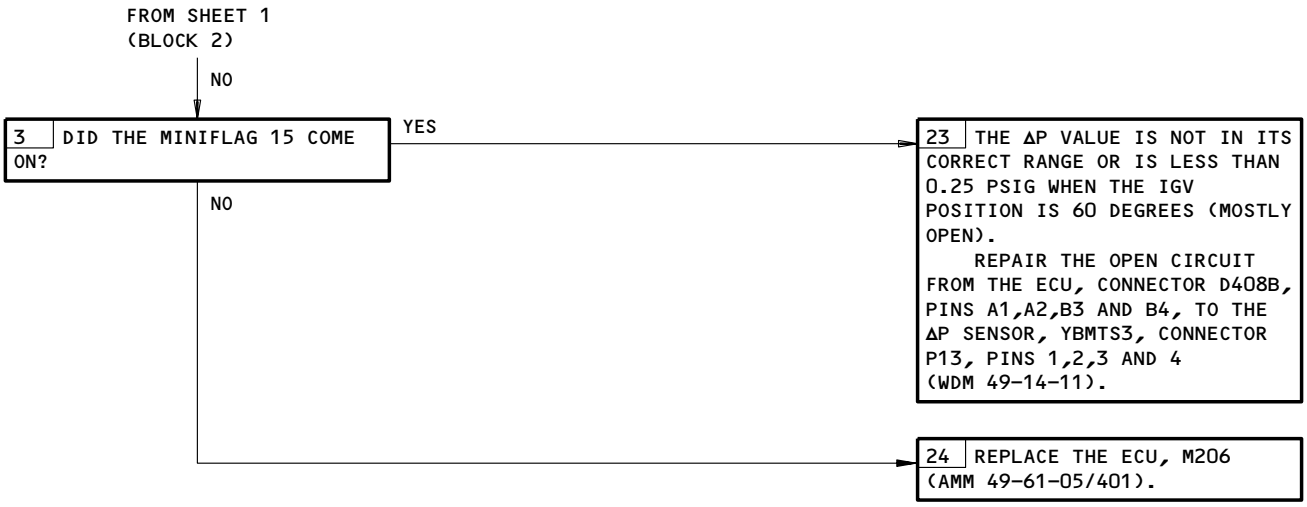
NO

SEE SHEET 2
(BLOCK 3)

[1] OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

[2] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU – Delta P SENSOR on BITE
Figure 125 (Sheet 1)



Faulty LRU - Delta P SENSOR on BITE
Figure 125 (Sheet 2)

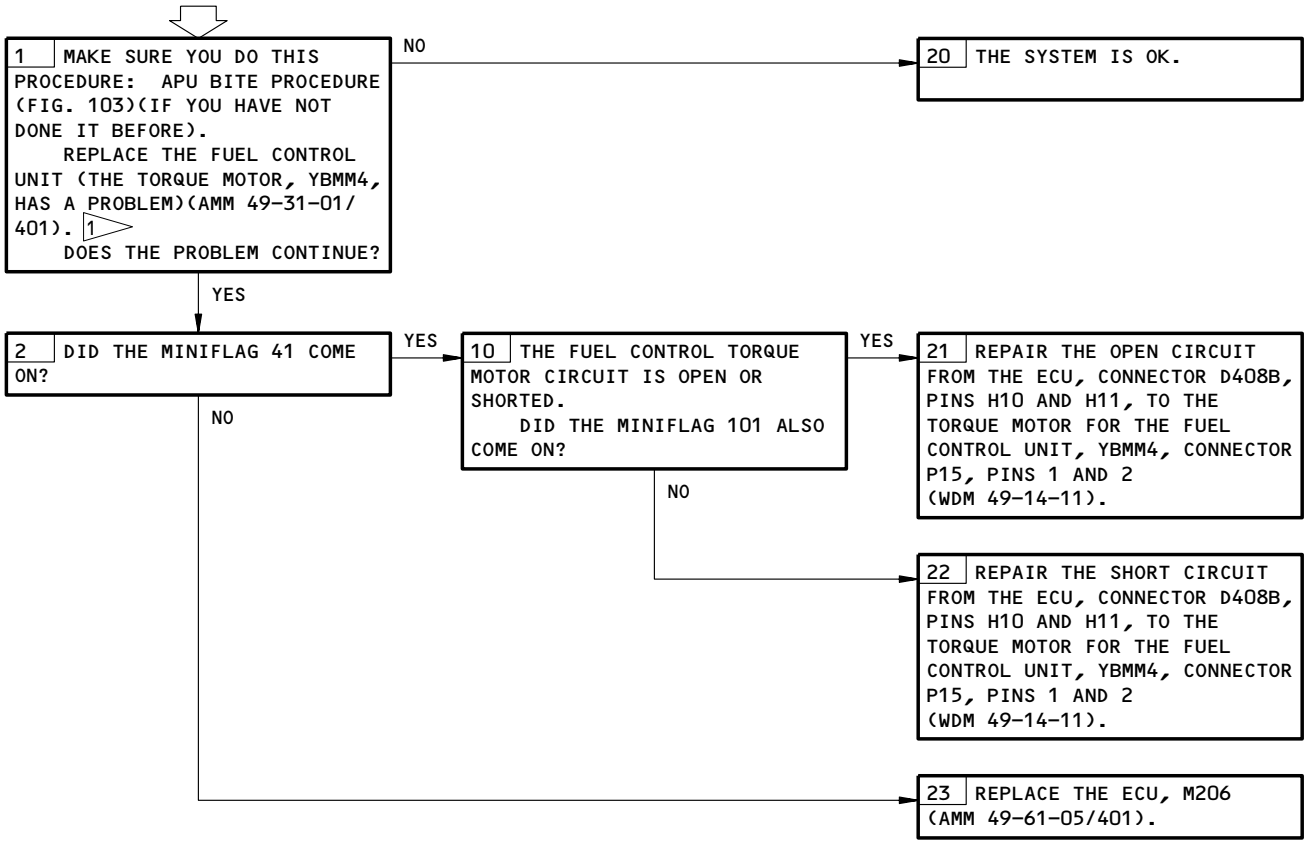
FAULTY LRU – "FUEL CONTROL" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 2,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)



1 OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

2 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU – FUEL CONTROL on BITE
Figure 126

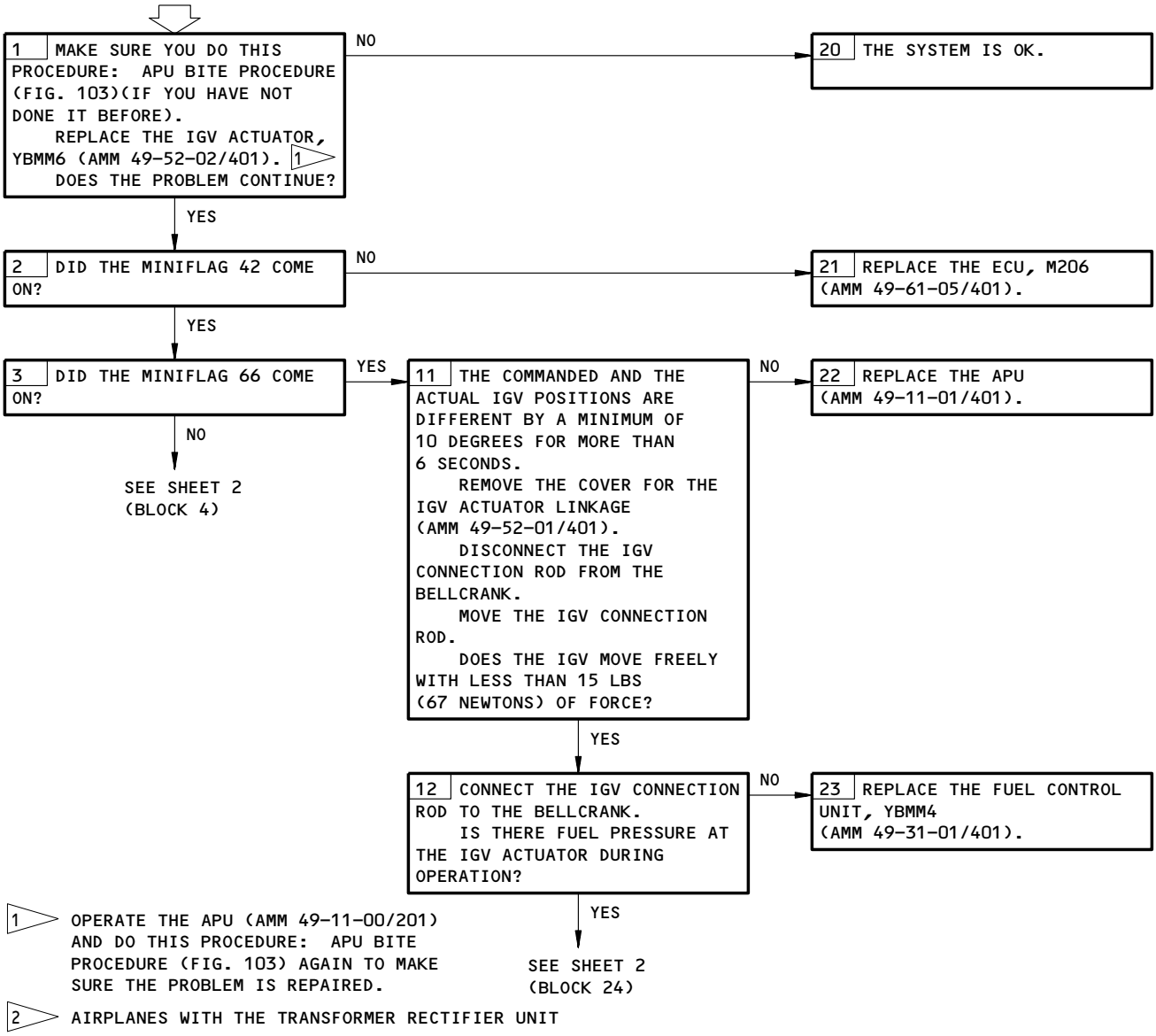
FAULTY LRU – "IGV ACT" ON BITE

PREREQUISITES

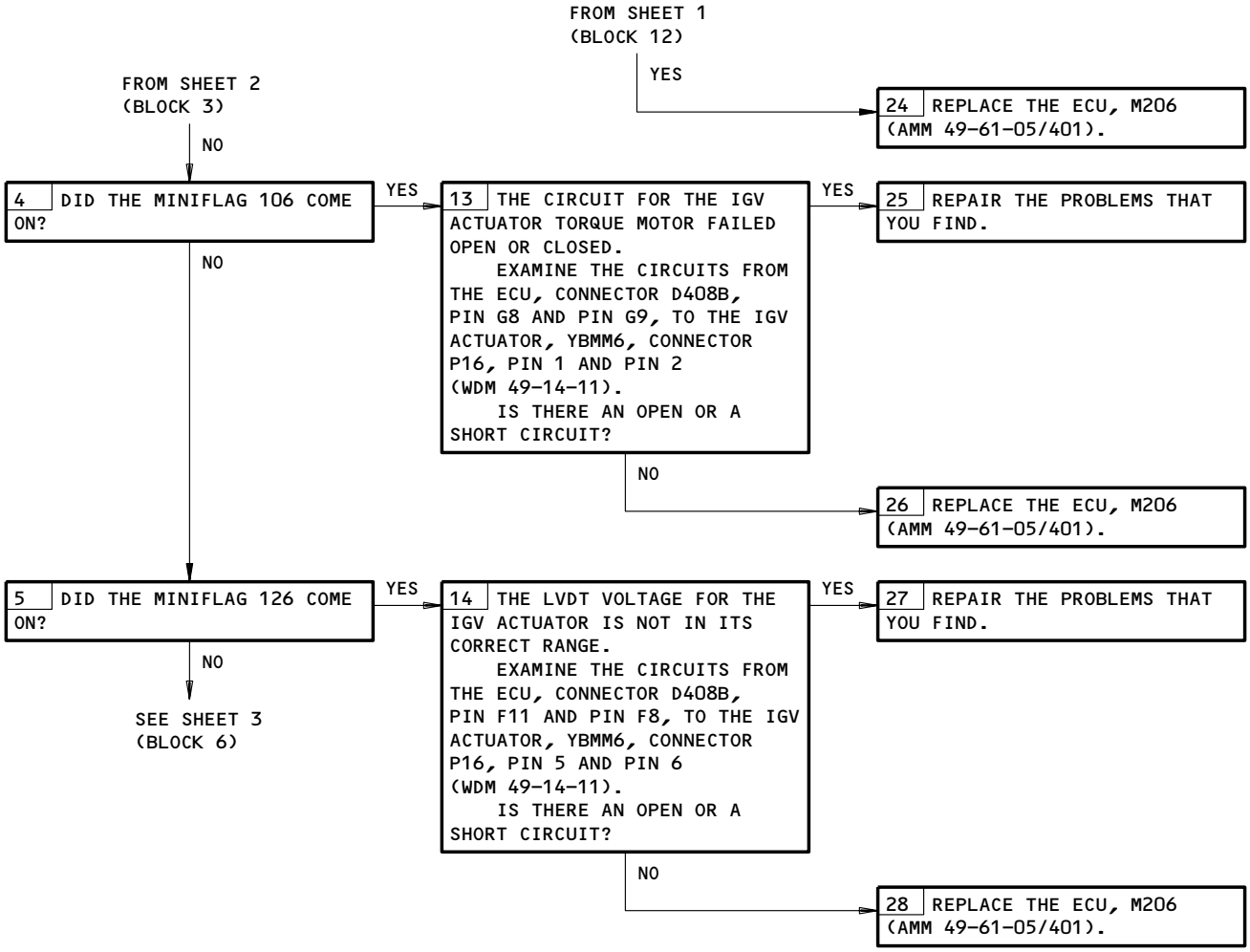
MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [2], APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

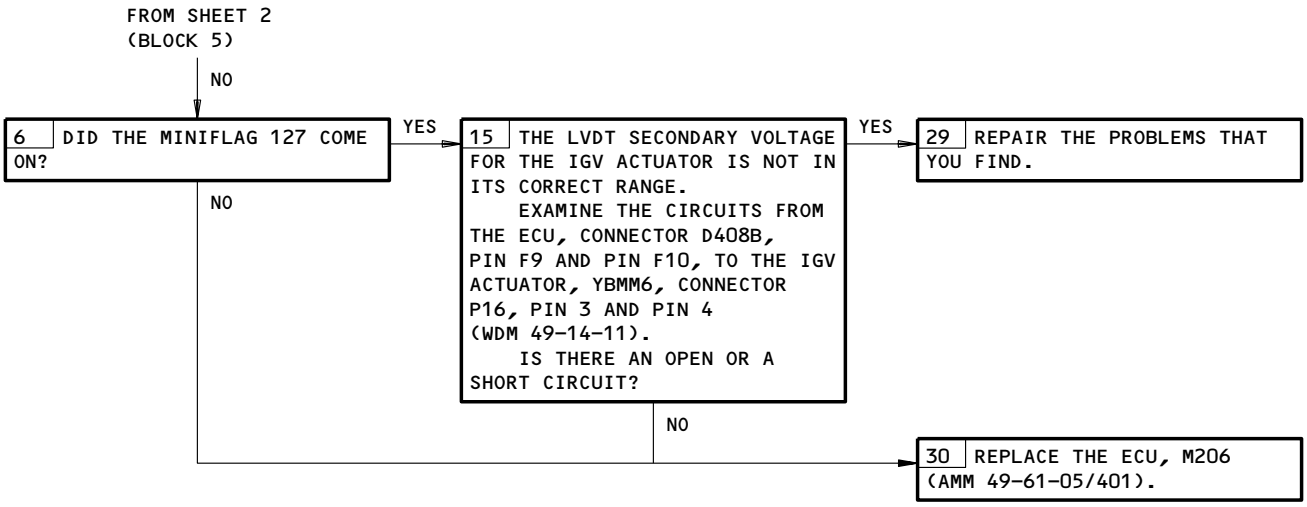


Faulty LRU – IGV ACT on BITE
Figure 127 (Sheet 1)



Faulty LRU - IGV ACT on BITE
Figure 127 (Sheet 2)

E77850



Faulty LRU - IGV ACT on BITE
Figure 127 (Sheet 3)

E77851

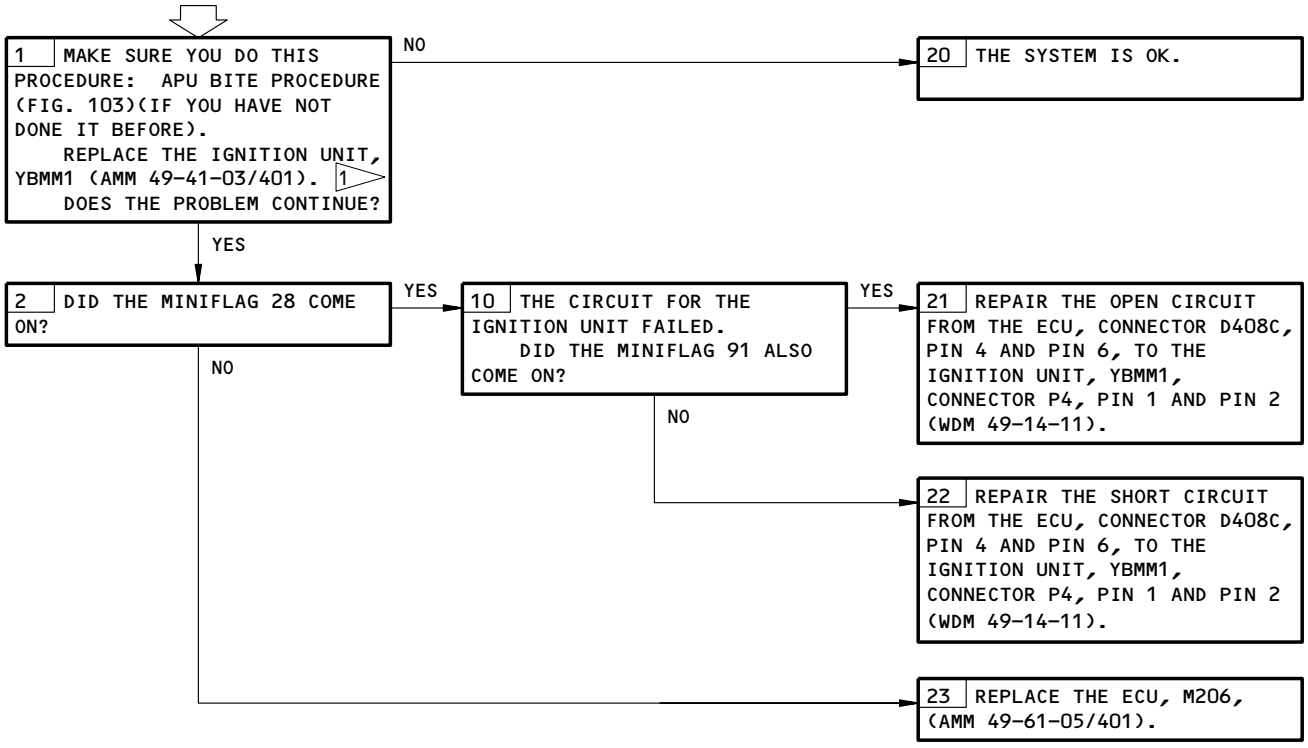
PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 2,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

FAULTY LRU - "IGN UNIT" ON BITE



1 OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

2 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU - IGN UNIT on BITE
Figure 128

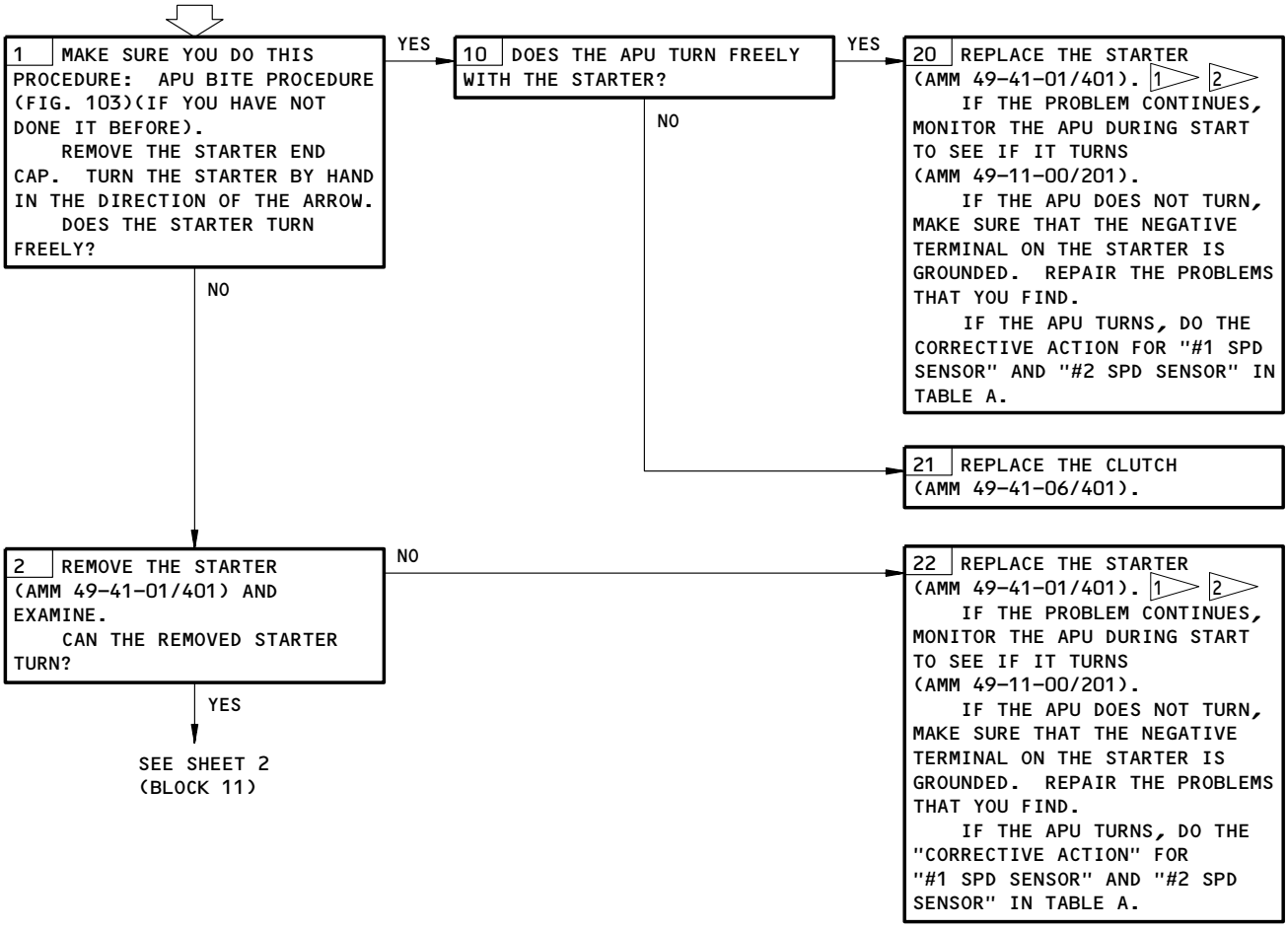
PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 3>,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

FAULTY LRU - "APU STARTER" ON BITE

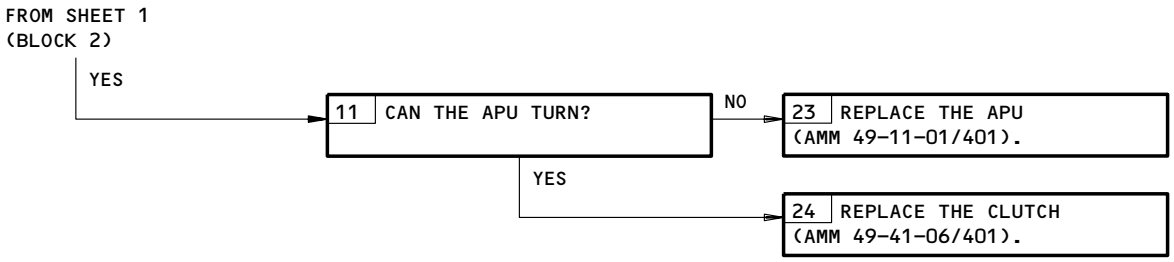


1> OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

2> IF TWO APU STARTER MOTORS ARE REPLACED IN LESS THAN 30 DAYS, REPLACE THE APU STARTER MOTOR, M893 (AMM 49-41-01/401), AND THE APU STARTER CLUTCH (AMM 49-41-06/401).

3> AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU - APU STARTER on BITE
Figure 129 (Sheet 1)



Faulty LRU - APU STARTER on BITE
Figure 129 (Sheet 2)

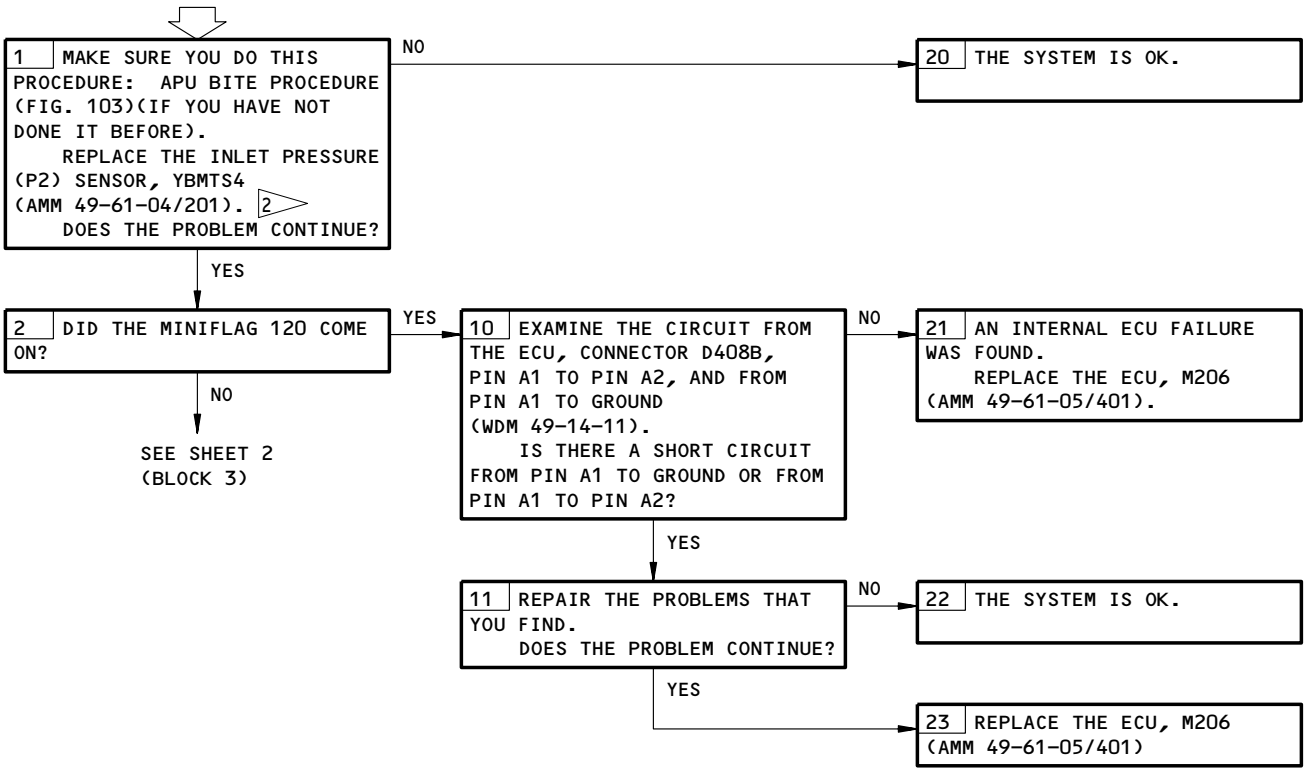
PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 3,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

FAULTY LRU - "P2 SENSOR" ON BITE

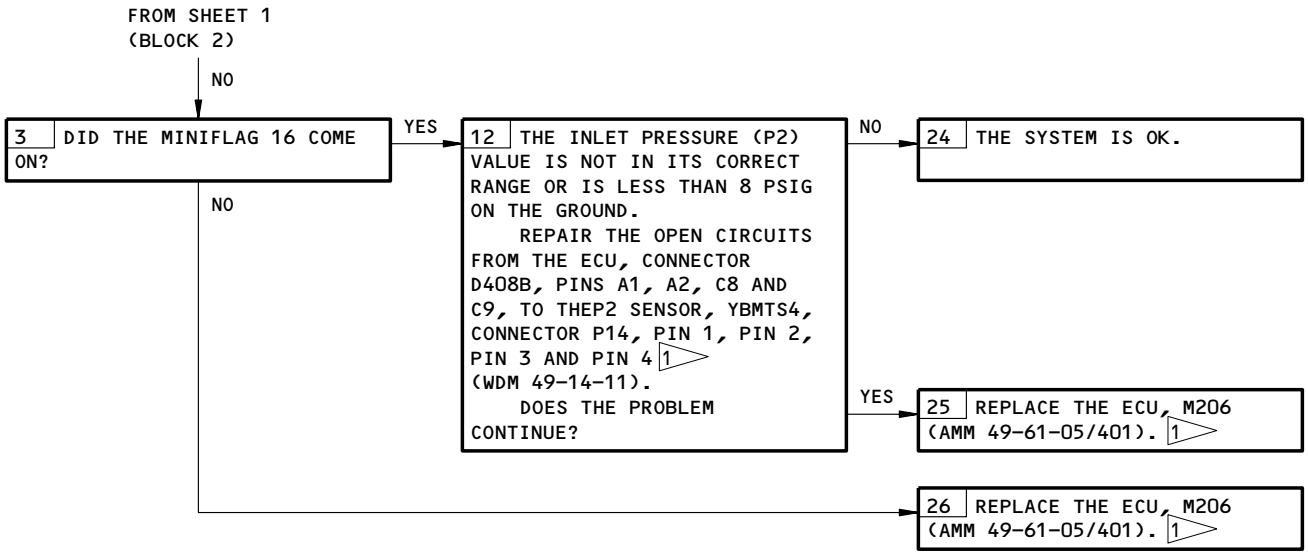


1 ERASE THE "APU BITE" MESSAGE ON EICAS IF IT SHOWS (FIM 31-41-00/101, FIG. 109).

2 DO THE SELF-TEST (FIG. 103, BLOCK 3) TO MAKE SURE THE PROBLEM IS REPAIRED.

3 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU - P2 SENSOR on BITE
Figure 130 (Sheet 1)



Faulty LRU - P2 SENSOR on BITE
Figure 130 (Sheet 2)

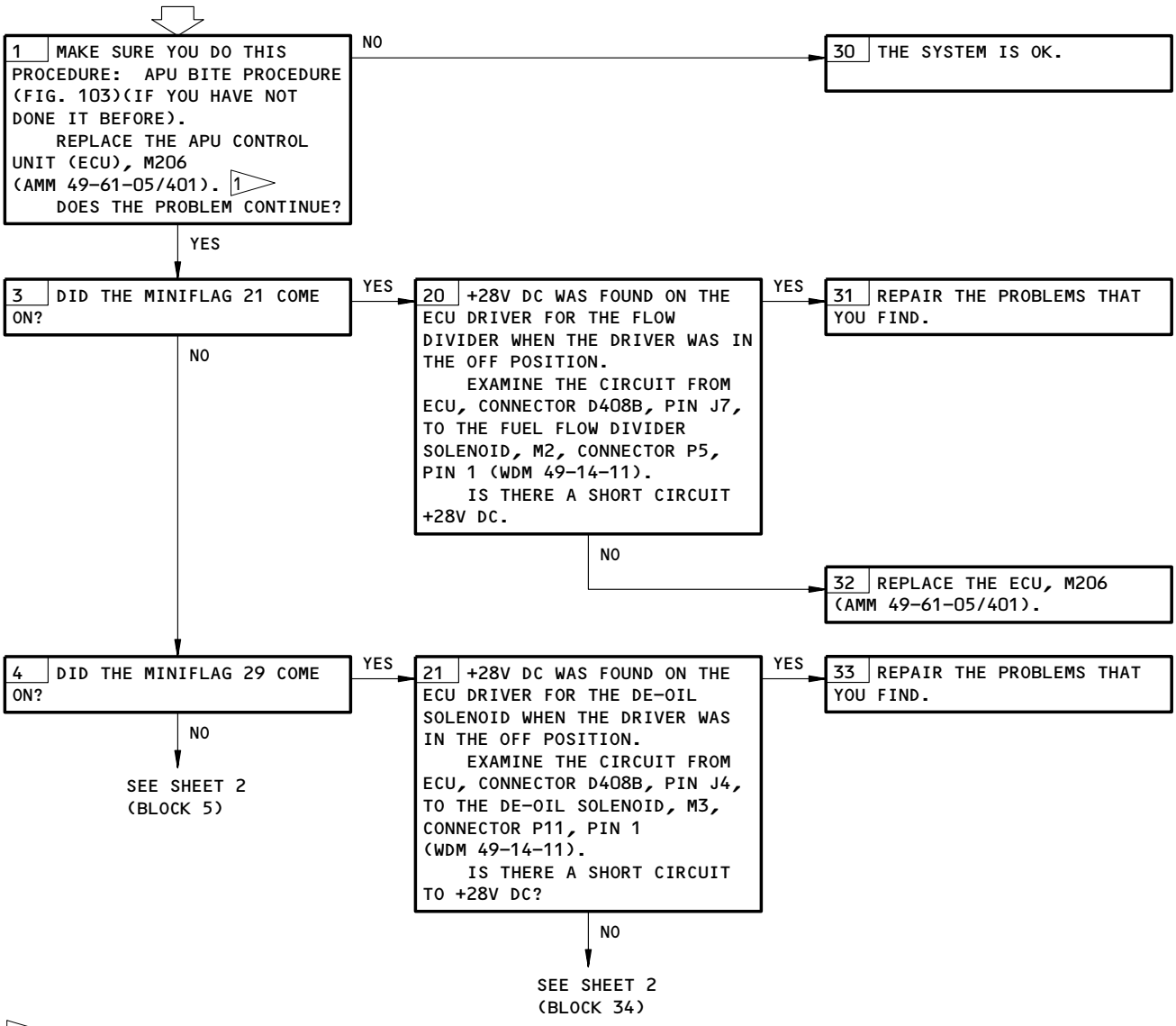
PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 2,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

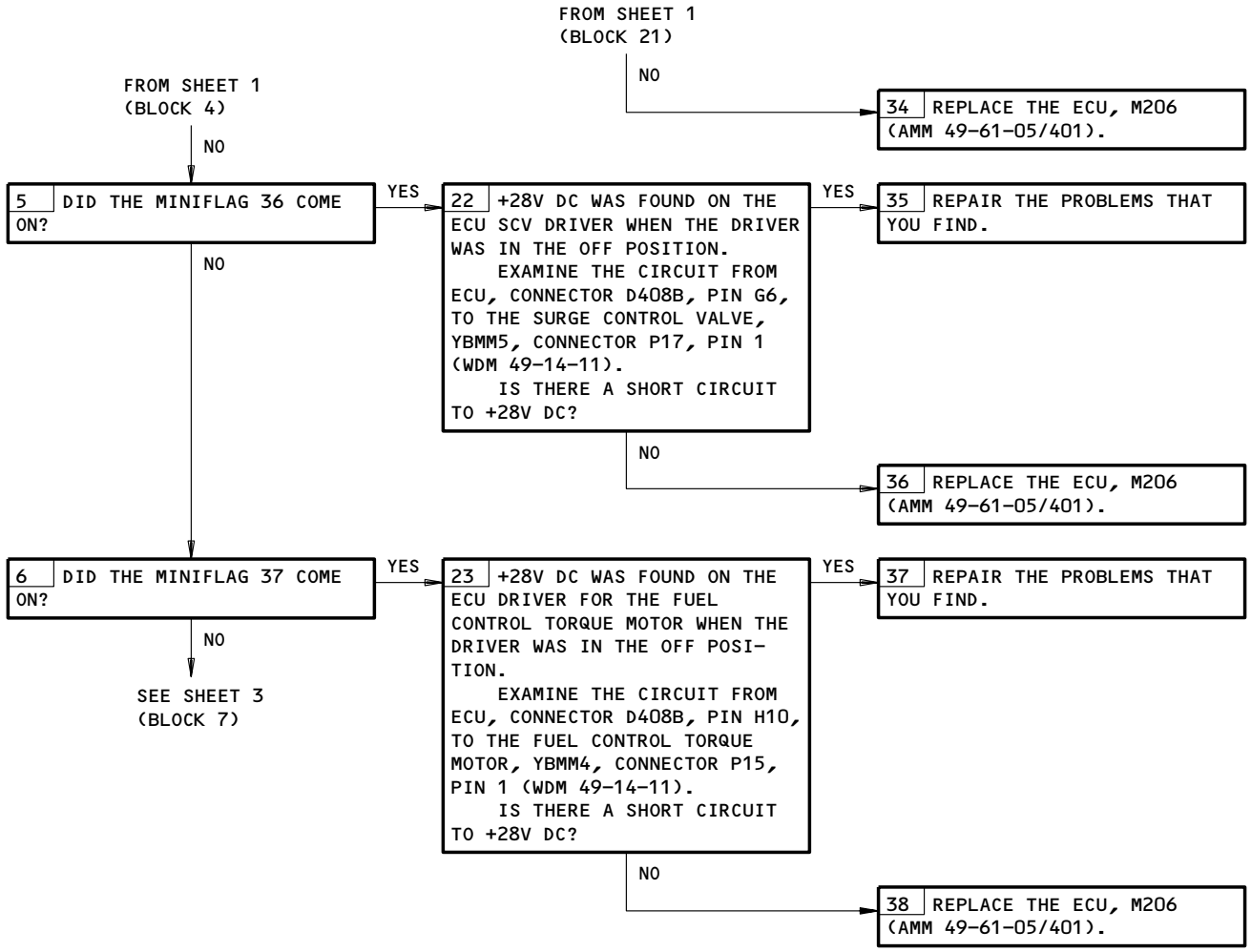
FAULTY LRU - "ECU" ON BITE



1 DO THIS PROCEDURE: SELF-TEST (FIG. 103, BLOCK 3) TO MAKE SURE THE PROBLEM IS REPAIRED.

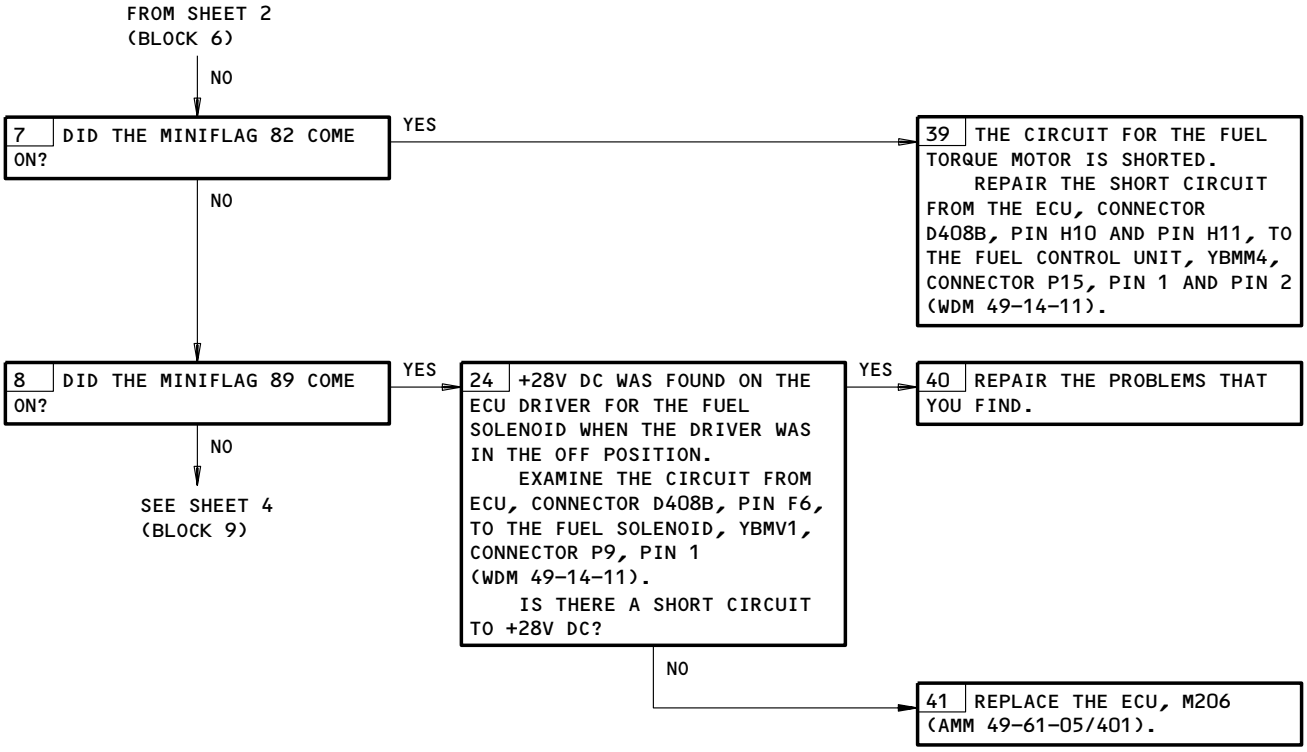
2 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU - ECU on BITE
Figure 131 (Sheet 1)



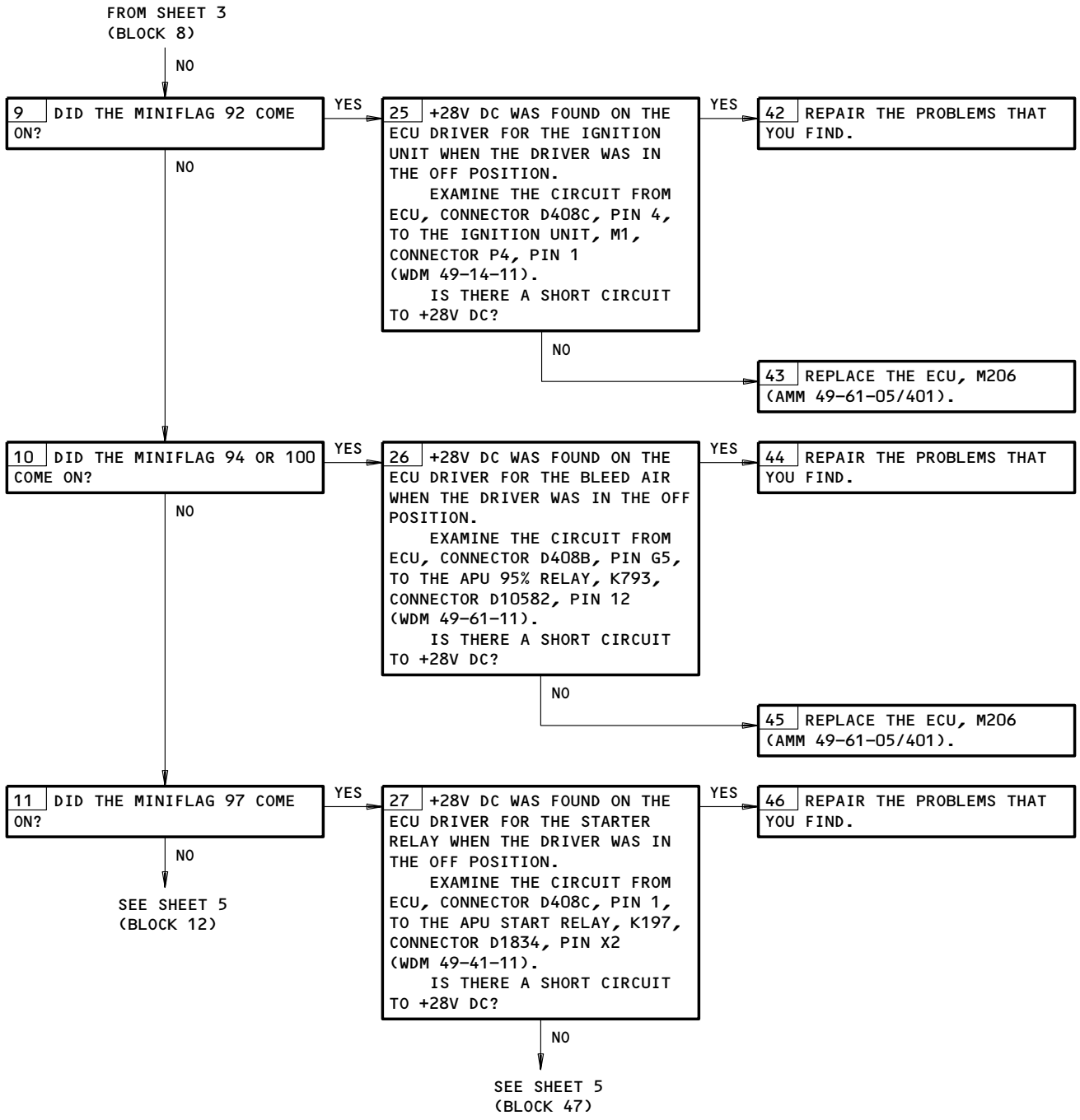
Faulty LRU – ECU on BITE
Figure 131 (Sheet 2)

E77857



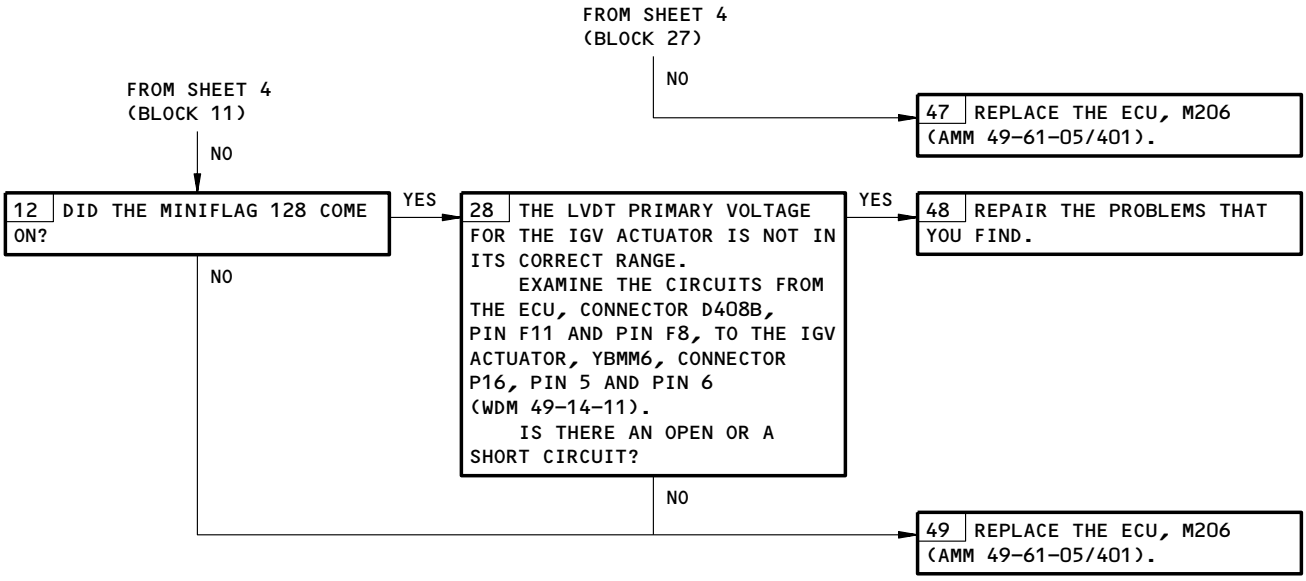
Faulty LRU - ECU on BITE
Figure 131 (Sheet 3)

E77858



Faulty LRU – ECU on BITE
Figure 131 (Sheet 4)

E77859



Faulty LRU - ECU on BITE
Figure 131 (Sheet 5)

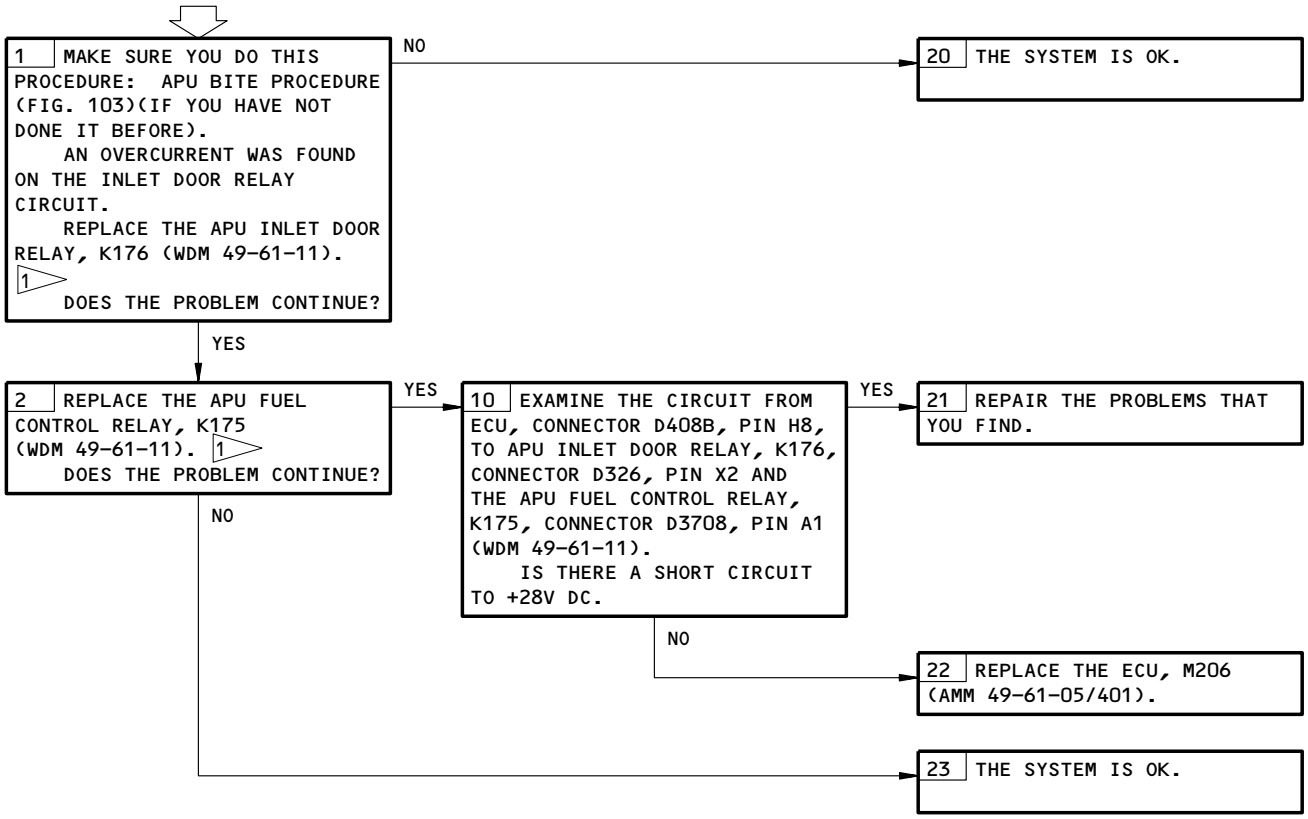
PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 2,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

FAULTY LRU - "INLET DOOR RLY" ON BITE



1 OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

2 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU - INLET DOOR RLY on BITE
Figure 132

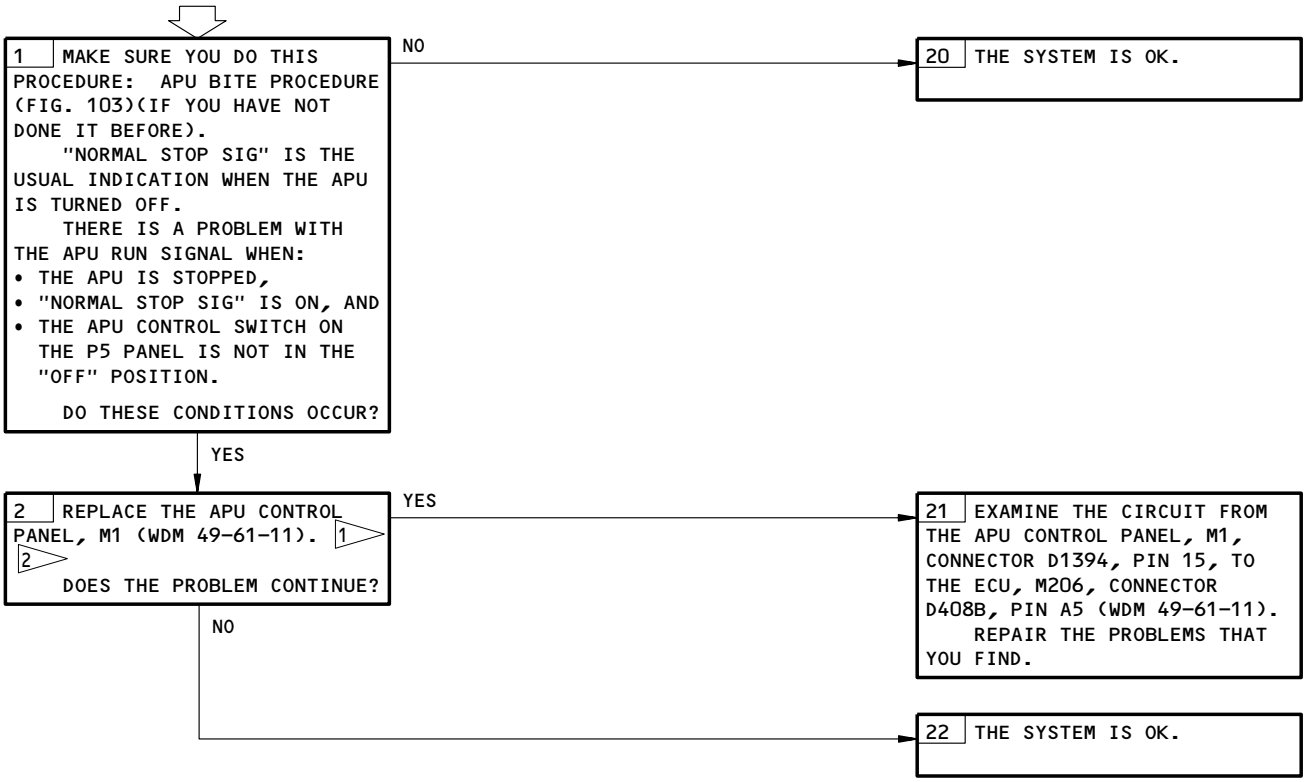
AUTO SHUTDOWN – "NORMAL STOP SIG" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [3], APU PRIME CONT (P49), APU START (P49), APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)



[1] OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

[2] AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

[3] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Auto Shutdown – NORMAL STOP SIG on BITE
Figure 133

FAULTY LRU – "EGT #1 CIRCUIT" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 3,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
THE EGT VALUE IS LESS THAN -100°F ABSOLUTE, OR THE EGT #2 VALUE IS +150°F MORE THAN EGT #1.
REPLACE THE LEFT SIDE THERMOCOUPLES, YBMTS6 (AMM 49-71-01/401). 2
DOES THE PROBLEM CONTINUE?

NOTE: THE ECU MONITORS BOTH OF THE THERMOCOUPLE RAKES. BOTH RAKES MUST HAVE A FAILURE TO CAUSE AN AUTOMATIC SHUTDOWN.

NO → 20 THE SYSTEM IS OK. 1

YES → 10 DISCONNECT THE APU HARNESS, CONNECTOR D4030J, AT THE FIREWALL.
MEASURE THE LOOP RESISTANCE FROM PIN 10 TO 24 (WDM 49-14-11). THE RESISTANCE MUST BE LESS THAN 5.0 OHMS.
IS THE RESISTANCE WITHIN THE LIMITS?

NO → 21 REPAIR THE PROBLEMS THAT YOU FIND. 1

YES → 11 EXAMINE THE CIRCUIT FROM THE FIREWALL, CONNECTOR D4030J, PIN 10 AND PIN 24, TO THE ECU, M206, CONNECTOR D408B, PIN A6 AND PIN A7 (WDM 49-14-11). REPAIR THE OPEN OR GROUNDED CIRCUITS. 2
DOES THE PROBLEM CONTINUE?

NO → 22 THE SYSTEM IS OK. 1

YES → 23 REPLACE THE FUEL MANIFOLDS (AMM 49-31-06/401). 1 2
IF THE PROBLEM CONTINUES, REPLACE THE ECU, M206 (AMM 49-61-05/401). 2

NOTE: A DAMAGED POWER SECTION CAN CAUSE A LARGE DIFFERENCE IN EGT #1 AND EGT #2 VALUES.

IF THE PROBLEM CONTINUES, REPLACE THE APU (AMM 49-11-01/401).

1 ERASE THE "APU BITE" MESSAGE ON EICAS IF IT SHOWS (FIM 31-41-00/101, FIG. 109).

2 OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

3 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU – EGT #1 CIRCUIT on BITE
Figure 134

FAULTY LRU – "EGT #2 CIRCUIT" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [3],
APU PRIME CONT (P49),
APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
THE EGT VALUE IS LESS THAN -100°F ABSOLUTE, OR THE EGT #1 VALUE IS +150°F MORE THAN EGT #2.
REPLACE THE RIGHT SIDE THERMOCOUPLES, YBMTS7 (AMM 49-71-01/401). [2]
DOES THE PROBLEM CONTINUE?

NOTE: THE ECU MONITORS BOTH OF THE THERMOCOUPLE RAKES. BOTH RAKES MUST HAVE A FAILURE TO CAUSE AN AUTOMATIC SHUTDOWN.

NO → 20 THE SYSTEM IS OK. [1]

YES → 10 DISCONNECT THE APU HARNESS, CONNECTOR D4030J, AT THE FIREWALL.
MEASURE THE LOOP RESISTANCE FROM PIN 11 TO 25 (WDM 49-14-11).
THE RESISTANCE MUST BE LESS THAN 5.0 OHMS.
IS THE RESISTANCE WITHIN THE LIMITS?

NO → 21 REPAIR THE PROBLEMS THAT YOU FIND. [1]

YES → 11 EXAMINE THE CIRCUIT FROM THE FIREWALL, CONNECTOR D4030J, PIN 11 AND PIN 25, TO THE ECU, M206, CONNECTOR D408B, PIN A8 AND PIN A9 (WDM 49-14-11). REPAIR THE OPEN OR GROUNDED CIRCUITS. [2]
DOES THE PROBLEM CONTINUE?

NO → 22 THE SYSTEM IS OK. [1]

YES → 23 REPLACE THE FUEL MANIFOLDS (AMM 49-31-06/401). [1] [2]
IF THE PROBLEM CONTINUES, REPLACE THE ECU, M206 (AMM 49-61-05/401). [2]

NOTE: A DAMAGED POWER SECTION CAN CAUSE A LARGE DIFFERENCE IN EGT #1 AND EGT #2 VALUES.

IF THE PROBLEM CONTINUES, REPLACE THE APU (AMM 49-11-01/401).

[1] ERASE THE "APU BITE" MESSAGE ON EICAS IF IT SHOWS (FIM 31-41-00/101, FIG. 109).

[2] OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

[3] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU – EGT #2 CIRCUIT on BITE
Figure 135

FAULTY LRU – "#1 SPD SENSOR" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 [3],
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

1 MAKE SURE YOU DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103)(IF YOU HAVE NOT DONE IT BEFORE).
THE SPEED SENSOR #1 OR WIRING IS NOT PROVIDING PROPER INPUT AT SPEEDS GREATER THAN 50%.
DID THE "#2 SPD SENSOR" LIGHT ALSO COME ON?

NO → 21 IS THE CONNECTOR CORRECTLY INSTALLED ON THE RIGHT MONOPOLE, YBMTS8?

NO → 41 INSTALL THE RIGHT MONOPOLE CONNECTOR. [1]

YES → 22 REPLACE THE RIGHT MONOPOLE, YBMTS8 (AMM 49-61-02/ 401). [2]
DOES THE PROBLEM CONTINUE?

YES → 42 EXAMINE THE CIRCUIT FROM THE ECU, CONNECTOR D408B, PINS A10 AND A11, TO THE MONOPOLE, CONNECTOR P18, PINS 1 AND 2 (WDM 49-14-11). REPAIR THE PROBLEMS THAT YOU FIND. [1]

NO → 43 THE SYSTEM IS OK. [1]

YES → 2 REMOVE BOTH OF THE APU MONOPOLES (RPM), YBMTS8 AND YBMTS9 (AMM 49-61-02/401). LOOK AT THE TIPS FOR DAMAGE.

NOTE: YOU CAN PUT A BORESCOPE INTO THE MONOPOLE OPENINGS TO LOOK AT THE ENGINE BEARINGS.

DO THE MONOPOLE TIPS HAVE DAMAGE?

YES → 44 REPLACE THE APU (AMM 49-11-01/401). [1]

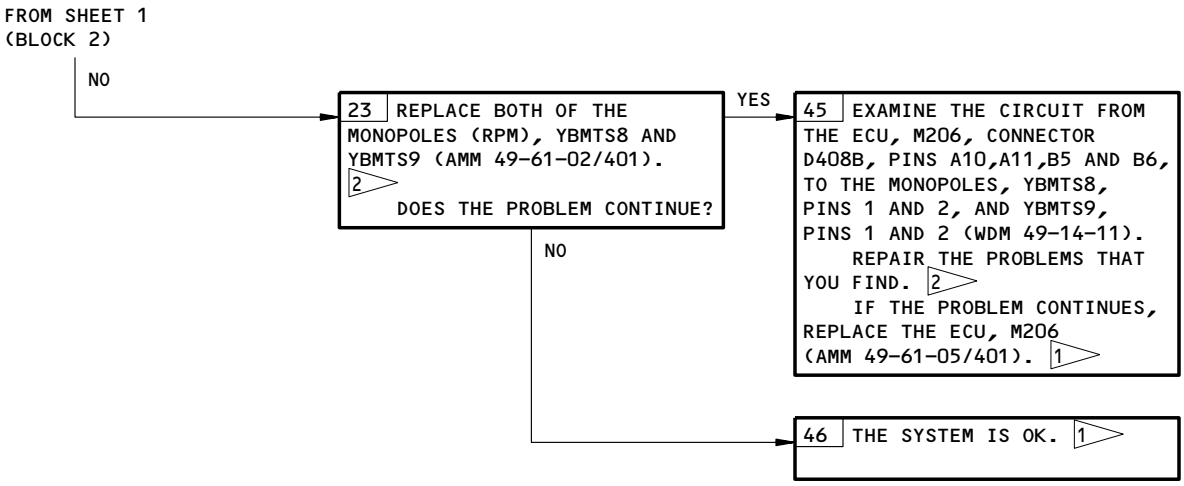
NO → SEE SHEET 2 (BLOCK 23)

[1] ERASE THE "APU BITE" MESSAGE ON EICAS IF IT SHOWS (FIM 31-41-00/101, FIG. 109).

[2] OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG. 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

[3] AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU – #1 SPD SENSOR on BITE
Figure 136 (Sheet 1)



Faulty LRU - #1 SPD SENSOR on BITE
Figure 136 (Sheet 2)

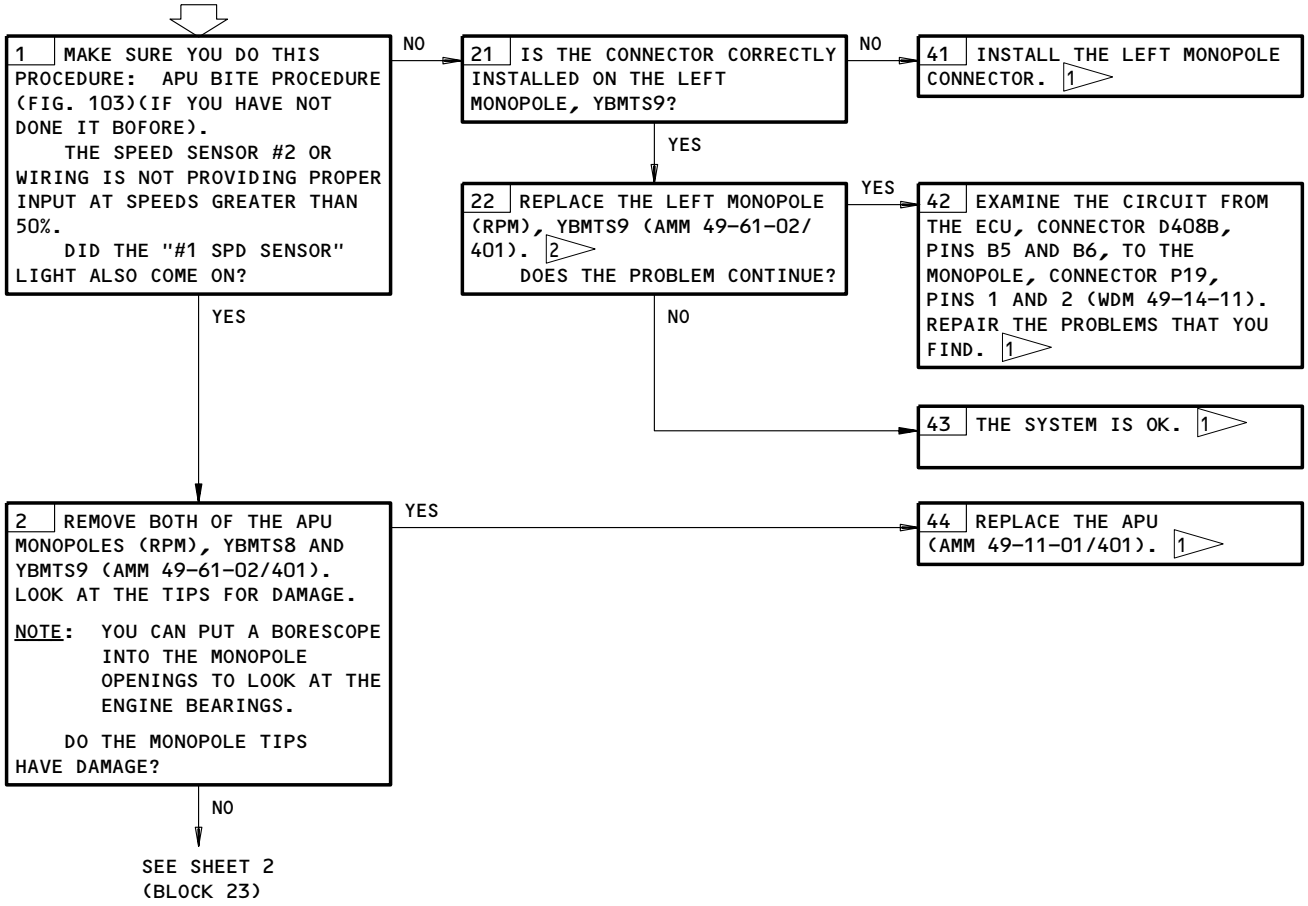
FAULTY LRU – "#2 SPD SENSOR" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 ▷3◁,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)

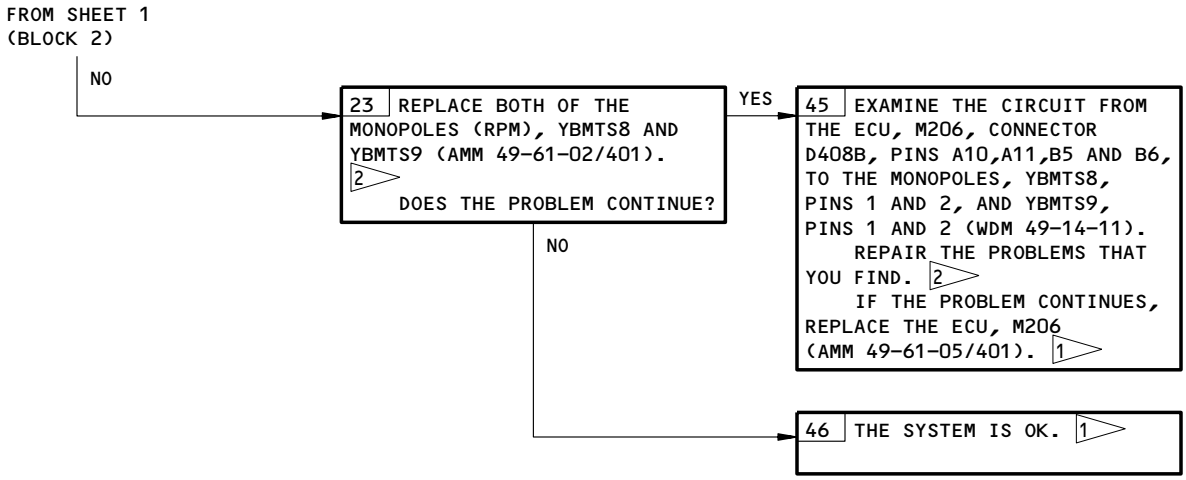


▷1◁ ERASE THE "APU BITE" MESSAGE ON EICAS IF IT SHOWS (FIM 31-41-00/101, FIG. 109).

▷2◁ OPERATE THE APU (AMM 49-11-00/201) AND DO THIS PROCEDURE: APU BITE PROCEDURE (FIG, 103) AGAIN TO MAKE SURE THE PROBLEM IS REPAIRED.

▷3◁ AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

Faulty LRU – #2 SPD SENSOR on BITE
Figure 137 (Sheet 1)



Faulty LRU - #2 SPD SENSOR on BITE
Figure 137 (Sheet 2)

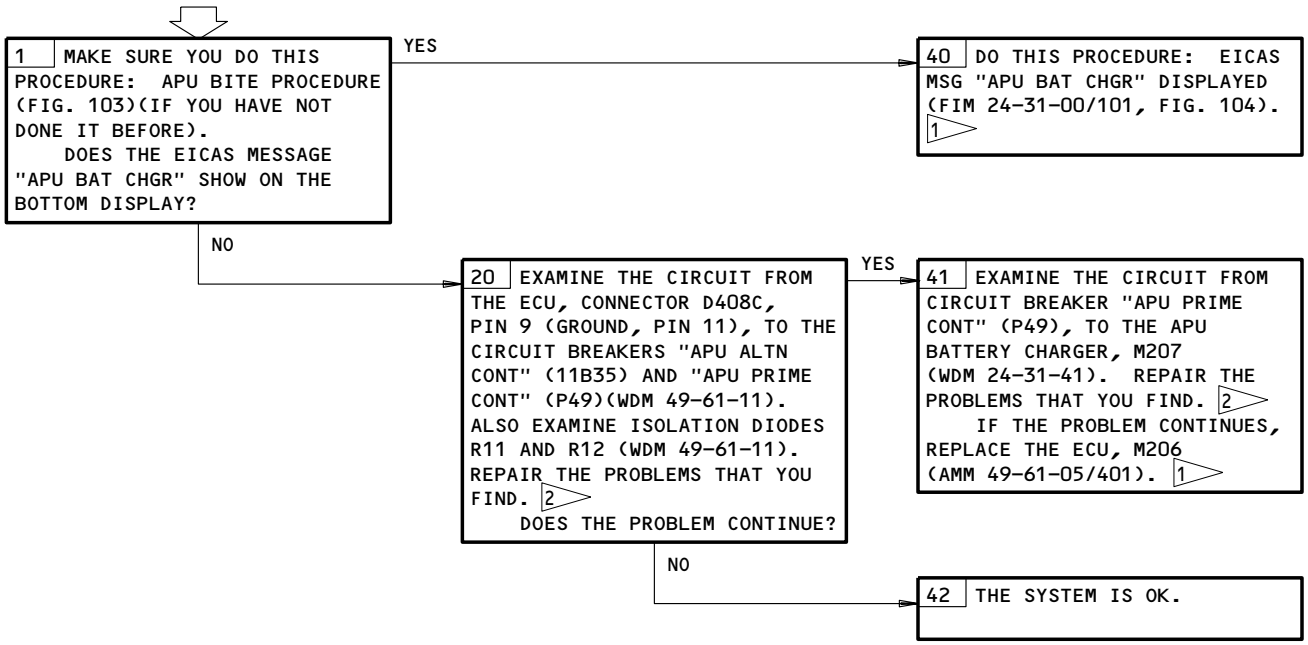
AUTO SHUTDOWN – "DC PWR LOSS" ON BITE

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EICAS (AMM 31-41-00/201)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6E3, 6G24, 11B35, 11D34, 11D35, 11M25, 11T35 3,
APU PRIME CONT (P49), APU START (P49),
APU INLET DR ACT (P49)

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)



1 AN AUTOMATIC SHUTDOWN WILL CAUSE THE EICAS TO WRITE AN AUTO-EVENT FOR THE SHUTDOWN. AFTER THE PROBLEM IS CORRECTED, PUSH THE "PERF/APU" AND THE "AUTO-EVENT READ" SWITCHES ON THE P61 PANEL. PUSH THE "ERASE" SWITCH FOR 3 SECONDS. MAKE SURE THE "APU-FAULT" IS ERASED.

2 DO THIS PROCEDURE: SELF-TEST (FIG. 103, BLOCK 3) TO MAKE SURE THE PROBLEM IS REPAIRED.

3 AIRPLANES WITH THE TRANSFORMER RECTIFIER UNIT

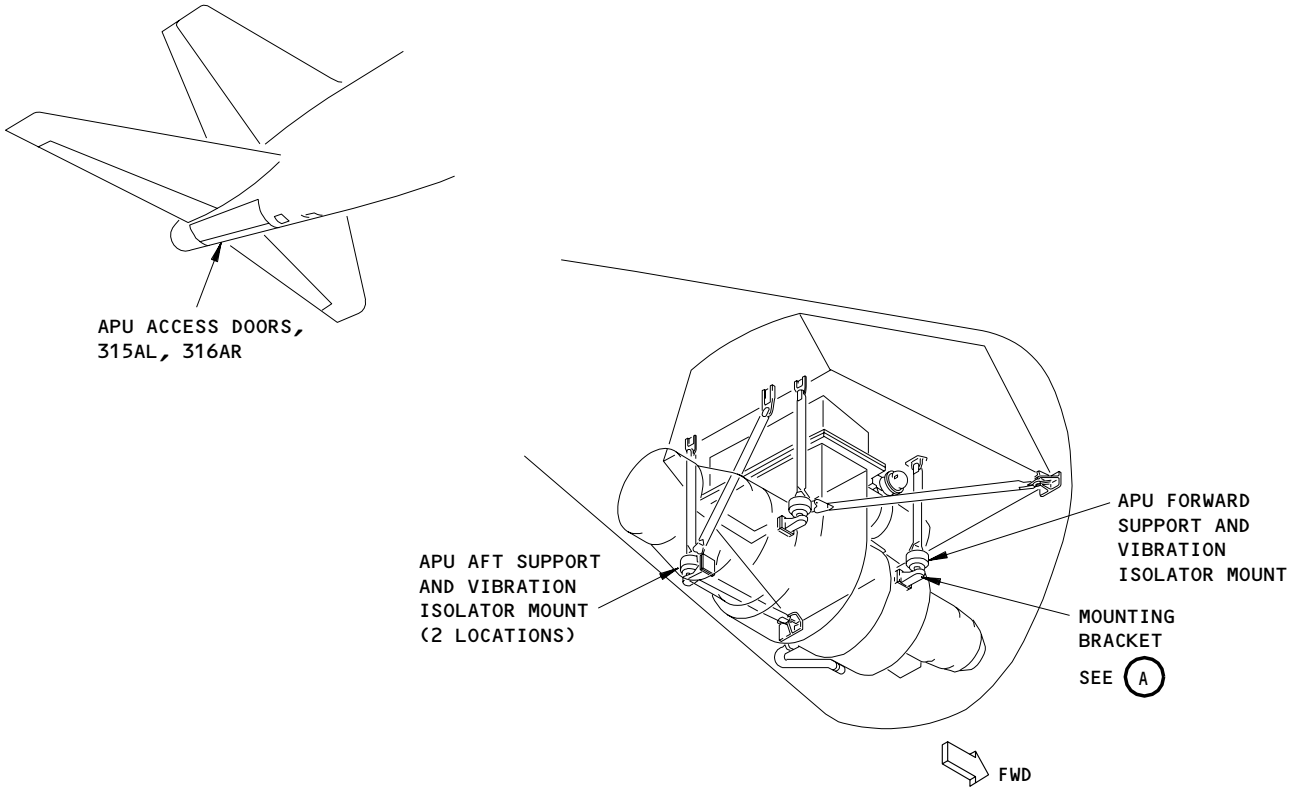
Auto Shutdown – DC PWR LOSS on BITE
Figure 138

APU MOUNTS

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
BRACKET – APU MOUNT	--	3	316AR, 315AL, APU COMPT	49-13-03
MOUNTS – APU AFT SUPPORT AND VIBRATION ISOLATOR	--	2	316AR, 315AL, APU COMPT	49-13-02
MOUNT – APU FORWARD SUPPORT AND VIBRATION ISOLATOR	--	1	316AR, 315AL, APU COMPT	49-13-01

APU Mounts – Component Index
Figure 101

E38861

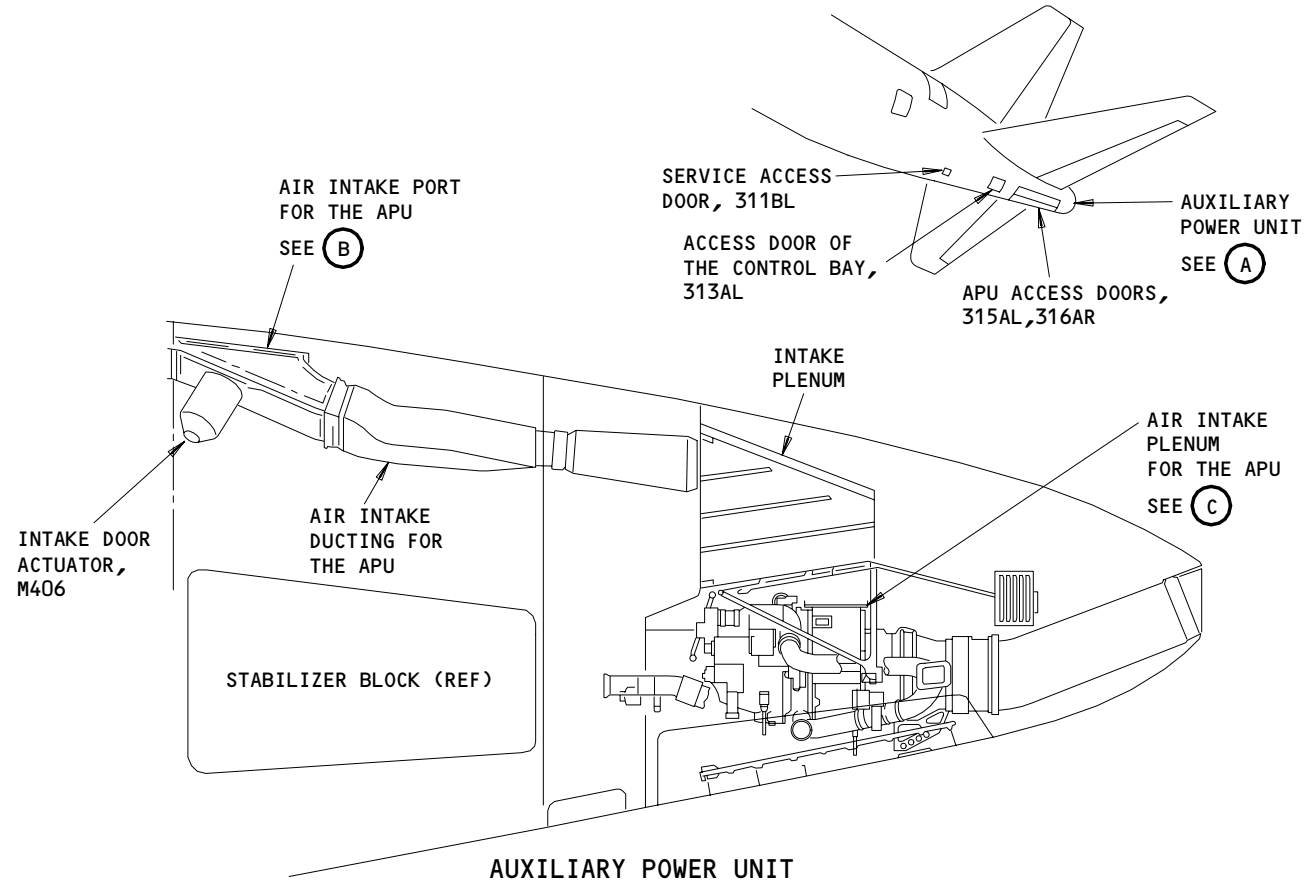


APU Mounts - Component Location
Figure 102

APU AIR INTAKE

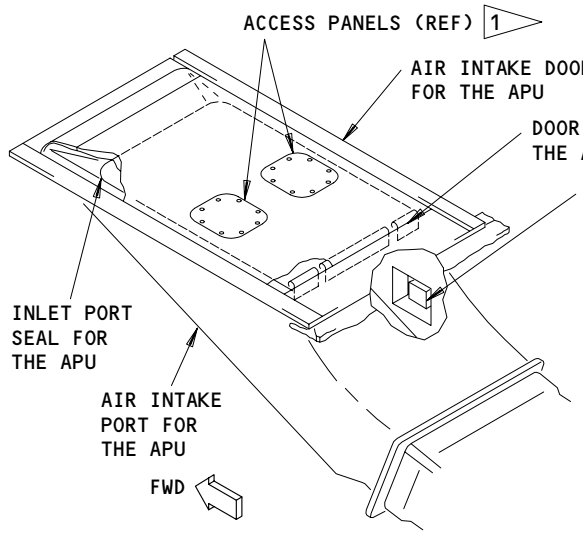
COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ACTUATOR - DOOR, M406	1	1	311BL, STABILIZER COMPT, AUXILIARY POWER UNIT	49-15-06
DOOR - APU AIR INTAKE	1	1	APU AIR INTAKE PORT	49-15-05
DUCT	1	2	311BL,313AL, STABILIZER COMPT, AUXILIARY POWER UNIT	49-15-01
PORT - APU AIR INTAKE	1	1	311BL, STABILIZER COMPT, AUXILIARY POWER UNIT	49-15-08
RELAYS - (31-01-49/101)				
APU INLET DOOR, K176				
APU INLET DOOR OPEN, K547				
PLENUM - INTAKE	1	1	313AL,315AL,316AR, APU COMPT, APU AIR INTAKE PLENUM	49-15-03
SEAL - APU INLET DOOR	1	3	APU AIR INTAKE PORT	49-15-07
SEAL - APU AIR INTAKE PORT	1	1	APU AIR INTAKE PORT	49-15-09
SEAL - PLENUM FLANGE	1	1	315AL,316AR, APU COMPT, APU AIR INTAKE PLENUM	49-15-04
SWITCH - (49-61-00/101)				
APU MASTER CONTROL, S1				
SWITCH - APU INTAKE DOOR OPEN, S506	1	1	311BL, STABILIZER COMPT, APU AIR INTAKE PORT	49-15-02

APU Air Intake - Component Index
Figure 101



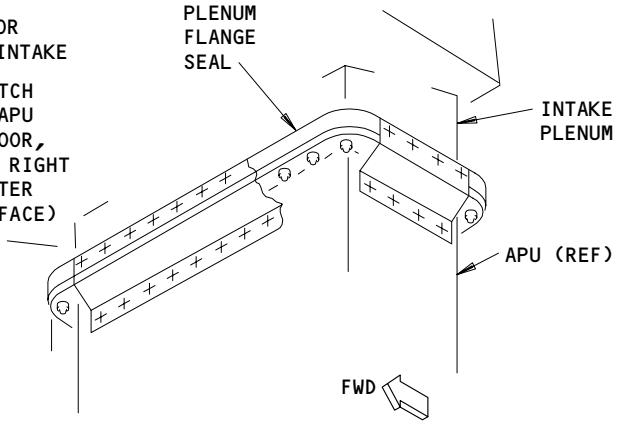
AUXILIARY POWER UNIT

A



AIR INTAKE PORT FOR THE APU

B



AIR INTAKE PLENUM FOR THE APU

C

1 ACCESS PANELS NOT INSTALLED ON ALL AIRPLANES

APU Air Intake - Component Location
Figure 102

APU DRAINS AND VENTS

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
DRAIN – APU INLET PLENUM	2	1	315AL, 316AR, APU COMPT, BOTTOM OF INLET PLENUM	49-16-00
DRAIN – APU PLENUM	1	1	315AL, 316AR, APU COMPT, LEFT FORWARD CORNER	49-16-03
DRAIN – BEARING SEAL CAVITY	2	1	315AL, 316AR, APU COMPT, DRAIN MAST	49-16-00
DRAIN – FORWARD BEARING SEAL CAVITY – TELL TALE	2	1	315AL, 316AR, APU COMPT, BOTTOM OF INLET PLENUM	49-16-00
DRAIN – FUEL CONTROL UNIT/LUBE PUMP/IGV ACTUATOR	2	1	315AL, 316AR, APU COMPT, DRAIN MAST	49-16-00
DRAIN – FUEL CONTROL UNIT/LUBE PUMP – TELL TALE	2	1	315AL, 316AR, APU COMPT, BOTTOM OF INLET PLENUM	49-16-00
DRAIN – FUEL FLOW DIVIDER 2	2	1	315AL, 316AR, APU COMPT, DRAIN MAST	49-16-00
DRAIN – FUEL FLOW DIVIDER/HEAT SHIELD 1	2	1	315AL, 316AR, APU COMPT, DRAIN MAST	49-16-00
DRAIN – IGV ACTUATOR – TELL TALE	2	1	315AL, 316AR, APU COMPT, BOTTOM OF INLET PLENUM	49-16-00
DRAIN – MID-BEARING SEAL CAVITY – TELL TALE	2	2	315AL, 316AR, APU COMPT, BOTTOM OF INLET PLENUM	49-16-00
DRAIN – OIL SCUPPER	1	1	315AL, 316AR, APU COMPT, LOWER LEFT SIDE OF APU	49-27-00
DRAIN – TURBINE PLENUM 1	2	1	315AL, 316AR, APU COMPT, DRAIN MAST	49-16-00
DRAIN – TURBINE PLENUM/HEAT SHIELD 2	2	1	315AL, 316AR, APU COMPT, DRAIN MAST	49-16-00
MAST – APU DRAIN	2	1	315AL, 316AR, APU COMPT, DRAIN MAST	49-16-00

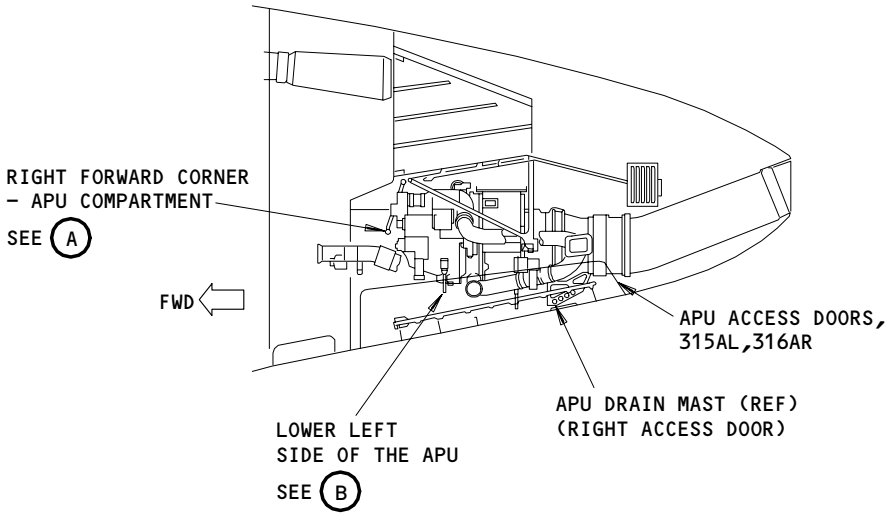
* SEE THE WDM EQUIPMENT LIST

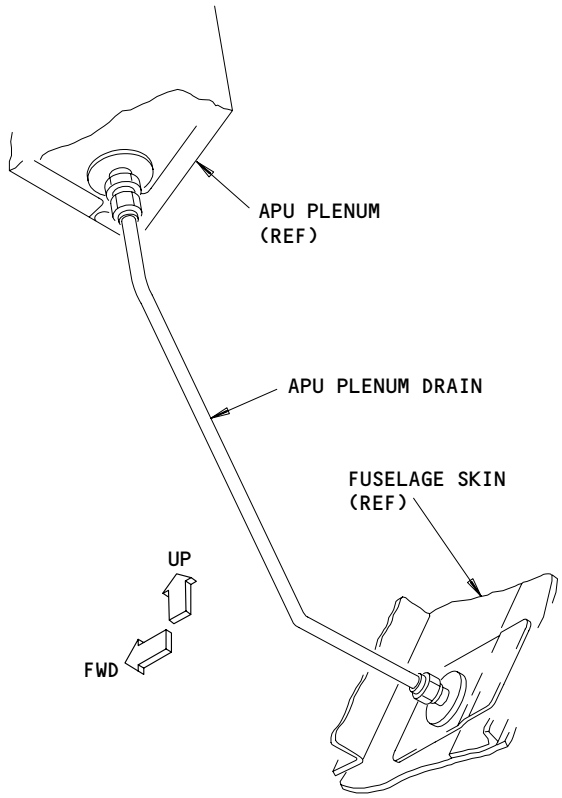
1 APUs WITH TWO DIFFERENT DRAINS FOR THE TURBINE PLENUM AND THE HEAT SHIELD

2 APUs WITH ONE DRAIN FOR THE TURBINE PLENUM AND THE HEAT SHIELD

APU Drains and Vents – Component Index
Figure 101

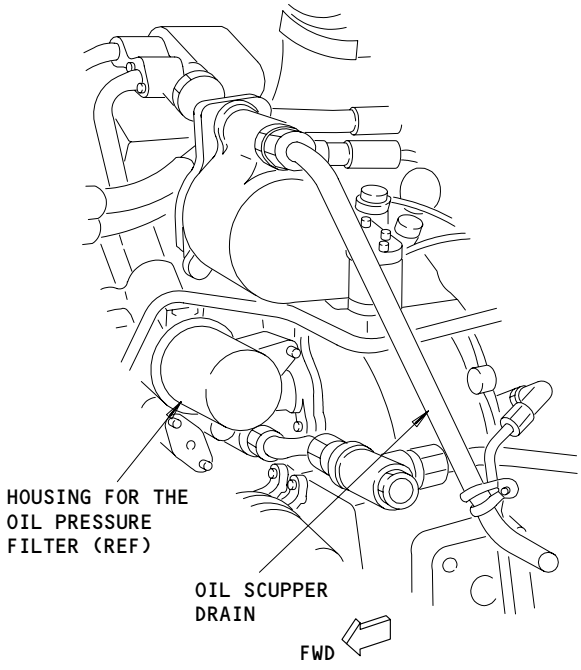
E94365





RIGHT FORWARD CORNER – APU COMPARTMENT

A

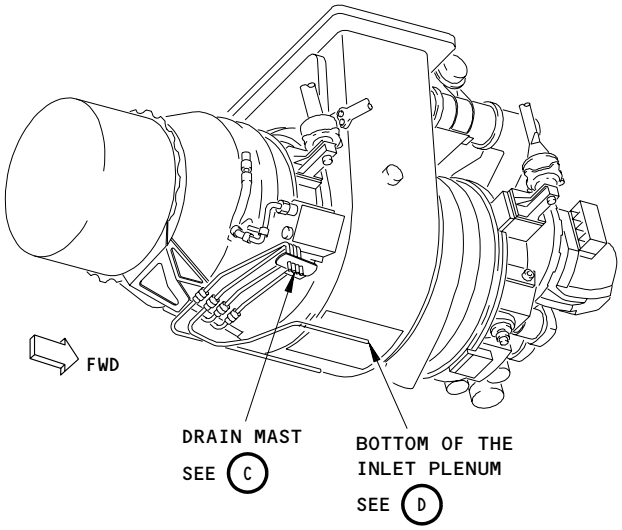


LOWER LEFT SIDE OF THE APU

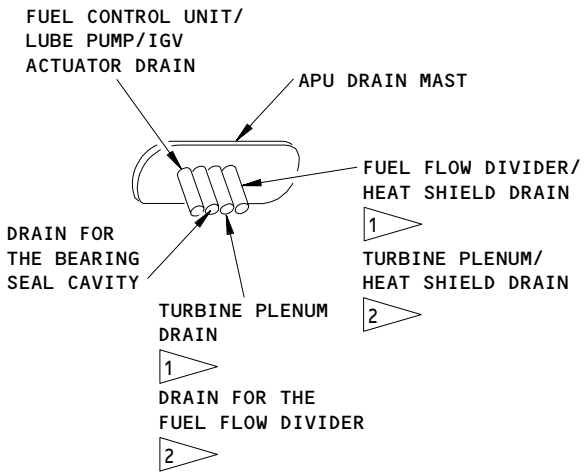
B

APU Drains and Vents – Component Location
Figure 102 (Sheet 1)

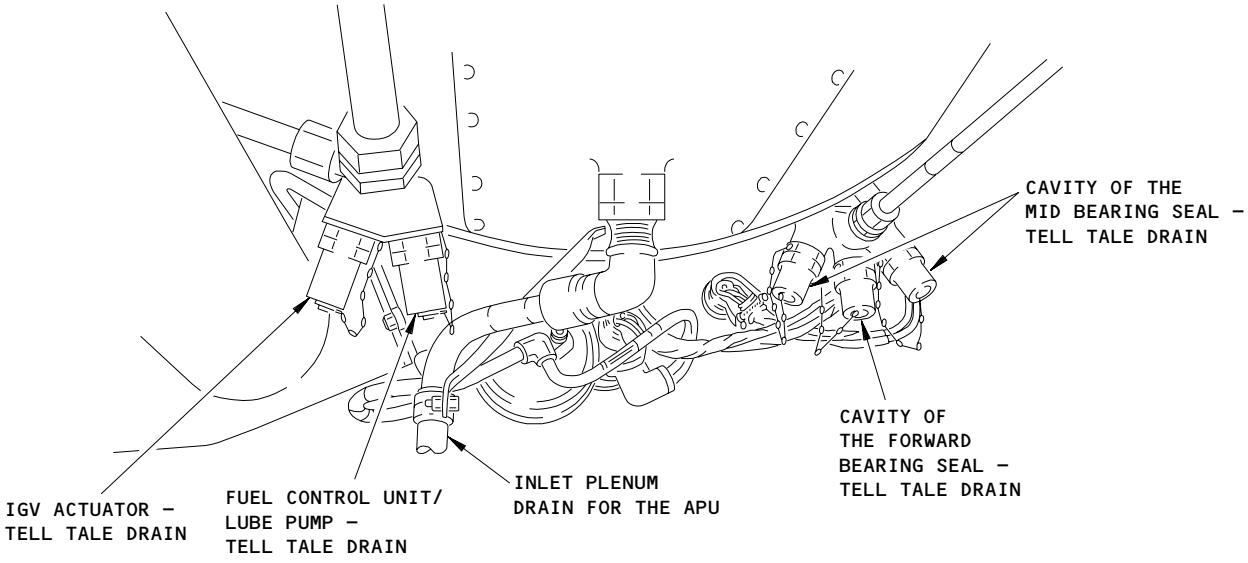
35212



APU
(RIGHT SIDE)



DRAIN MAST
C



BOTTOM OF THE INLET PLENUM
(VIEW IN THE FORWARD DIRECTION)
D

1 APUs WITH TWO DIFFERENT DRAINS
FOR THE TURBINE PLENUM AND THE HEAT SHIELD

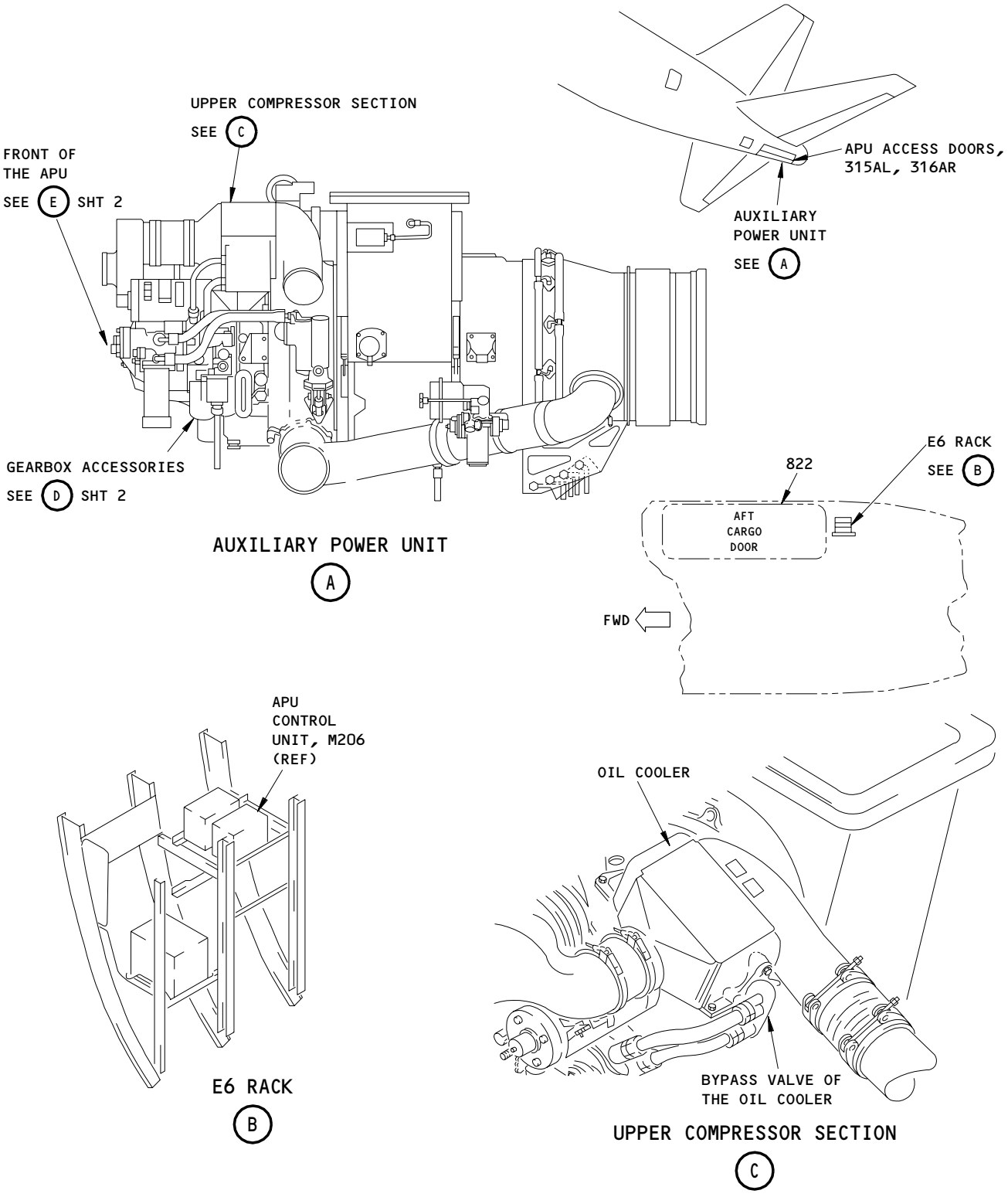
2 APUs WITH ONE DRAIN FOR THE TURBINE PLENUM
AND THE HEAT SHIELD

APU Drains and Vents – Component Location
Figure 102 (Sheet 2)

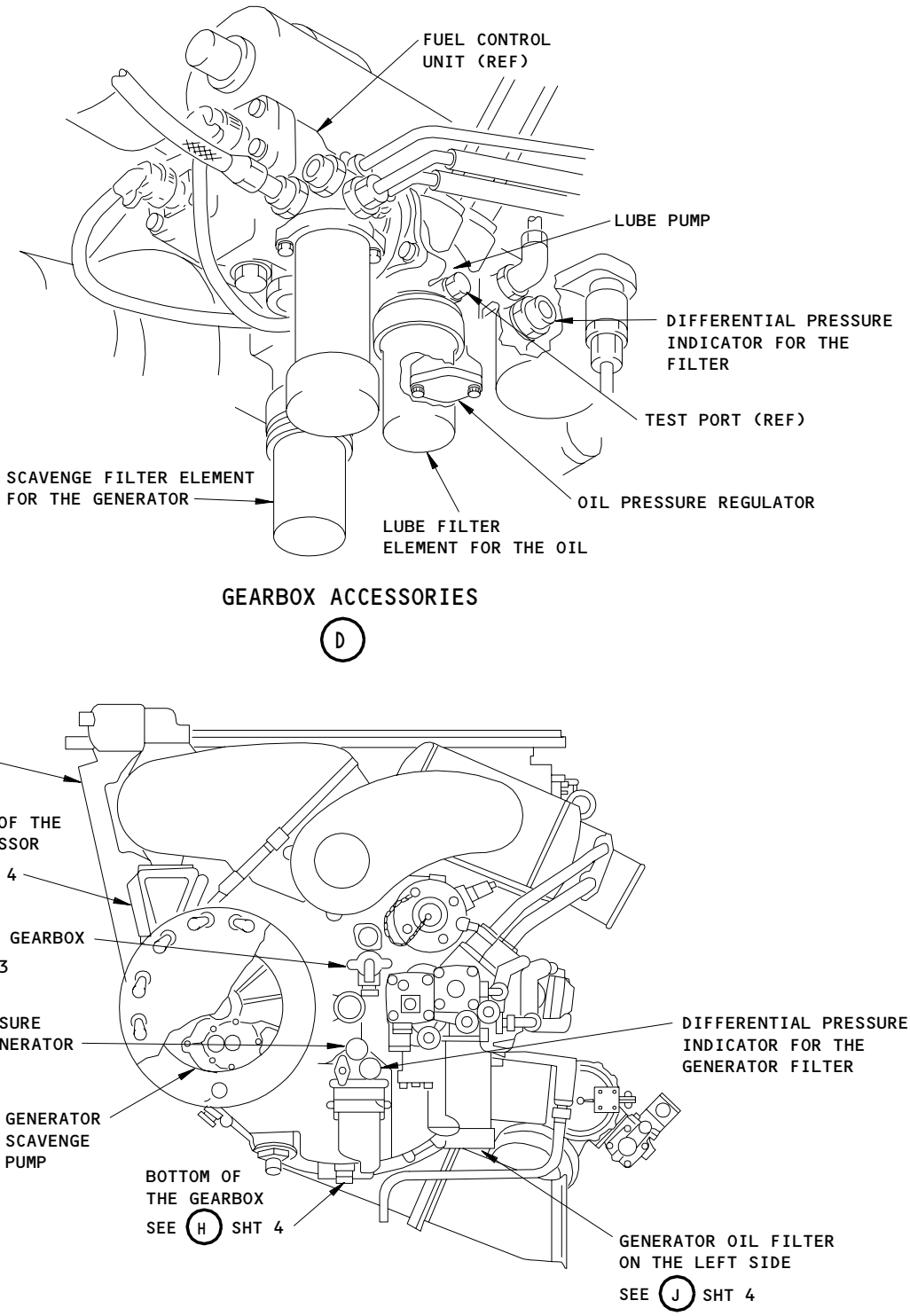
APU AND GENERATOR LUBRICATION SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
COOLER – OIL	1	1	315AL, 316AR, APU COMPT, UPPER COMPRESSOR SECTION	49-27-09
DETECTOR – COMPRESSOR BEARING MAGNETIC CHIP	4	1	315AL, 316AR, APU COMPT, LEFT SIDE OF GEARBOX	49-27-04
DETECTOR – GEARBOX MAGNETIC CHIP	4	1	315AL, 316AR, APU COMPT, BOTTOM OF GEARBOX	49-27-04
DETECTOR – GENERATOR SCAVENGE MAGNETIC CHIP	4	1	315AL, 316AR, APU COMPT, BOTTOM OF GEARBOX	49-27-04
DETECTOR – TURBINE BEARING MAGNETIC CHIP	4	1	315AL, 316AR, APU COMPT, RIGHT SIDE OF APU	49-27-04
ELEMENTS – LUBE AND GENERATOR SCAVENGE FILTER	2	2	315AL, 316AR, APU COMPT, GEARBOX ACCESSORIES	49-27-03
INDICATOR – GENERATOR FILTER DIFFERENTIAL PRESSURE	2	1	315AL, 316AR, APU COMPT, FRONT OF APU	49-27-16
INDICATOR – LUBE FILTER DIFFERENTIAL PRESSURE	2	1	315AL, 316AR, APU COMPT, GEARBOX ACCESSORIES	49-27-07
PLUG – DRAIN	4	1	315AL, 316AR, APU COMPT, BOTTOM OF GEARBOX	49-27-04
PUMP – GENERATOR SCAVENGE	2	1	315AL, 316AR, APU COMPT, FRONT OF APU	49-27-02
PUMP – LUBE	2	1	315AL, 316AR, APU COMPT, GEARBOX ACCESSORIES	49-27-01
REGULATOR – OIL PRESSURE	2	1	315AL, 316AR, APU COMPT, GEARBOX ACCESSORIES	49-27-05
SEAL PLATE – APU GENERATOR	3	1	315AL, 316AR, APU COMPT, FRONT OF GEARBOX	49-27-06
SENSOR – (FIM 49-94-00/101) OIL TEMPERATURE, YBMTS1				
SWITCH – (FIM 49-94-00/101) LOW OIL PRESSURE, YBMS2				
SWITCH – GENERATOR FILTER DIFFERENTIAL PRESSURE, YBMS1	2	1	315AL, 316AR, APU COMPT, FRONT OF APU	49-27-15
SWITCH – LOW OIL TEMPERATURE, YBMS5	4	1	315AL, 316AR, APU COMPT, BOTTOM OF GEARBOX	49-27-14
TRANSMITTER – (FIM 49-94-00/101) OIL QUANTITY, YBMS3				
VALVE – DEOIL SOLENOID, YBMM3	3	1	315AL, 316AR, APU COMPT, FRONT OF GEARBOX	49-27-08
VALVE – GEARBOX PRESSURE REGULATING	3	1	315AL, 316AR, APU COMPT, FRONT OF GEARBOX	49-27-12
VALVE – GEARBOX SHUTOFF	3	1	315AL, 316AR, APU COMPT, RIGHT SIDE INLET PLENUM	49-27-11
VALVE – OIL COOLER BYPASS	1	1	315AL, 316AR, APU COMPT, UPPER COMPRESSOR SECTION	49-27-10
VALVE – SHUTTLE	3	1	315AL, 316AR, APU COMPT, RIGHT SIDE INLET PLENUM	49-27-13
UNIT – (FIM 49-61-00/101) APU CONTROL, M206				

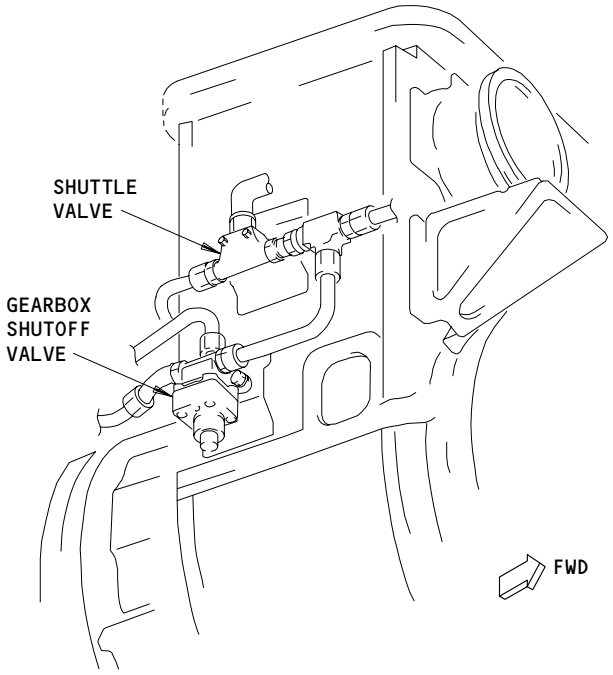
APU and Generator Lubrication System – Component Index
Figure 101



APU and Generator Lubrication System – Component Location
Figure 102 (Sheet 1)

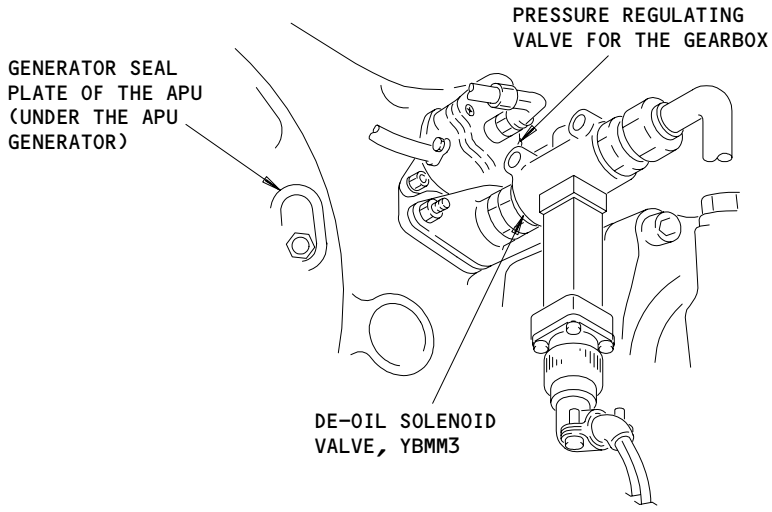


APU and Generator Lubrication System – Component Location (Details from Sht 1)
Figure 102 (Sheet 2)



RIGHT SIDE OF THE INLET PLENUM

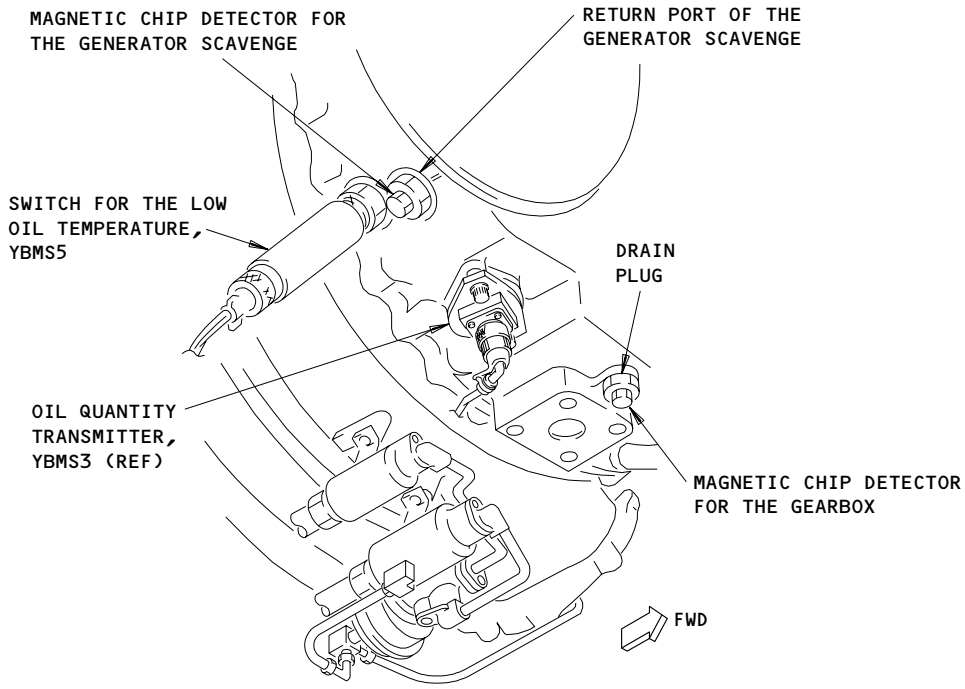
F



FRONT OF THE GEARBOX

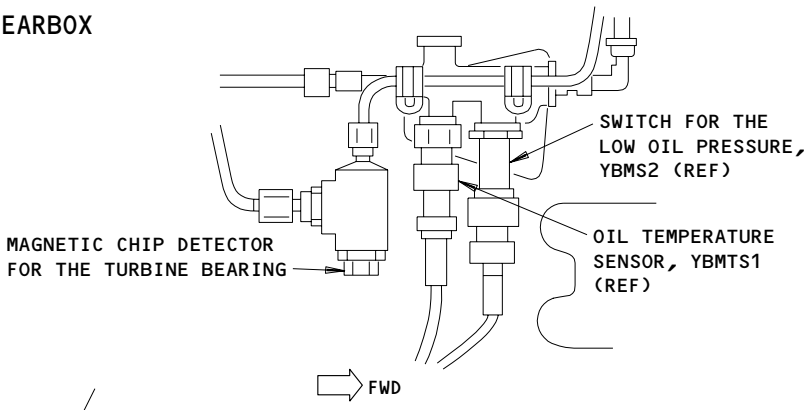
G

APU and Generator Lubrication System - Component Location (Details from Sht 2)
Figure 102 (Sheet 3)



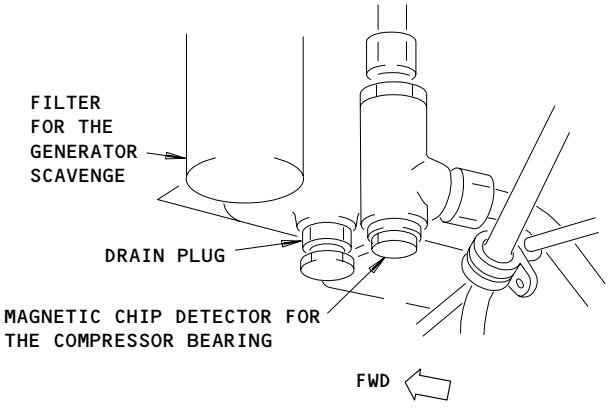
BOTTOM OF THE GEARBOX

H



RIGHT SIDE OF THE LOAD COMPRESSOR

I



LEFT SIDE OF THE LOAD COMPRESSOR

J

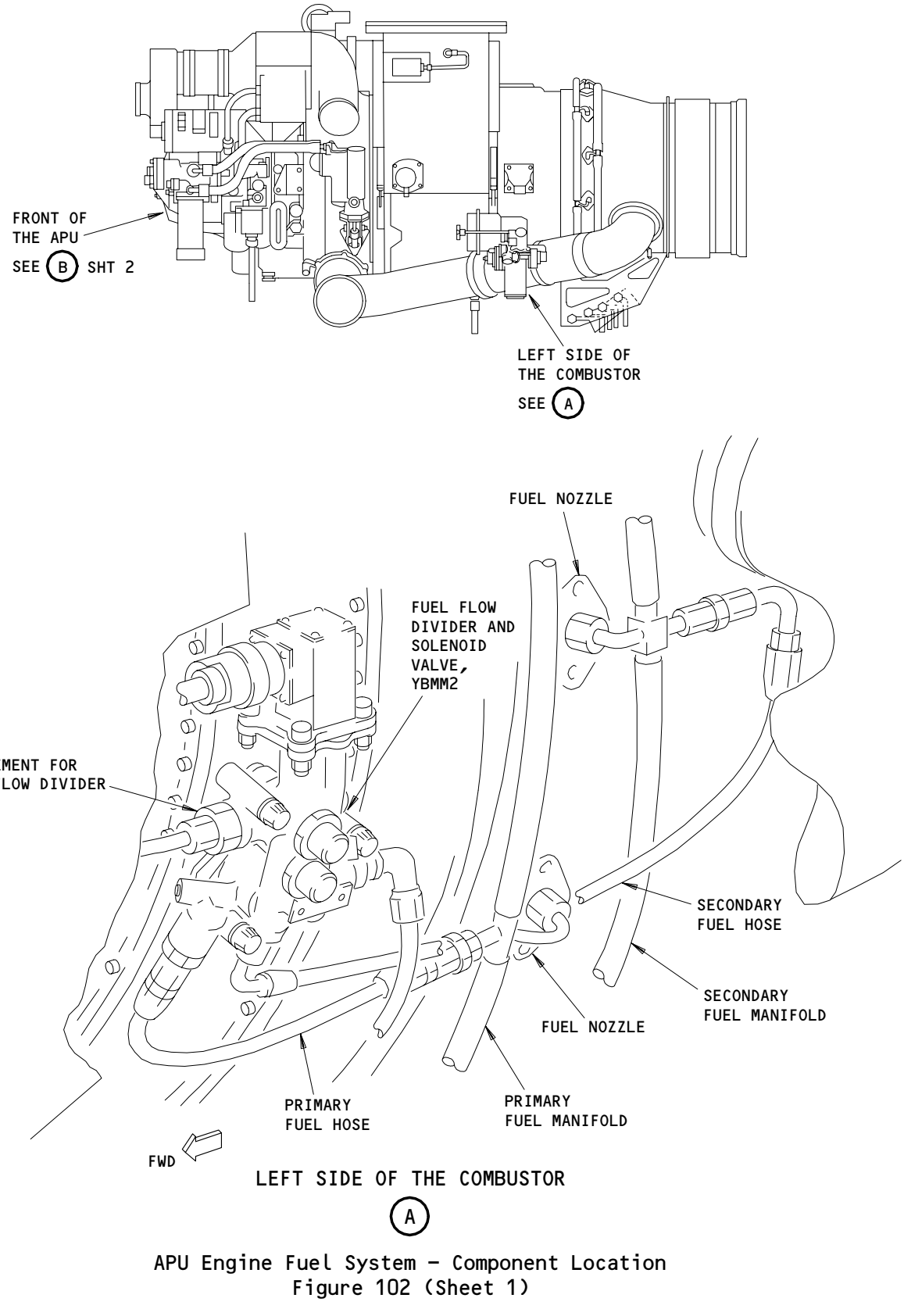
APU and Generator Lubrication System – Component Location (Details from Sht 2)
Figure 102 (Sheet 4)

APU ENGINE FUEL SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
COMPUTERS - (31-41-00/101) EICAS L, M10181 EICAS R, M10182				
ELEMENT - FUEL FILTER	2	1	316AR,315AL, APU COMP, FRONT OF APU	49-31-04
ELEMENT - FUEL FLOW DIVIDER FILTER	1	1	316AR,315AL, APU COMP, LEFT SIDE OF COMBUSTOR	49-31-08
FILTER - FUEL HIGH PRESSURE	2	1	316AR,315AL, APU COMP, FRONT OF APU	49-31-07
HOSES - FUEL MANIFOLD	1	2	316AR,315AL, APU COMP, LEFT SIDE OF COMBUSTOR	49-31-09
MANIFOLDS AND NOZZLES	1	12	316AR,315AL, APU COMP, LEFT SIDE OF COMBUSTOR	49-31-06
MONOPOLE - (49-61-00/101) YBMTS8,YBMTS9				
RESISTOR - EGT LOAD, R543, R550	2	2	119AL, MAIN EQUIP CENTER, E8	*
SENSORS - (49-61-00/101) APU INLET PRESSURE, YBMTS4 APU INLET TEMPERATURE, YBMTS5				
THERMOCOUPLE ASSEMBLY - (49-71-00/101) YBMTS6,YBMTS7				
UNIT - FUEL CONTROL	2	1	316AR,315AL, APU COMP, FRONT OF APU	49-31-01
VALVE - FUEL CONTROL SOLENOID, YBMV1	2	1	316AR,315AL, APU COMP, FRONT OF APU	49-31-02
VALVE - FUEL FILTER BYPASS	2	1	316AR,315AL, APU COMP, FRONT OF APU	49-31-05
VALVE - FUEL FLOW DIVIDER AND SOLENOID, YBMM2	1	1	316AR,315AL, APU COMP, LEFT SIDE OF COMBUSTOR	49-31-03

* SEE THE WDM EQUIPMENT LIST

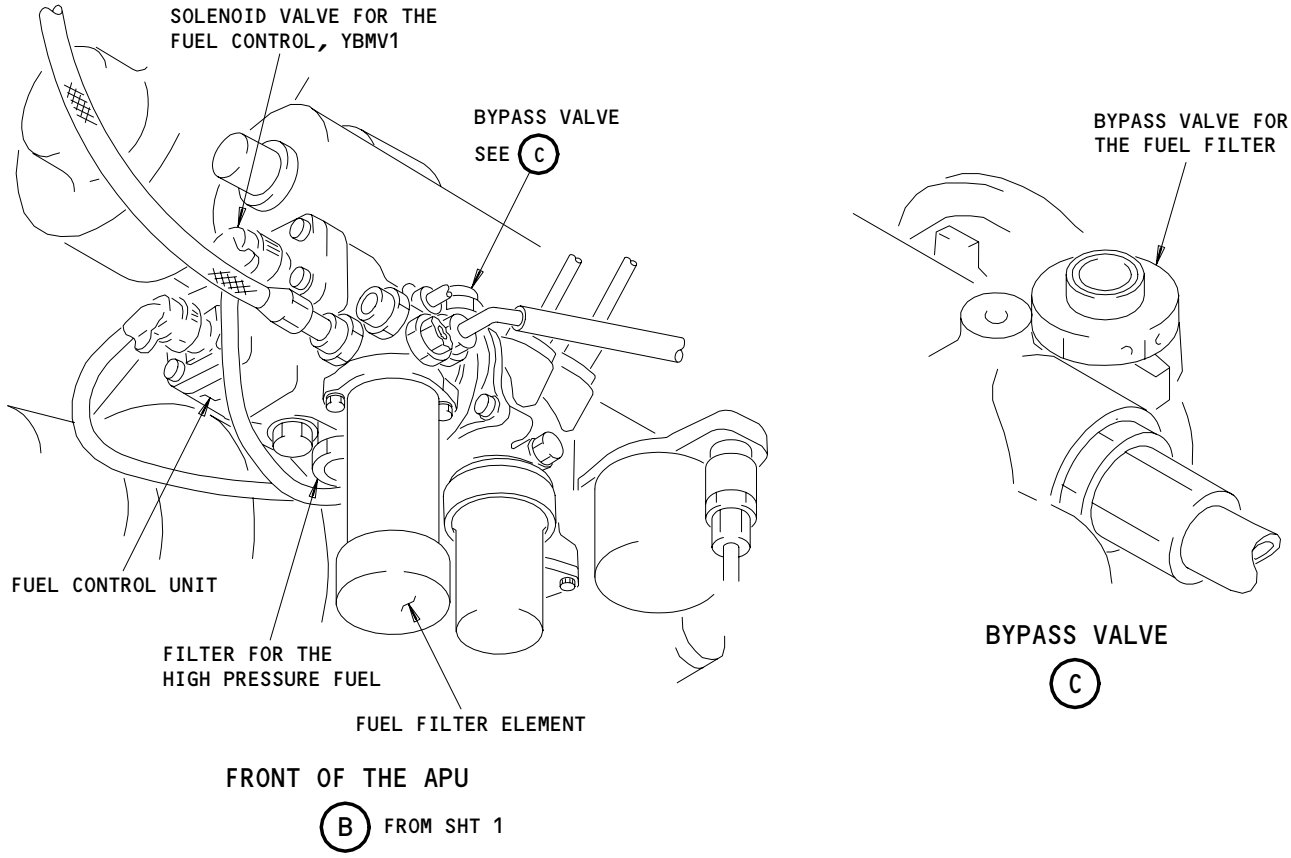
APU Engine fuel System - Component Index
Figure 101



LEFT SIDE OF THE COMBUSTOR

(A)

APU Engine Fuel System - Component Location
Figure 102 (Sheet 1)



APU Engine Fuel System – Component Location
Figure 102 (Sheet 2)

APU IGNITION AND STARTING SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ACTUATOR – (FIM 49-15-00/101)				
APU INLET DOOR, M406				
BATTERY – (FIM 24-31-00/101)				
APU, M208				
CARD 3 – (FIM 26-15-00/101)				
FIRE/OVHT LOGIC TEST, M10400				
CIRCUIT BREAKER –	1		FLT COMPT, P6, P11	
APU ALTN CONT, C1391		1	11B35	*
APU START TRU CONT, C865 1		1	6H12	
FIRE EXT APU 1, C780		1	6G1	*
CIRCUIT BREAKER –			MAIN EQUIP CTR, P32	
APU START TRU POWER 1		1		
CIRCUIT BREAKER –	1		822, AFT EQUIP CTR, P49	
APU INLET DOOR ACTUATOR, C1385		1		*
APU PRIME CONT, C1382		1		*
APU START, C20		1		
APU START TRU FAN 1				*
CLUTCH – STARTER	2	1	316AR, 315AL, APU COMP, FRONT OF APU	49-41-06
CONTACTOR – APU CRANK, K117	2	1	882, AFT CARGO DOOR, E6 RACK, P49, C3	49-41-05
DIODE – (FIM 31-01-34/101)				
R110				
R111				
DIODE – (FIM 31-01-37/101)				
R65				
DIODE – (FIM 31-01-49/101)				
R11				
R12				
LEAD – IGNITION	1	1	316AR, 315AL, APU COMP, RIGHT SIDE OF COMBUSTOR	49-41-04
MOTOR – STARTER, M893	2	1	316AR, 315AL, APU COMP, FRONT OF APU	49-41-01

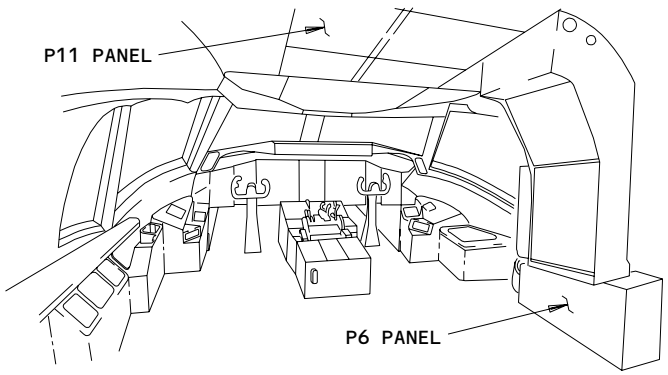
* SEE THE WDM EQUIPMENT LIST

1 AIRPLANES WITH TRANSFORMER RECTIFIER UNIT

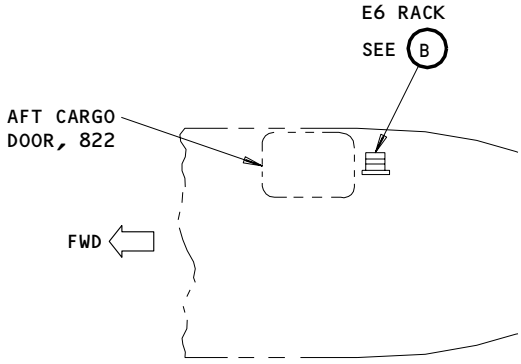
APU Ignition and Starting System – Component Index
Figure 101 (Sheet 1)

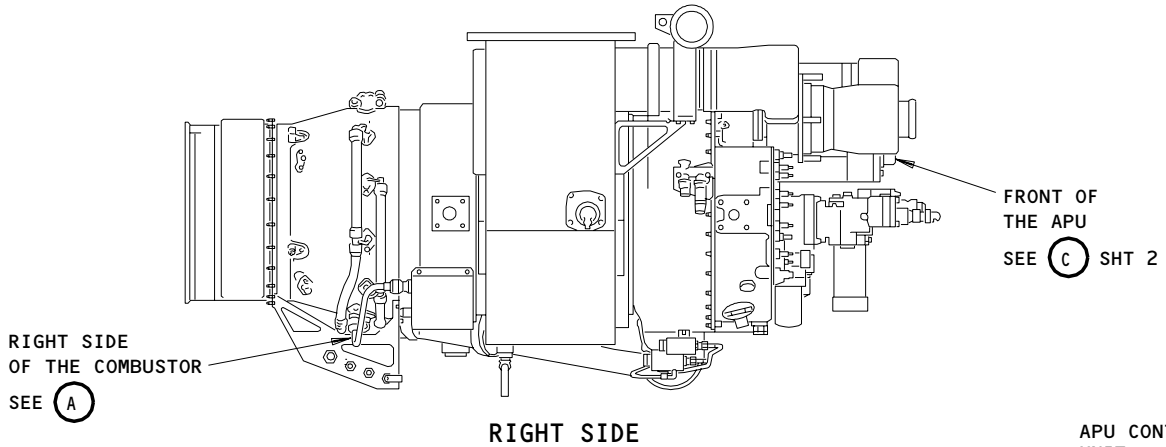
COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
PANEL – (FIM 24-33-00/101) STBY PWR CONT, M10062 PANEL – (FIM 26-11-00/101) FIRE/OVHT TEST, M10445 PANEL – (FIM 26-15-00/101) APU SHUTDOWN, P40 PANEL – (FIM 49-61-00/101) APU CONTROL, M1				
PLUG – IGNITER, M1	1	1	316AR, 315AL, APU COMP, RIGHT SIDE OF COMBUSTOR	49-41-02
RELAYS – (FIM 31-01-37/101) APU FAULT, K442 APU FUEL CONT, K175 EXT SHUTDOWN, K421 SYSTEM NO. 2 AIR/GND, K203 RELAYS – (FIM 31-01-49/101) APU START, K197 APU START CONTROL 1 APU START ENABLE 1 APU START TRU FAN CONT 1 APU START TRU OVERHEAT 1 APU TRU START 1 SWITCH – (FIM 26-22-00/101) APU FIRE, S39 SWITCH – (FIM 49-15-00/101) INLET DOOR OPEN, S506 UNIT – (FIM 24-32-00/101) APU START TRANSFORMER RECTIFIER, T189 1				
UNIT – IGNITION, M1	1	1	316AR, 315AL, APU COMP, RIGHT SIDE OF COMBUSTOR	49-41-03

APU Ignition and Starting System – Component Index
Figure 101 (Sheet 2)

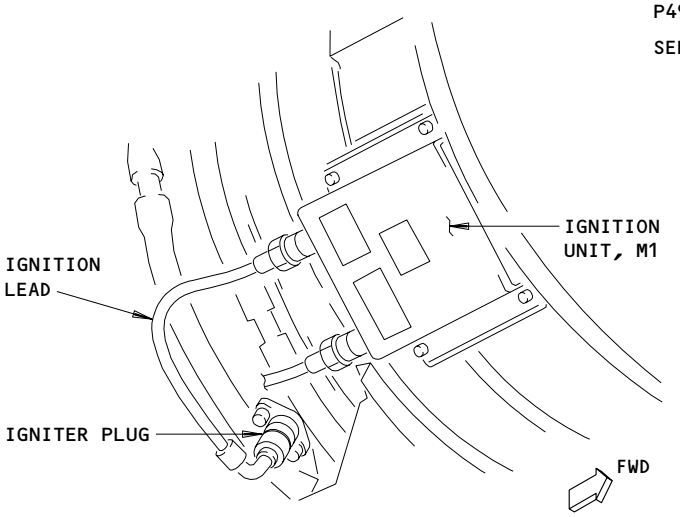


FLIGHT COMPARTMENT



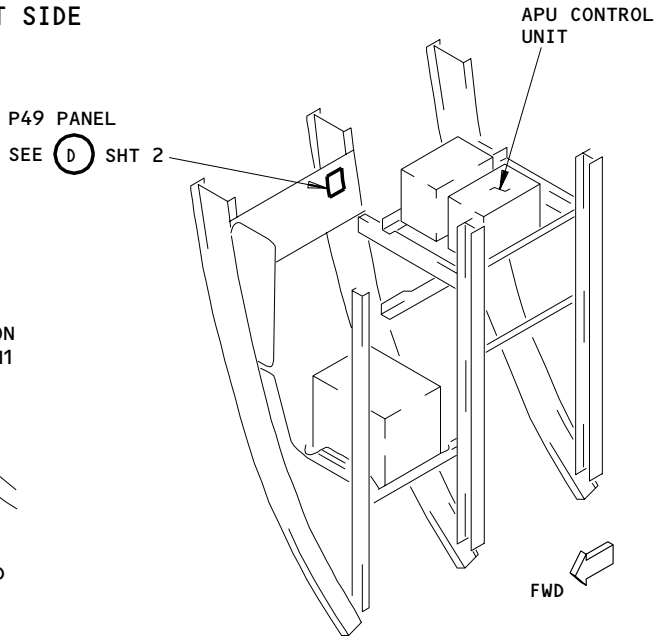


RIGHT SIDE



RIGHT SIDE OF THE COMBUSTOR

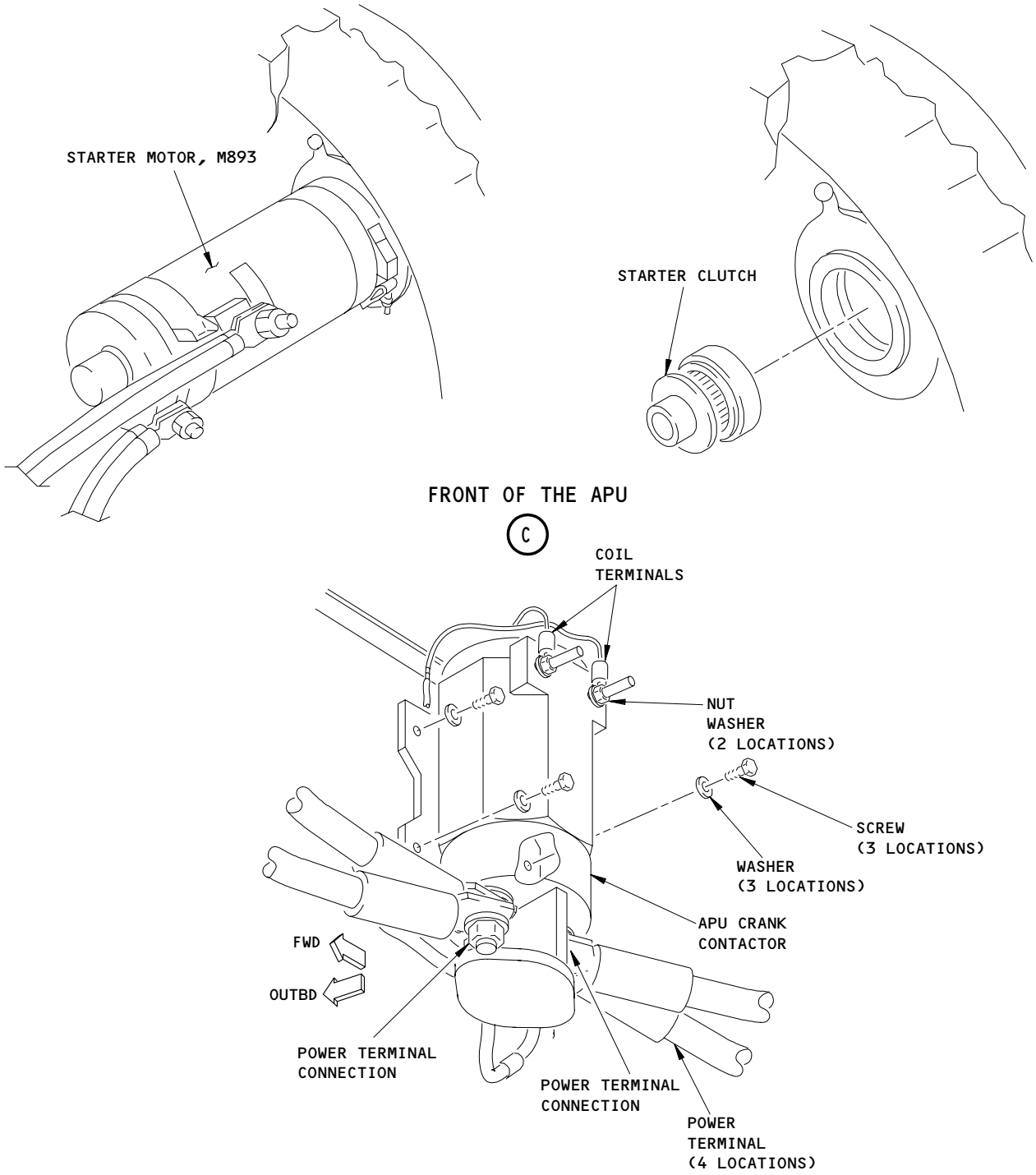
A



E6 RACK

B

APU Ignition and Starting System – Component Location
Figure 102 (Sheet 1)



APU Ignition and Starting System - Component Location (Details from Sht 1)
Figure 102 (Sheet 2)

APU COOLING AIR SYSTEM

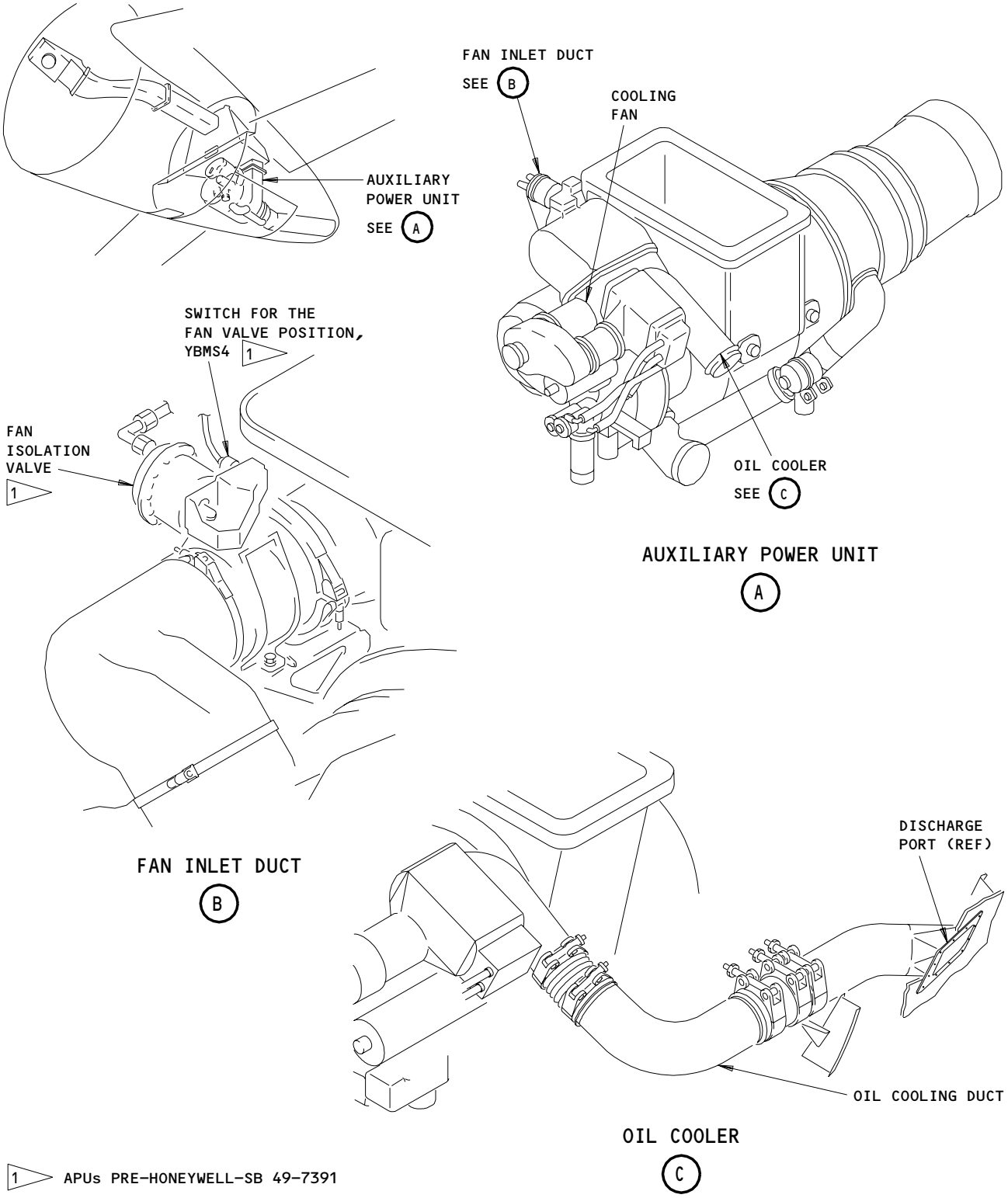
COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
DUCT – OIL COOLING	--	1	316AR,315AL	49-51-01
FAN – COOLING	--	1	316AR,315AL	49-51-03
VALVE – FAN ISOLATION 1	--	1	316AR,315AL	49-51-02
SWITCH – FAN VALVE POSITION, YBMS4 1	--	1	316AR,315AL	*

* SEE THE WDM EQUIPMENT LIST

1 APUs PRE-HONEYWELL SB 49-7391

APU Cooling Air System – Component Index
Figure 101

34343



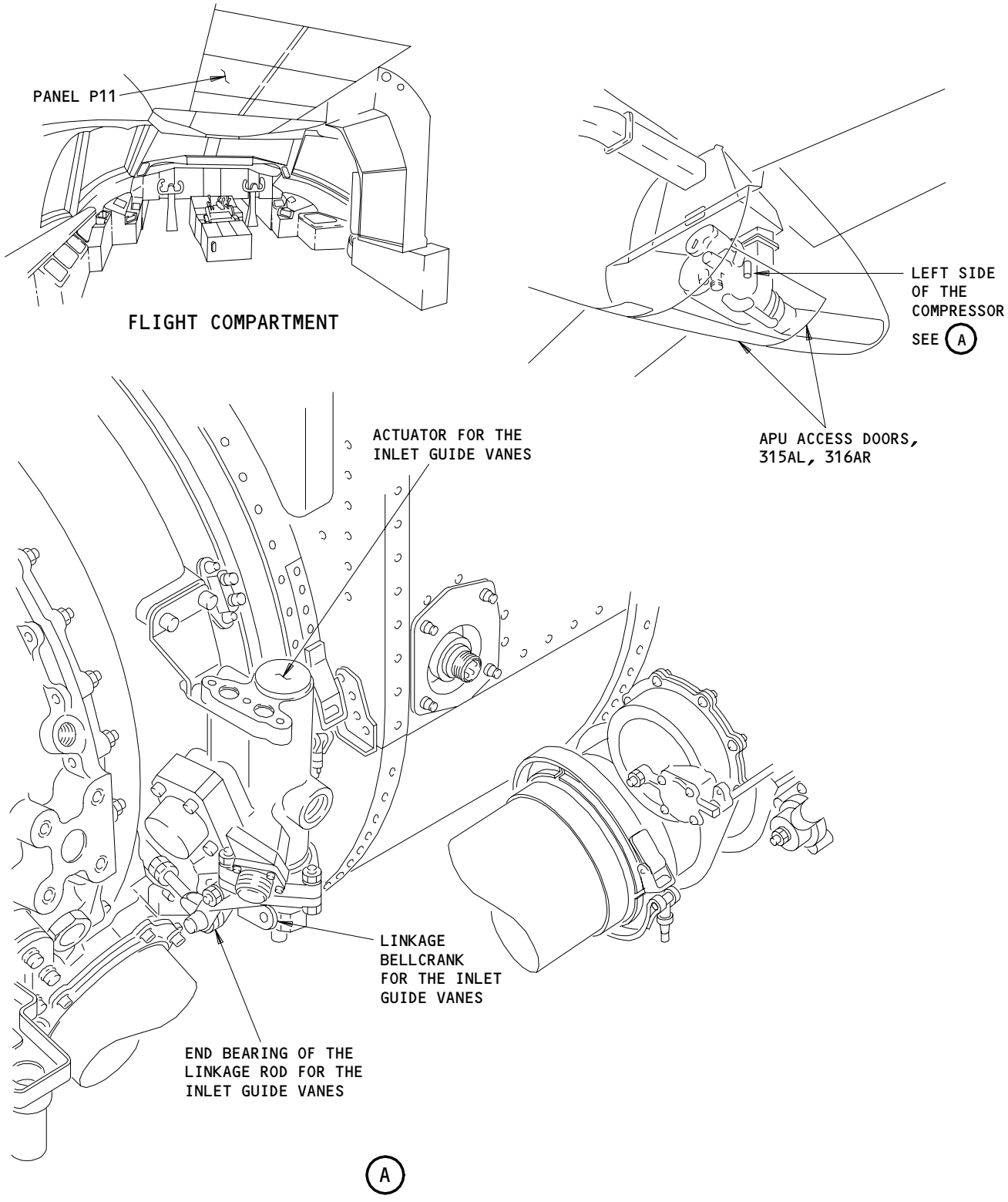
APU Cooling Air System - Component Location
Figure 102

APU BLEED AIR SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ACTUATOR - INLET GUIDE VANE, YBMM6	--	1	316AR,315AL, APU COMP, LEFT SIDE COMPRESSOR	49-52-02
BEARING - INLET GUIDE VANE LINKAGE ROD END	--	1	316AR,315AL, APU COMP, LEFT SIDE COMPRESSOR	49-52-01
BELLCRANK - INLET GUIDE VANE LINKAGE	--	1	316AR,315AL, APU COMP, LEFT SIDE COMPRESSOR	49-52-03
CARD ASSYS - (73-21-00/101) L ENG EEC DISCRETES, M590 R ENG EEC DISCRETES, M591				
CIRCUIT BREAKER - AIR SUPPLY APU BLEED CONT, C1333	--	1	11S24	*
RELAYS - (31-01-06/101) L ENG START 2, K10247 R ENG START 2, K10250				
RELAY - (31-01-37/101) SYSTEM NO. 2 AIR/GRD, K214				
RELAY - (31-01-49/101) APU AIR SUPPLY VALVE OPEN IND, K25				
SWITCH - (49-51-00/102) FAN VALVE POSITION, YBMS4				
TRANSDUCERS - (49-53-00/101) DIFFERENTIAL PRESSURE, YBMTS3 TOTAL PRESSURE, YBMTS2				
UNIT - (21-61-00/101) ZONE TEMPERATURE CONT, M195				
VALVE - SURGE, YBMM5 (49-53-00/101)				

* SEE THE WDM EQUIPMENT LIST

APU Bleed Air System - Component Index
Figure 101



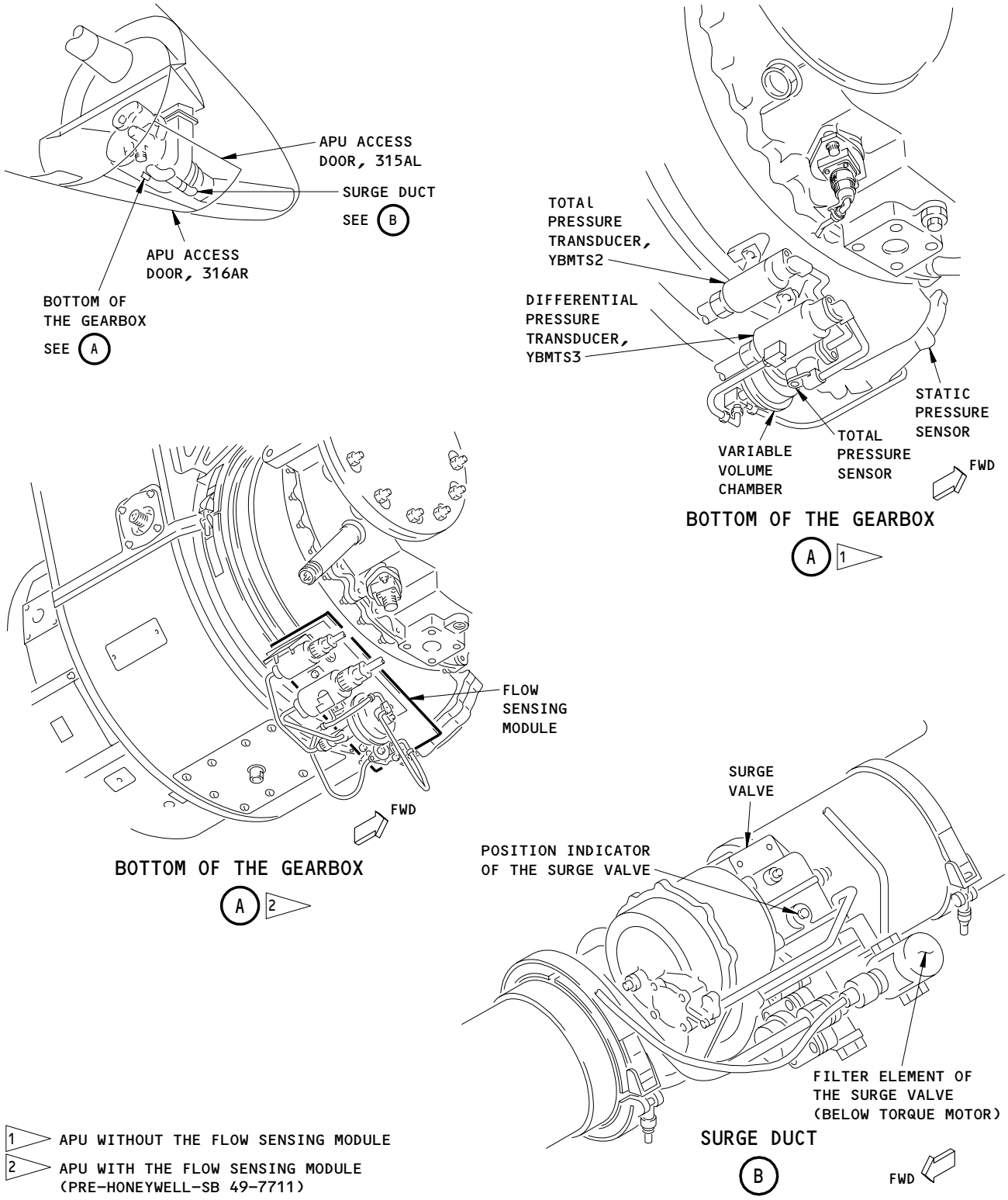
APU Bleed Air System - Component Location
Figure 102

APU SURGE BLEED SYSTEM

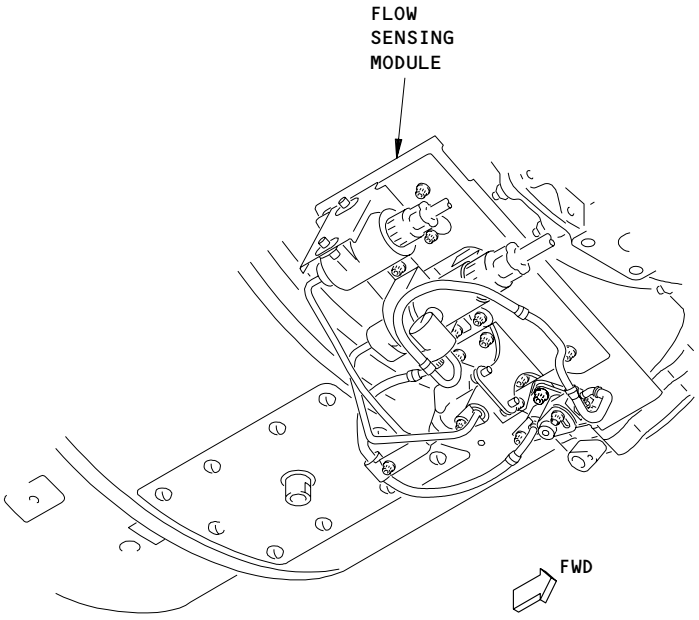
COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ELEMENT – SURGE VALVE FILTER	--	1	315AL,316AR, APU COMPT, SURGE DUCT	49-53-06
MODULE – FLOW SENSING 2	--	1	315AL,316AR, APU COMPT, BOTTOM OF GEARBOX	49-53-08
SENSOR – STATIC PRESSURE 1	--	1	315AL,316AR, APU COMPT, BOTTOM OF GEARBOX	49-53-05
SENSOR – TOTAL PRESSURE FLOW 1	--	1	315AL,316AR, APU COMPT, BOTTOM OF GEARBOX	49-53-03
TRANSDUCER – DIFFERENTIAL PRESSURE, YBMTS3 1	--	1	315AL,316AR, APU COMPT, BOTTOM OF GEARBOX	49-53-04
TRANSDUCER – TOTAL PRESSURE, YBMTS2 1	--	1	315AL,316AR, APU COMPT, BOTTOM OF GEARBOX	49-53-02
VALVE – SURGE, YBMM5	--	1	315AL,316AR, APU COMPT, SURGE DUCT	49-53-01

1 APUs WITHOUT THE FLOW SENSING MODULE
2 APUs WITH THE FLOW SENSING MODULE

APU Surge Bleed System – Component Index
Figure 101



APU Surge Bleed System - Component Location
Figure 102 (Sheet 1)



BOTTOM OF THE GEARBOX

A 3

3 APU WITH THE FLOW SENSING MODULE (POST-HONEYWELL-SB 49-7711)

APU Surge Bleed System - Component Location
Figure 102 (Sheet 2)

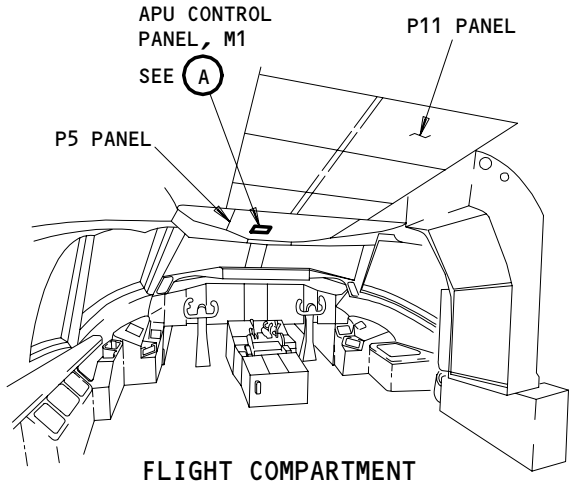
438811

APU CONTROL SYSTEM

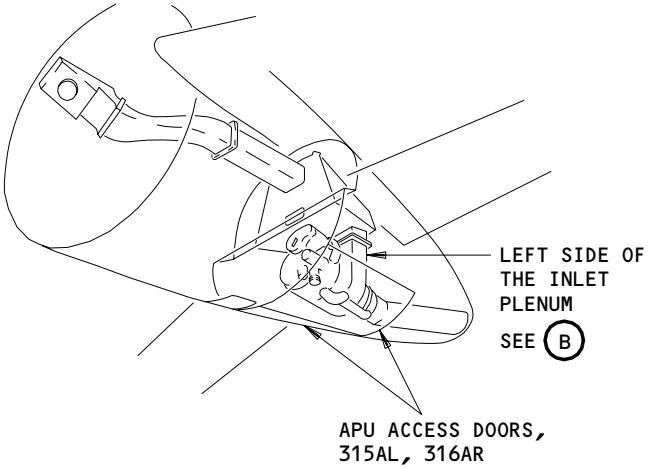
COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
MONOPOLE - YBMTS8,YBMTS9	1	2	315AR,316AL, APU COMP	49-61-02
PANEL - APU CONTROL, M1	1	1	FLT COMPT, P5	*
SENSOR - APU INLET PRESSURE, YBMTS4	1	1	315AR,316AL, APU COMP	49-61-04
SENSOR - APU INLET TEMPERATURE, YBMTS5	1	1	315AR,316AL, APU COMP	49-61-03
UNIT - AUXILIARY POWER CONTROL, M206	1	1	822, AFT EQUIP CTR, E6	49-61-05

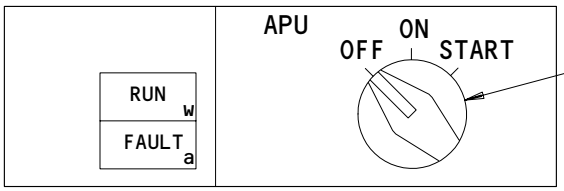
* SEE THE WDM EQUIPMENT LIST

APU Control System - Component Index
Figure 101



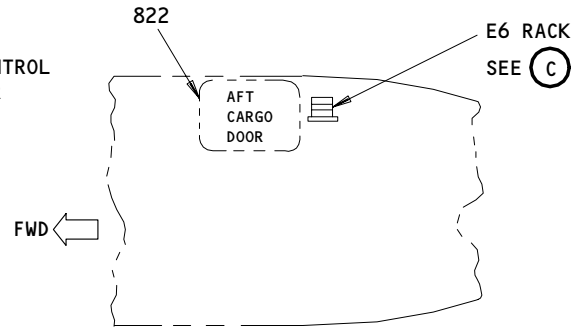
FLIGHT COMPARTMENT

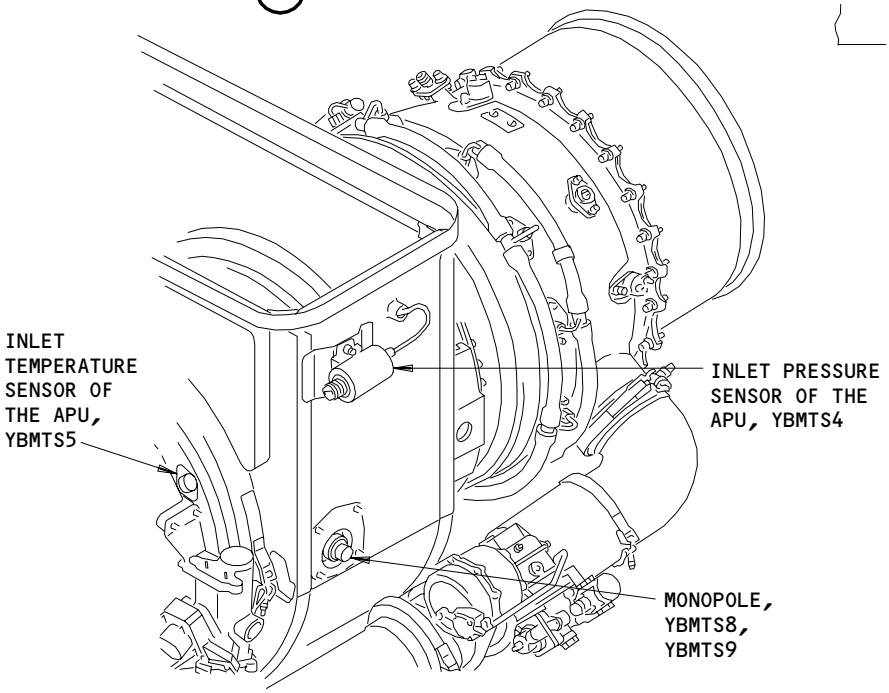




APU CONTROL PANEL, M1

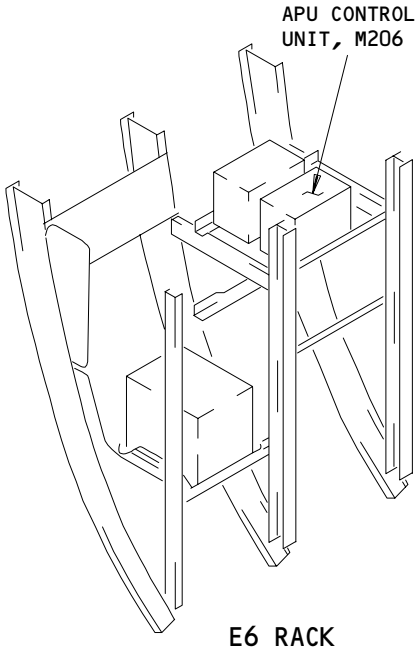
A





LEFT SIDE OF THE INLET PLENUM

B



E6 RACK

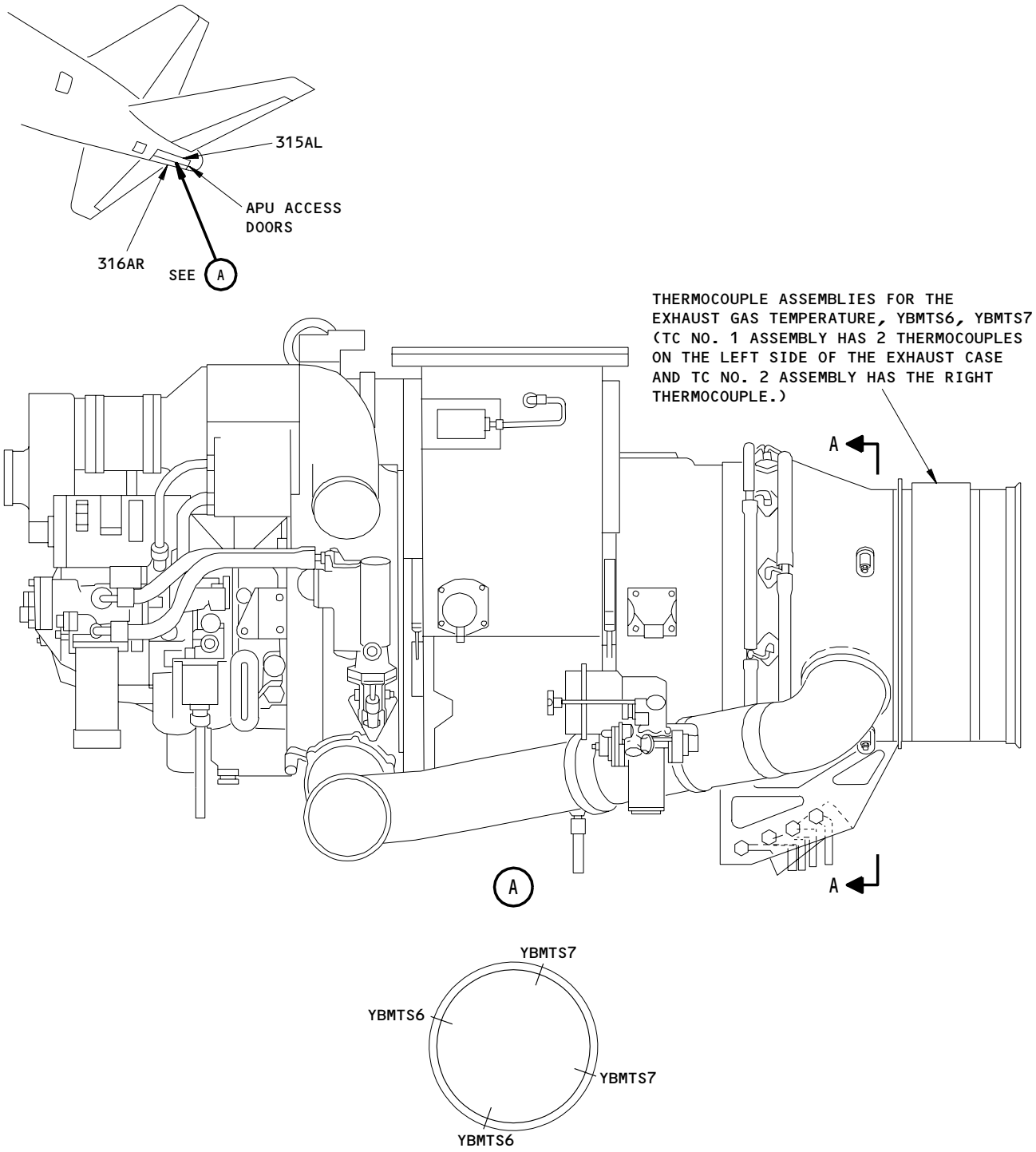
C

APU Control System – Component Location
Figure 102

APU EXHAUST GAS TEMPERATURE INDICATING SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ASSEMBLY – APU EGT THERMOCOUPLE, YBMTS6,YBMTS7 UNIT – (FIM 49-61-00/101) AUXILIARY POWER CONTROL, M206	--	2	316AR,315AL, APU COMPT	49-71-01

APU Exhaust Gas Temperature Indicating System – Component Index
Figure 101



(VIEW IN THE FORWARD DIRECTION)
A-A

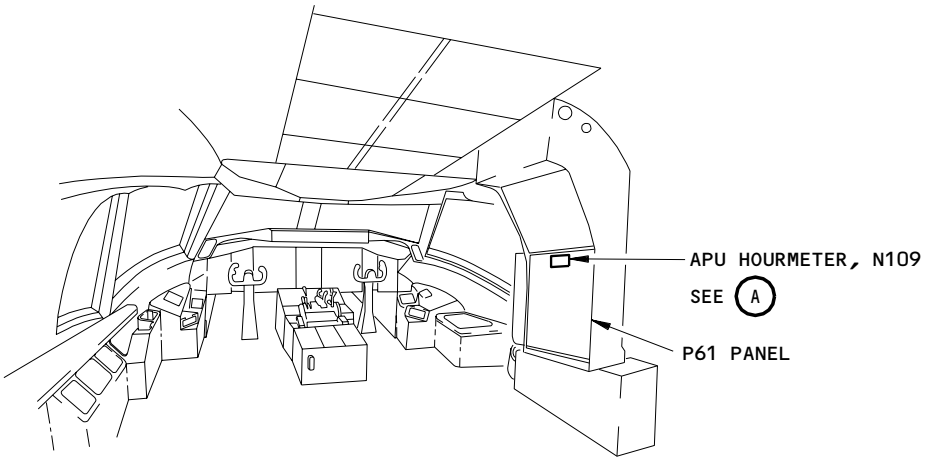
APU Exhaust Gas Temperature Indicating System - Component Location
Figure 102

APU INDICATING SYSTEM

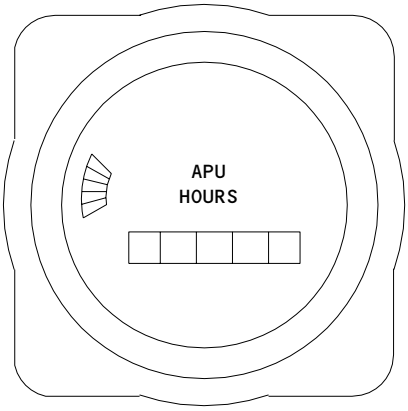
COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
HOURMETER, N109	--	1	FLT COMPT, P61	49-72-01

* SEE THE WDM EQUIPMENT LIST

APU Indicating System - Component Index
Figure 101



FLIGHT COMPARTMENT



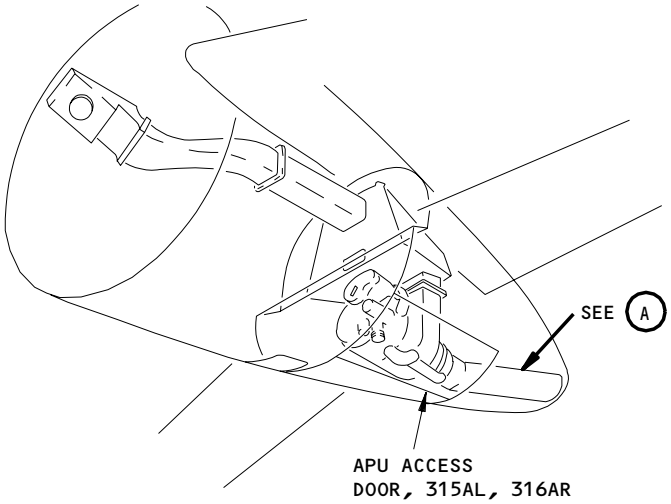
APU HOURMETER, N109
A

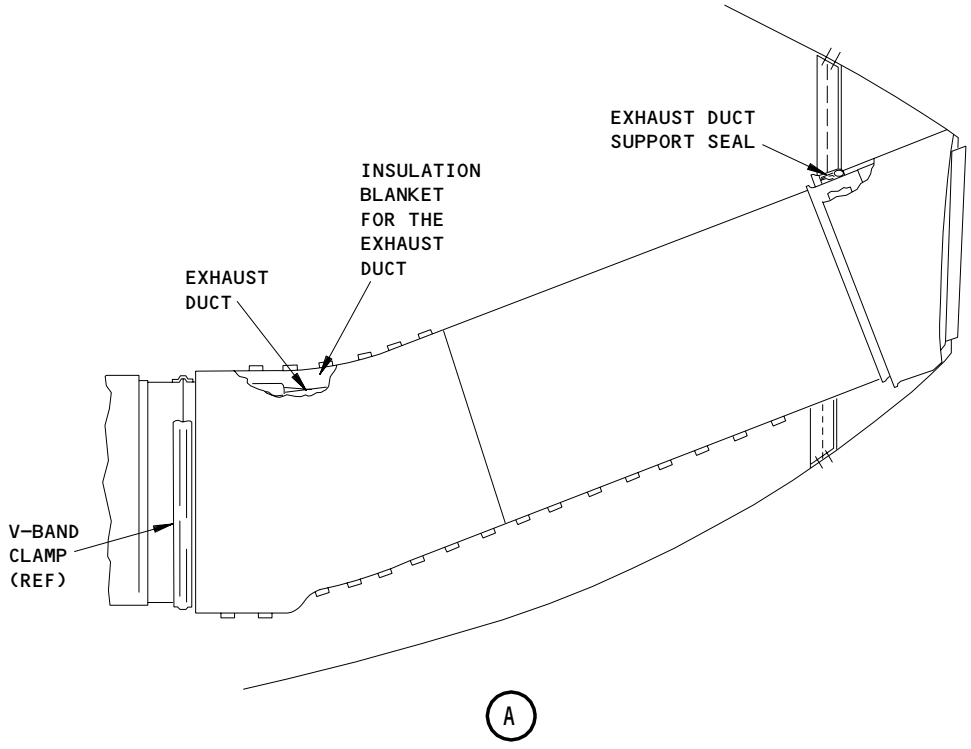
APU Indicating System – Component Location
Figure 102

APU EXHAUST SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
BLANKET – EXHAUST DUCT INSULATION	--	1	316AR, 315AL, APU COMPT	49-81-02
DUCT – EXHAUST	--	1	316AR, 315AL, APU COMPT	49-81-01
SEAL – EXHAUST DUCT SUPPORT	--	1	316AR, 315AL, APU COMPT	49-81-03

APU Exhaust System – Component Index
Figure 101



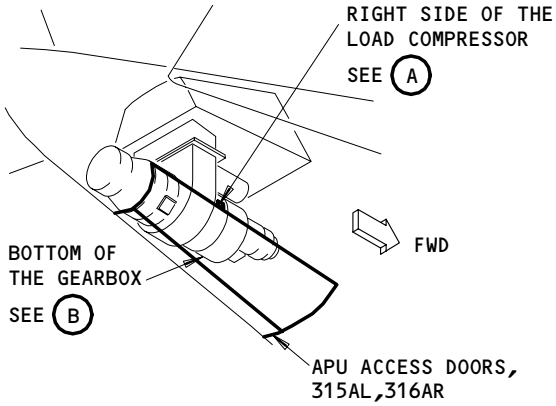


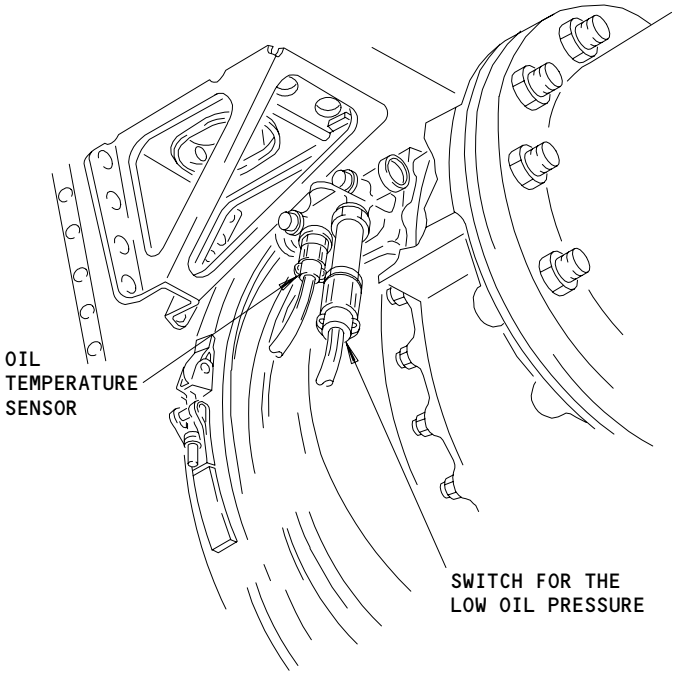
APU Exhaust System - Component Location
Figure 102

APU OIL INDICATING SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
SENSOR - OIL TEMPERATURE, YBMS1	--	1	315AL, 316AR, APU COMPT, RIGHT SIDE LOAD COMPRESSOR	49-94-01
SWITCH - LOW OIL PRESSURE, YBMS2	--	1	315AL, 316AR, APU COMPT, RIGHT SIDE LOAD COMPRESSOR	49-94-02
TRANSMITTER - OIL QUANTITY, YBMS3	--	1	315AL, 316AR, APU COMPT, BOTTOM OF GEARBOX	49-94-04

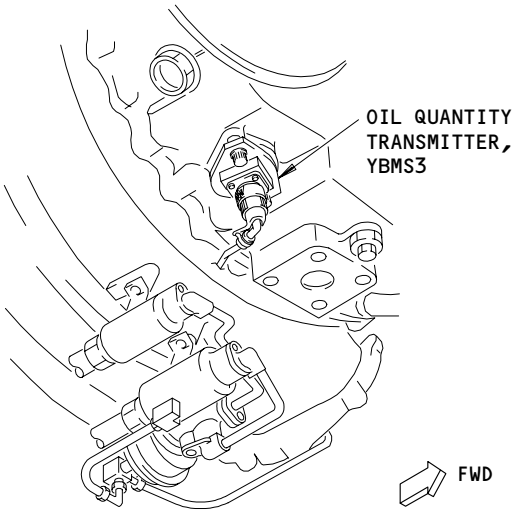
APU Oil Indicating System - Component Index
Figure 101





RIGHT SIDE OF THE LOAD COMPRESSOR

A



BOTTOM OF THE GEARBOX

B

APU Oil Indicating System – Component Location
Figure 102