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VHF OMNIDIRECTIONAL RANGE (VOR) SYSTEM	34-51-00		
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Component Location			
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Brg Flag on RDMIs, Lateral Dev Bar Missing on EHSI in VOR Mode, VORCP Freq Select OK (Fig. 109)		111	
VOR BITE Procedure (Fig. 103)		104	
VOR Display Problems on L (R) RDMI and EHSI (Fig. 107)		109	
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The VOL:<LABEL>,<FILENAME>N% and the INSERT DISK #1 Show Again and Again in Sequence While the Disk is in the Data Loader (Fig. 115)		134	
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VOL:<LABEL> Shows for More Than 3 Minutes after You Put the Disk into the Data Loader (Fig. 116)		135	

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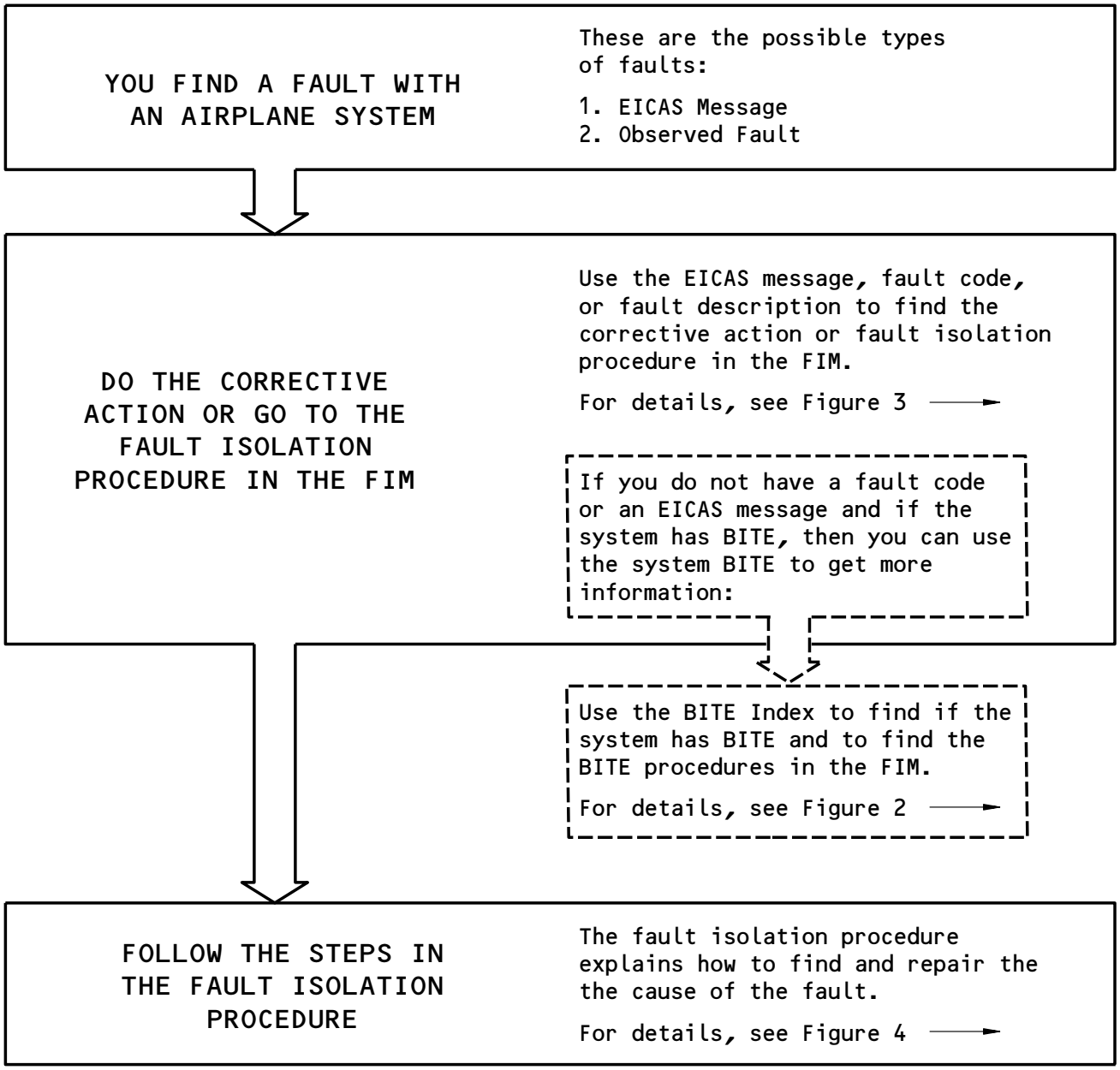

Basic Fault Isolation Process
Figure 1

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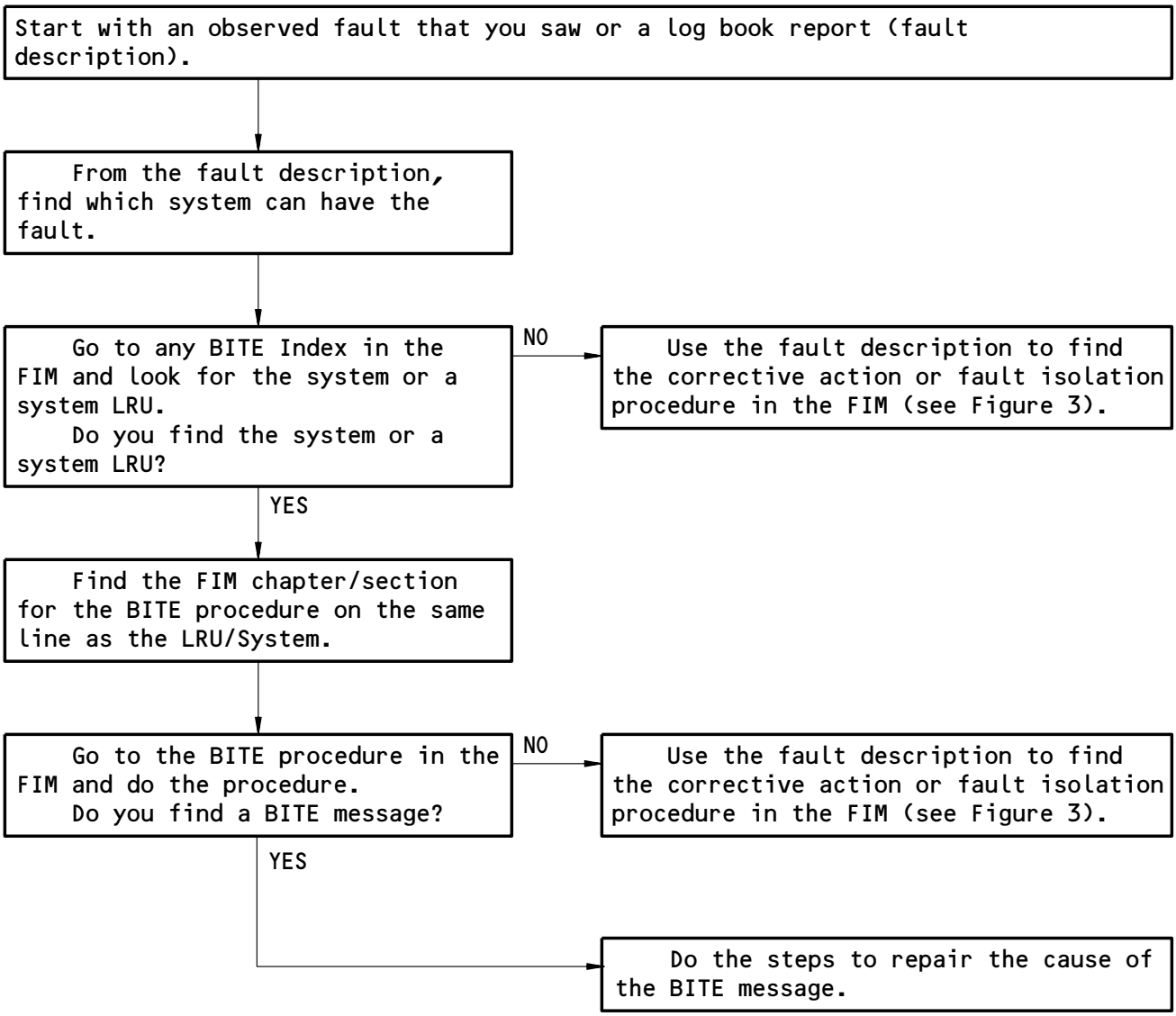

How to Get Fault Information from BITE
Figure 2

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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

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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

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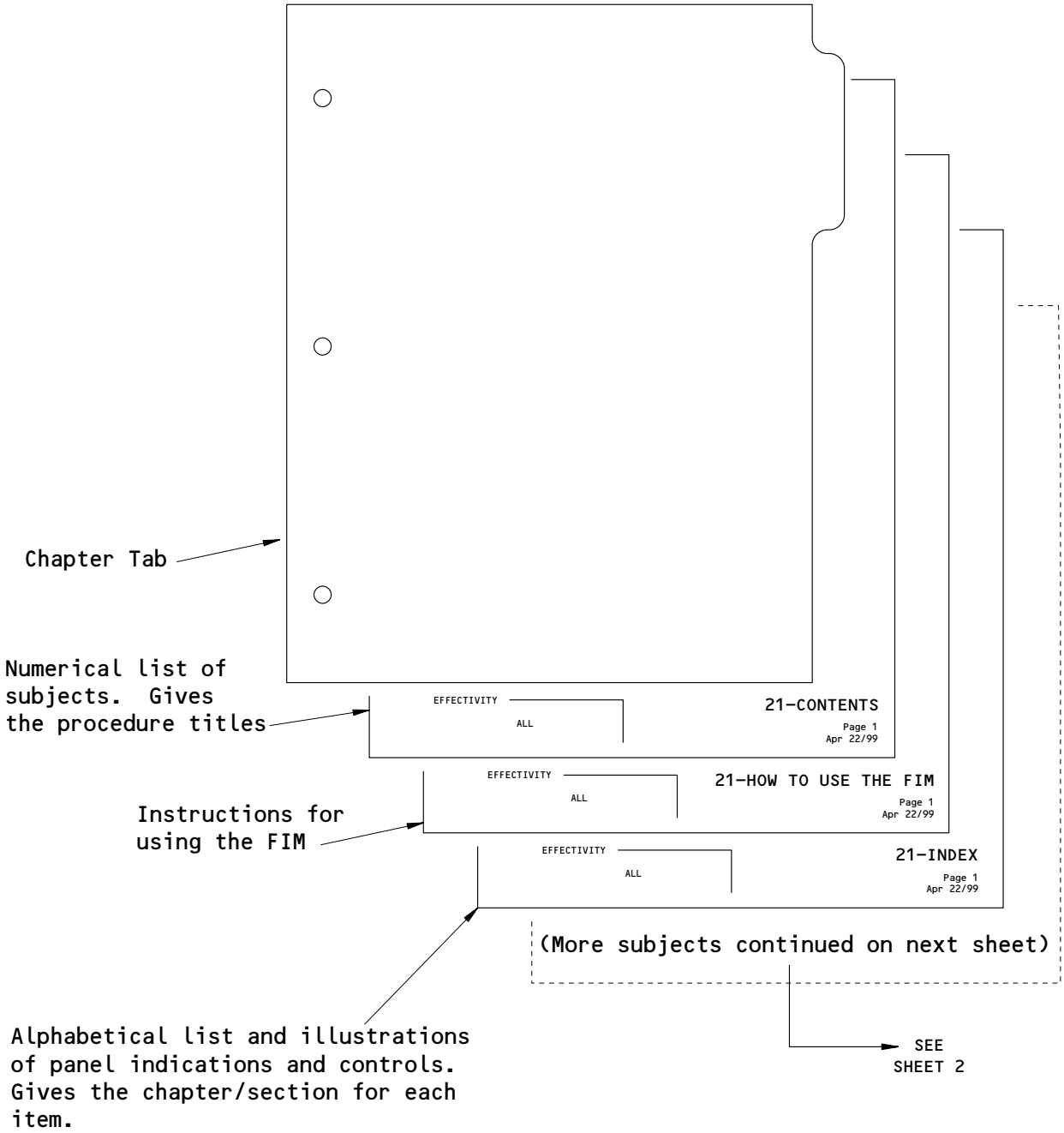

Subjects in Each FIM Chapter
Figure 5 (Sheet 1)

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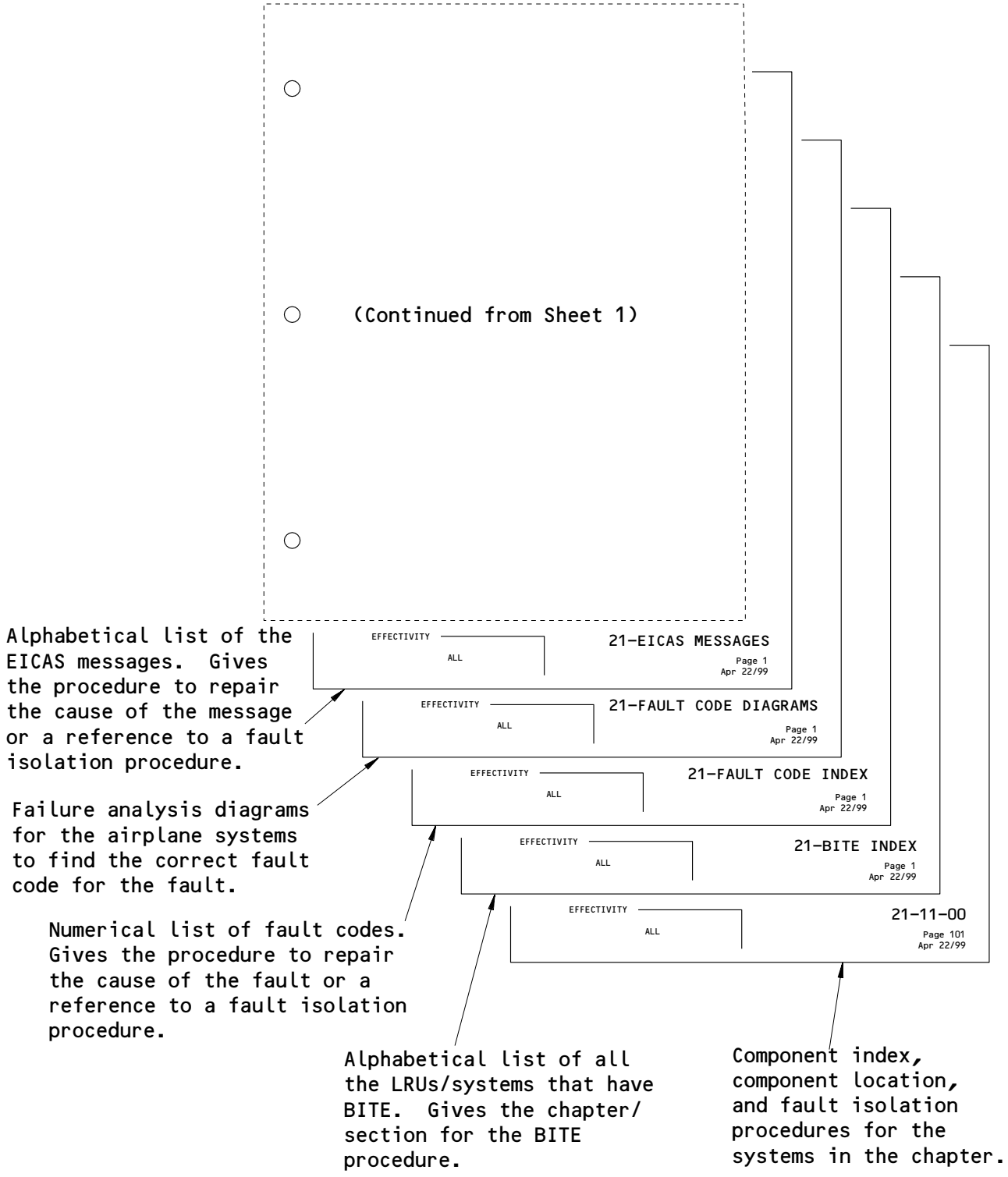

Subjects in Each FIM Chapter
Figure 5 (Sheet 2)

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NAVIGATION

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(L, R) FMC FAIL	3461
(L, R) GPS	3458
FMC MESSAGE	3461
GND PROX BITE	3446
GPS	3458
IAS DISAGREE	3412
INSTR SWITCH	3422
(CAPT, F/O) INSTR XFER	3422
(L, C, R) IRS DC FAIL	3421
(L, C, R) IRS FAULT	3421
(L, C, R) IRS ON DC	3421
OVERSPEED	3412
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FMC MESSAGES	CHAP/SEC
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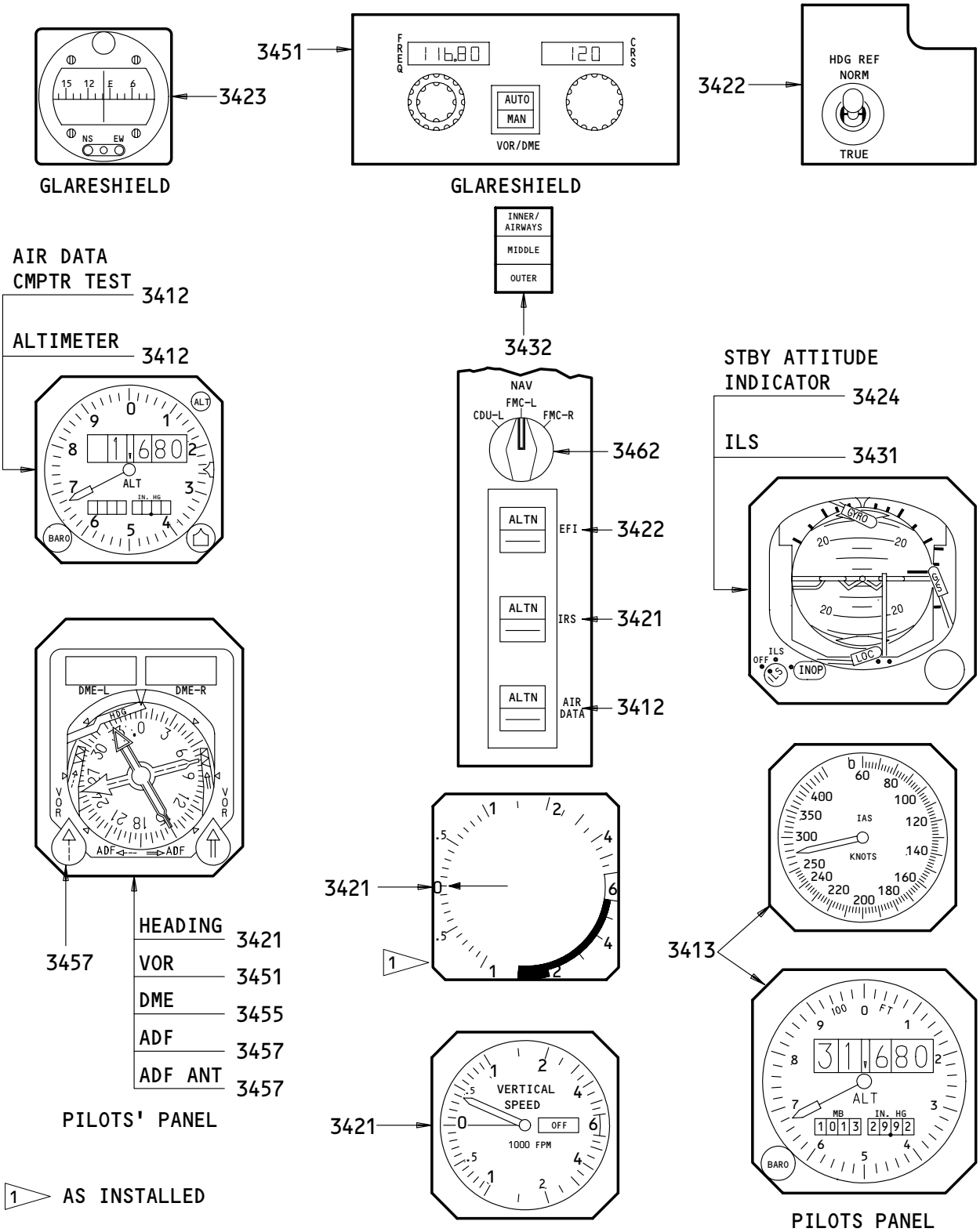

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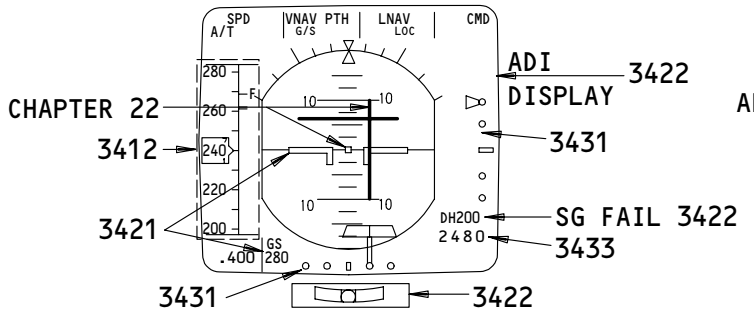

ADI

ADI FLAGS

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DH	3433
FD	CHAPTER 22
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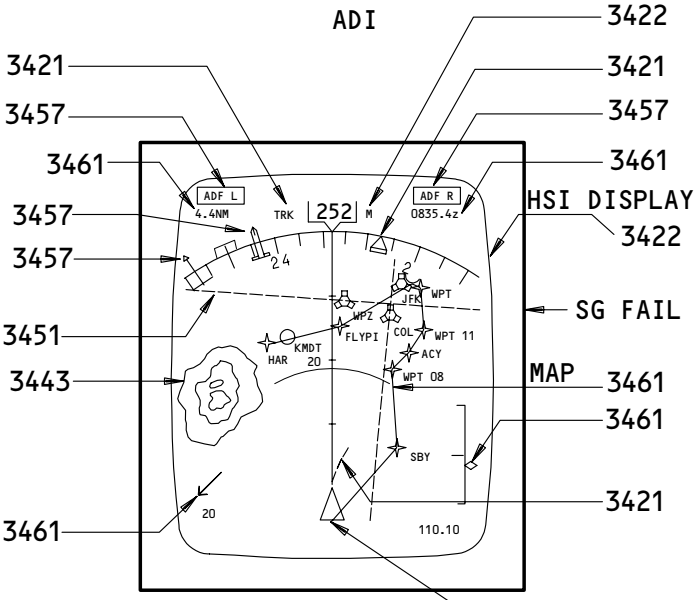
LOC	3431
RA	3433
SPD	3412



HSI (MAP MODE)
PILOTS PNL

HSI (PLAN MODE, MAP MODE, AND WXR) FLAGS, MSGS

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ADF R	3457
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MAP	3461
MAP RANGE DISAGREE	3461
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WXR DSPY	3443
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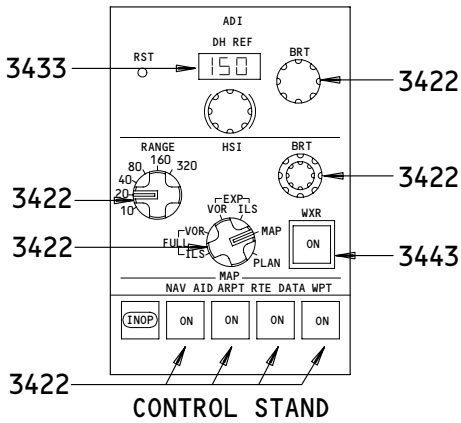
WXR FAIL STAB	3443
WXR FAIL WEAK	3443
WXR RANGE DISAGREE	3443
WXR/MAP RANGE DISAGREE	3443



CONTROL STAND

HSI (VOR MODE) FLAGS

VOR	3451

HSI (ILS MODE) FLAGS

GS	3431
LOC	3431

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EFFECTIVITY

ALL

256508

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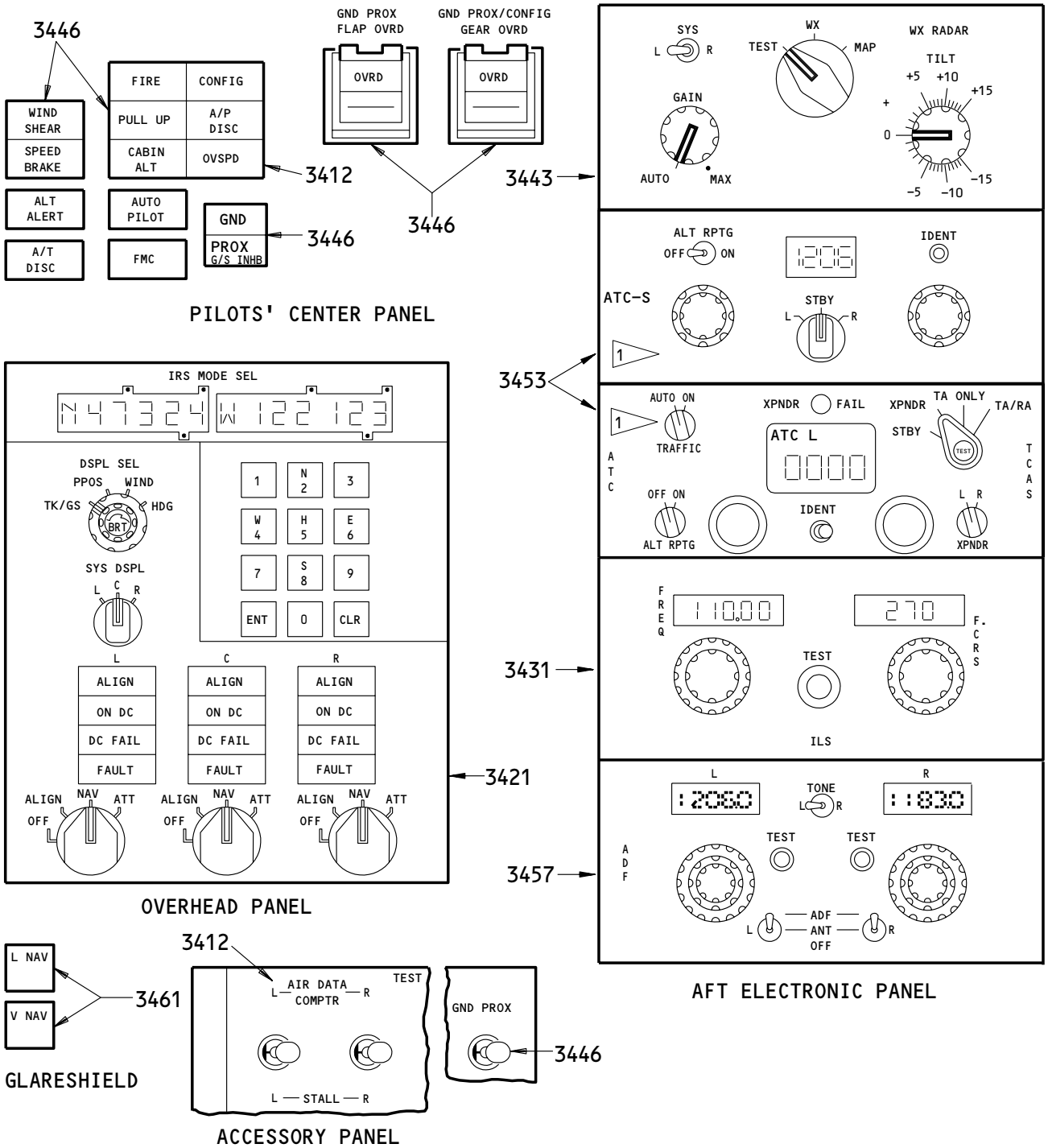

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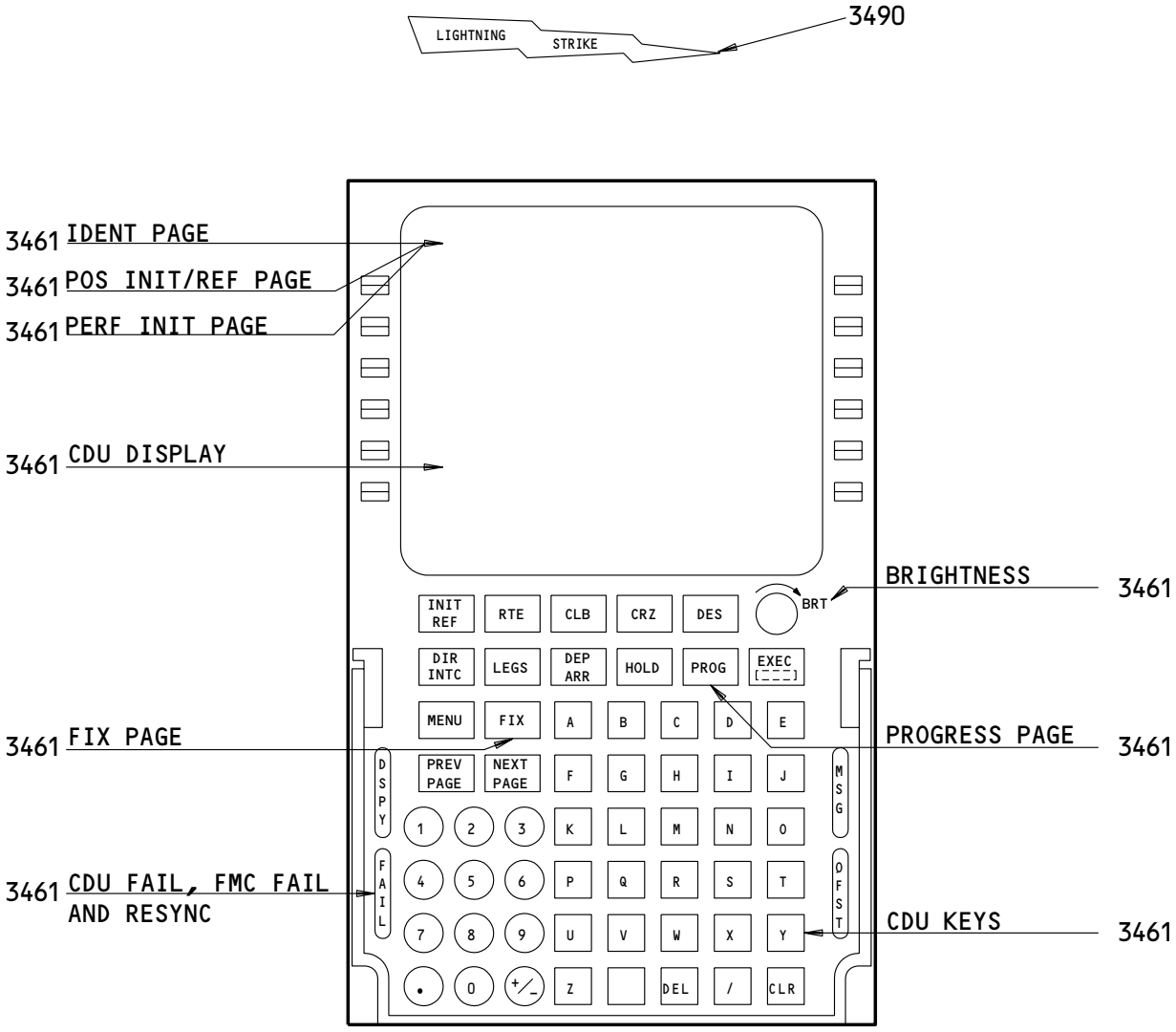

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EFFECTIVITY

ALL

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CHECK	
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ADF	
CONTROL	3457
MODE(S) (AUDIO & FLAGS)	3457
RDMI/RMI	3457
ADI	
ATTITUDE	3421
DISPLAY	3422
STANDBY	3424
AIR DATA COMPUTER TEST, SW (ALTN)	3412
AIRSPEED (ELECTRIC)	3412
AIRSPEED (STANDBY)	3413
ALTIMETER (ELECTRIC)	3412
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ATC TRANSPONDER	3453
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NAVIGATION - 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
            E - Communication messages medium
            F - Communication messages low
            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

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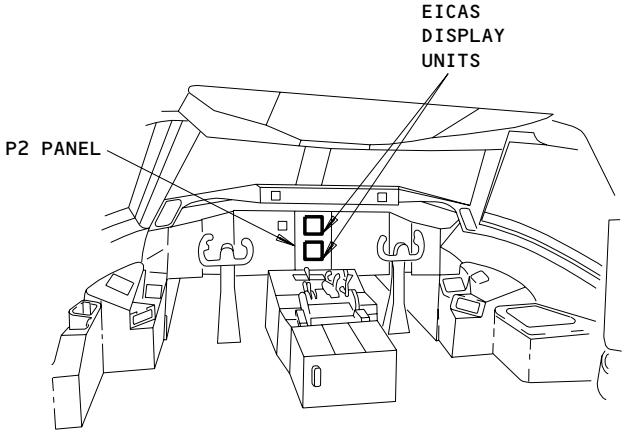
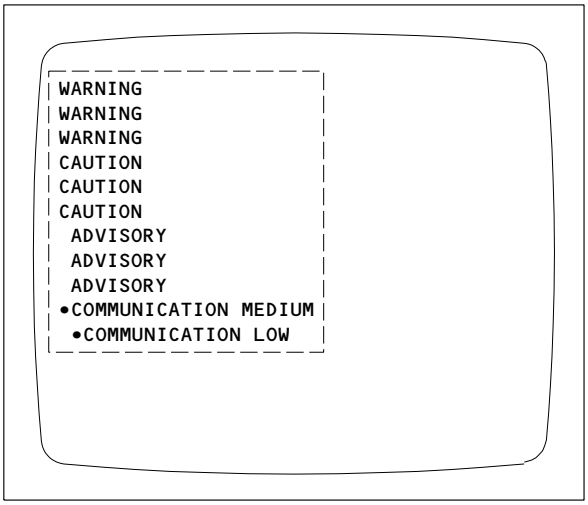
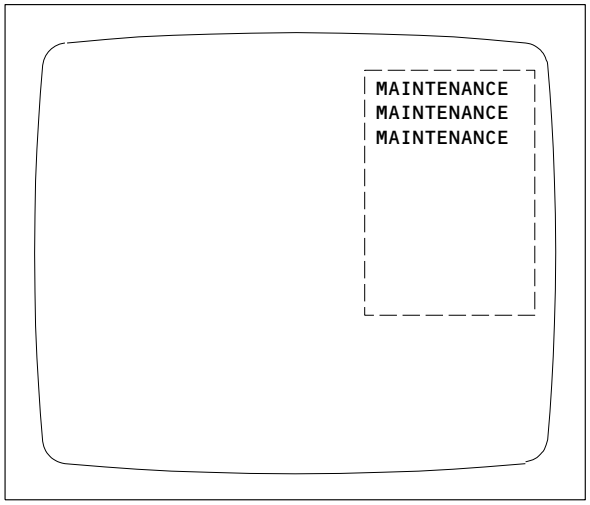


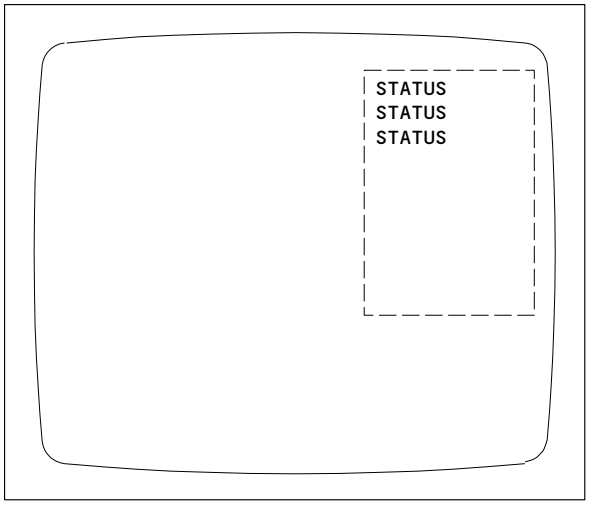
FLIGHT COMPARTMENT



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

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EICAS MESSAGE LIST		
EICAS MESSAGE	LEVEL	PROCEDURE
ALT DISAGREE	B	FIM 34-12-00/101, Fig. 104
ALTITUDE ALERT	B	Replace the altitude alert module, M617 (AMM 34-16-01/401).
ATC FAULT	C	FIM 34-53-00/101, Fig. 103
ATT DISAGREE	B	FIM 34-21-00/101, Fig. 107
ATT FAIL	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message.
COMPARATOR BITE	S,M NVM	FIM 34-22-00/101, Fig. 109
F/O PVD	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message.

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EICAS MESSAGE LIST		
EICAS MESSAGE	LEVEL	PROCEDURE
FAST/SLOW FAIL	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message.
FMC MESSAGE	C	FIM 34-61-00/101, Fig. 111
GND PROX BITE	S,M	FIM 34-46-00/101, Fig. 103
GND PROX SYS	C	FIM 34-46-00/101, Fig. 103
GND PROX SYS	S,M	FIM 34-46-00/101, Fig. 103
G/S DISAGREE	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message.
G/S FAIL	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message. If this message is not a nuisance message, see FIM 34-31-00/101, Fig. 104.

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EICAS MESSAGE LIST		
EICAS MESSAGE	LEVEL	PROCEDURE
HDG DISAGREE	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message.
HDG FAIL	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message.
IAS DISAGREE	B	FIM 34-12-00/101, Fig. 104
INSTR SWITCH	B	If "INSTR SWITCH" shows when only one of the two EFI switches are in the ALTN position, replace the L (R) EFI source select switch, S3 (S11) (AMM 33-13-00/201). If the problem continues, examine and repair the applicable circuits (WDM 34-22-17, WDM 34-22-27).
L(R) FMC FAIL	C	FIM 34-61-00/101, Fig. 108A

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EICAS MESSAGE LIST		
EICAS MESSAGE	LEVEL	PROCEDURE
L(R,C) IRS DC FAIL	C	Restore AC and DC power (AMM 24-22-00/201). If the problem continues, refer to FIM 34-21-00/101, Fig. 105.
L(R,C) IRS FAULT	C	FIM 34-21-00/101, Fig. 107
L(R,C) IRS ON DC	C	Restore AC power (AMM 24-22-00/201). If the problem continues, refer to FIM 34-21-00/101, Fig. 106.
LOC DISAGREE	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message.
LOC FAIL	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message. If the message is not a nuisance message, see FIM 34-31-00/101, Fig. 104.
OVERSPEED	A	- Visually examine the airplane structure (AMM 05-51-04/201). - Do the Air Data System - Operational/Test (AMM 34-12-00/501). - If an Air Data Computer fails, replace the applicable Air Data Computer (AMM 34-12-01/401).

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EICAS MESSAGE LIST		
EICAS MESSAGE	LEVEL	PROCEDURE
PILOT RESPONSE	A,B,C	No activity has been detected on the MCP, EFIS/EICAS, Radio Control Panel, MCDU, or HF/VHF radios. Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message.
RA DISAGREE	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message.
SNGL SOURCE ILS	C	767-400 Airplanes with Rockwell Collins MultiMode Receiver (MMR); If this EICAS Message with no correlated maintenance message, then no maintenance action is necessary.
TCAS	C	FIM 34-45-00/101, Fig. 103
TCAS FAIL	C	FIM 34-45-00/101, Fig. 103
TCAS OFF	C	TCAS is in TA or TA/RA mode. No maintenance action is necessary.
TRACK FAIL	C	EICAS OPS S/W -01 THRU -03; Do a check for a nuisance EICAS message: Put the EICAS computer select switch to an alternative position. If the message does not show, open and then close the circuit breaker for the EICAS computer that shows the nuisance message. If the problem continues, replace the EICAS computer that shows the nuisance message.

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EICAS MESSAGE LIST		
EICAS MESSAGE	LEVEL	PROCEDURE

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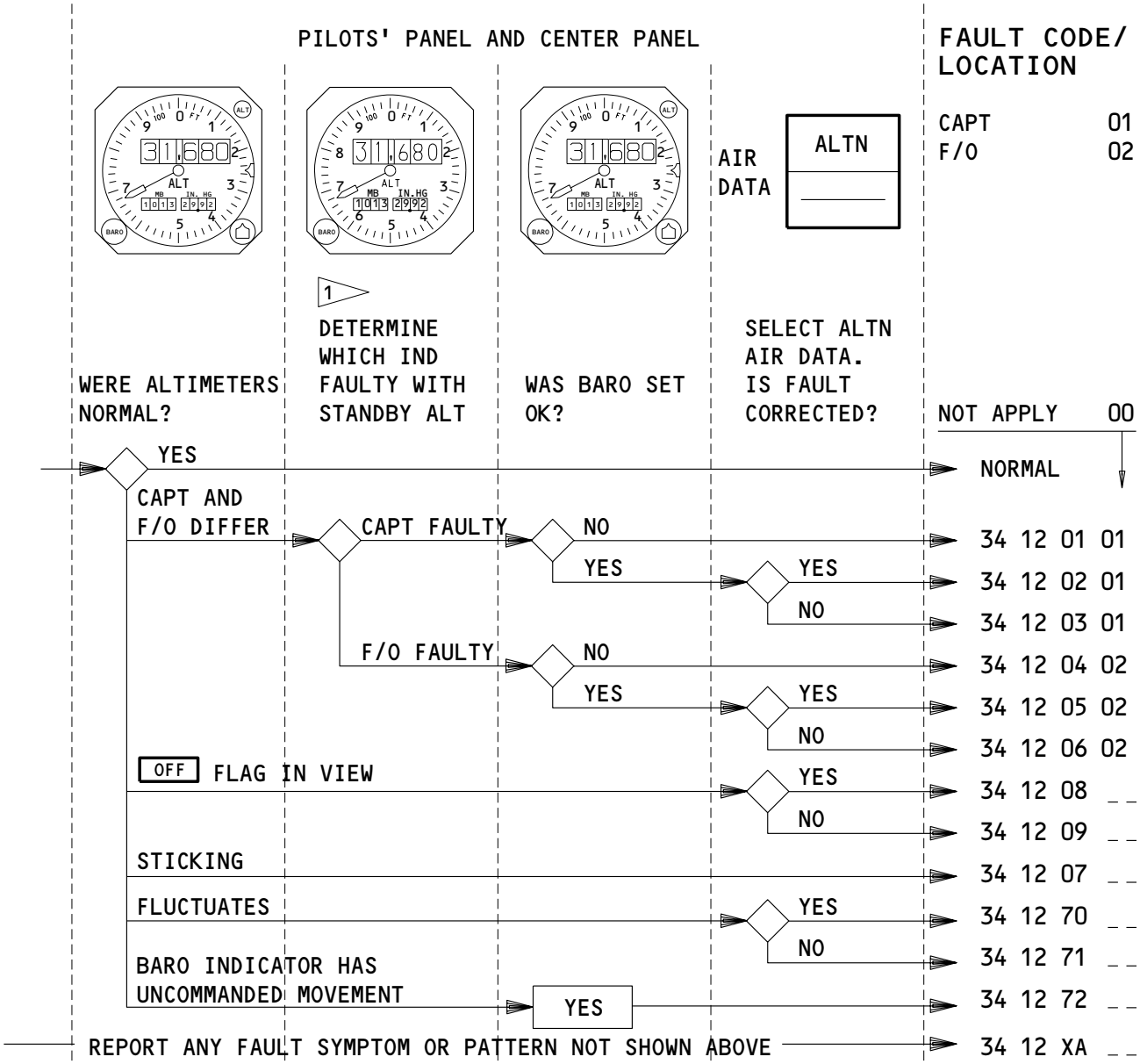

1 SEE "ALTIMETER TOLERANCES" CHART TO CORRECT STANDBY ALTIMETER READING BEFORE COMPARING TO CAPT AND F/O ALTIMETER.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A10	AIR DATA CMPTR L	11E23	ALTM (R)
11A11	AIR DATA AOA SENSOR L	11E23	RIGHT ALTM
11A12	AIR DATA BARO CORRECT L	11F30	(RIGHT) AIR DATA CMPTR (R)
11E2	LEFT ALTM	11F31	(RIGHT) AIR DATA AOA SENSOR (R)
11E2	ALTM (L)	11F32	(RIGHT) AIR DATA BARO CORRECT (R)

ELECTRIC ALTIMETER – FAULT CODES

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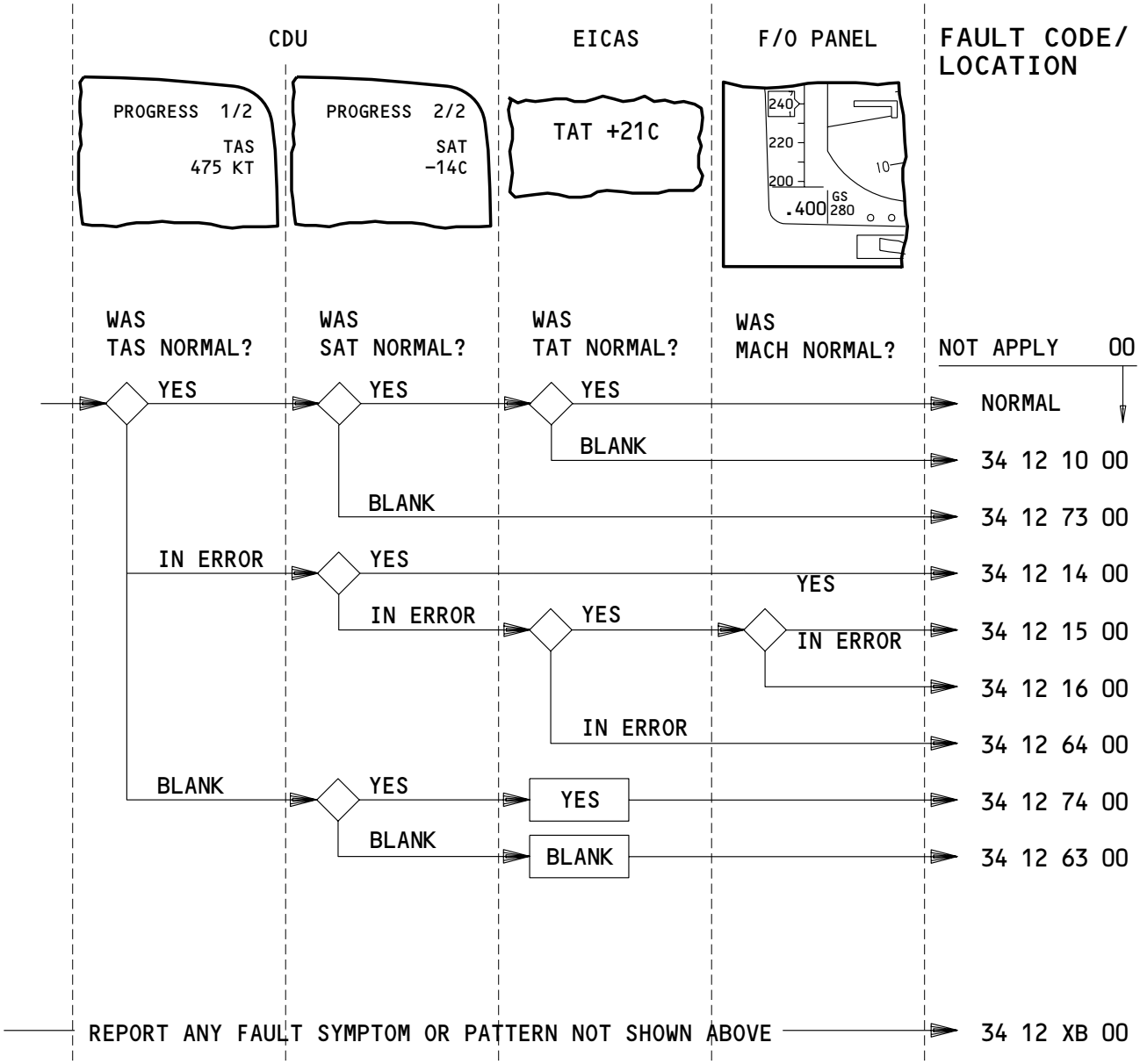

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A10	AIR DATA CMPTR L	11F30	(RIGHT) AIR DATA CMPTR (R)
11E22	(RIGHT) IAS MACH (R)	11F31	(RIGHT) AIR DATA AOA SENSOR (R)
11F14	TMC AC	11F32	(RIGHT) AIR DATA BARO CORRECT (R)
11F15	TMC DC		

TAS, SAT AND TAT - FAULT CODES

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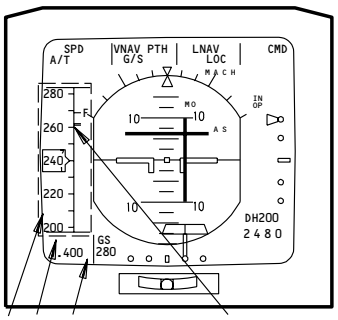
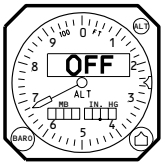
PILOTS' PANEL





AIR DATA — ALTN

SELECT ALTN AIR DATA

EFI — ALTN

SELECT ALTN EFI

FAULT CODE/ LOCATION

CAPT	01
F/O	02
BOTH	03

WAS MACH, AIRSPEED, NORM? — WAS MSG DIS-PLAYED, BUG NOT NORMAL? — WAS OFF FLAG IN VIEW ON ALTIMETER? — WAS FAULT CORRECTED? — WAS FAULT CORRECTED?

NOT APPLY 00

- YES → TO SHEET 2
- NO → SEL SPD DISPLAYED → 22 12 82
- V1 INOP DISPLAYED → 34 63 22
- SPD LIM DISPLAYED → 27 32 04
- CMD AS BUG DISAGREES WITH (MCP, FMS CDU) → YES: 34 22 48; NO: 22 12 83
- V1, VR OR COMMAND AIRSPEED BUG NOT NORMAL, MISSING, ETC → YES: 34 22 49; NO: 22 12 84
- V1, VR NOT NORMAL, MISSING, ETC → YES: 34 22 50; NO: 34 63 23
- AIRSPEED DISPLAY FAULTY → YES: 34 22 51; NO: 34 12 86
- AIRSPEED FLUCTUATES, INOP, ETC → YES: 34 12 77; NO: 34 12 78
- 1 CAPT & F/O
- AIRSPEED DIFFER (ONE IN ERROR) → YES: 34 12 21; NO: 34 12 22
- 2 CAPT & F/O MACH DIFFER → YES: 34 12 23; NO: 34 12 24
- 2 CAPT & F/O A/S & MACH DIFFER → YES: 34 12 27; NO: 34 12 28
- SPD FLAG IN VIEW → NO: YES: 34 12 29; NO: 34 12 30; YES: YES → 34 12 87
- MACH FLAG IN VIEW → YES: 34 12 31; NO: 34 12 32
- REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 12 XC

1 DETERMINE WHICH IND FAULTY BY COMPARING WITH STBY AIRSPEED AND/OR USING PERFORMANCE CHARTS.
2 SEE "AIRSPEED TOLERANCES" CHART.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A10	AIR DATA CMPTR L	11E22	(RIGHT) IAS MACH (R)	11F30	(RIGHT) AIR DATA CMPTR (R)
11A11	AIR DATA AOA SENSOR L	11F8	EFIS SYM GEN L	11F31	(RIGHT) AIR DATA AOA SENSOR (R)
11A12	AIR DATA BARO CORRECT L	11F9	EFIS SYM GEN CTR	11F32	(RIGHT) AIR DATA BARO CORRECT (R)
11E1	(LEFT) IAS MACH (L)	11F29	EFIS SYM GEN		

MACH, AIRSPEED & ALTN AIR DATA (SHEET 1) – FAULT CODES

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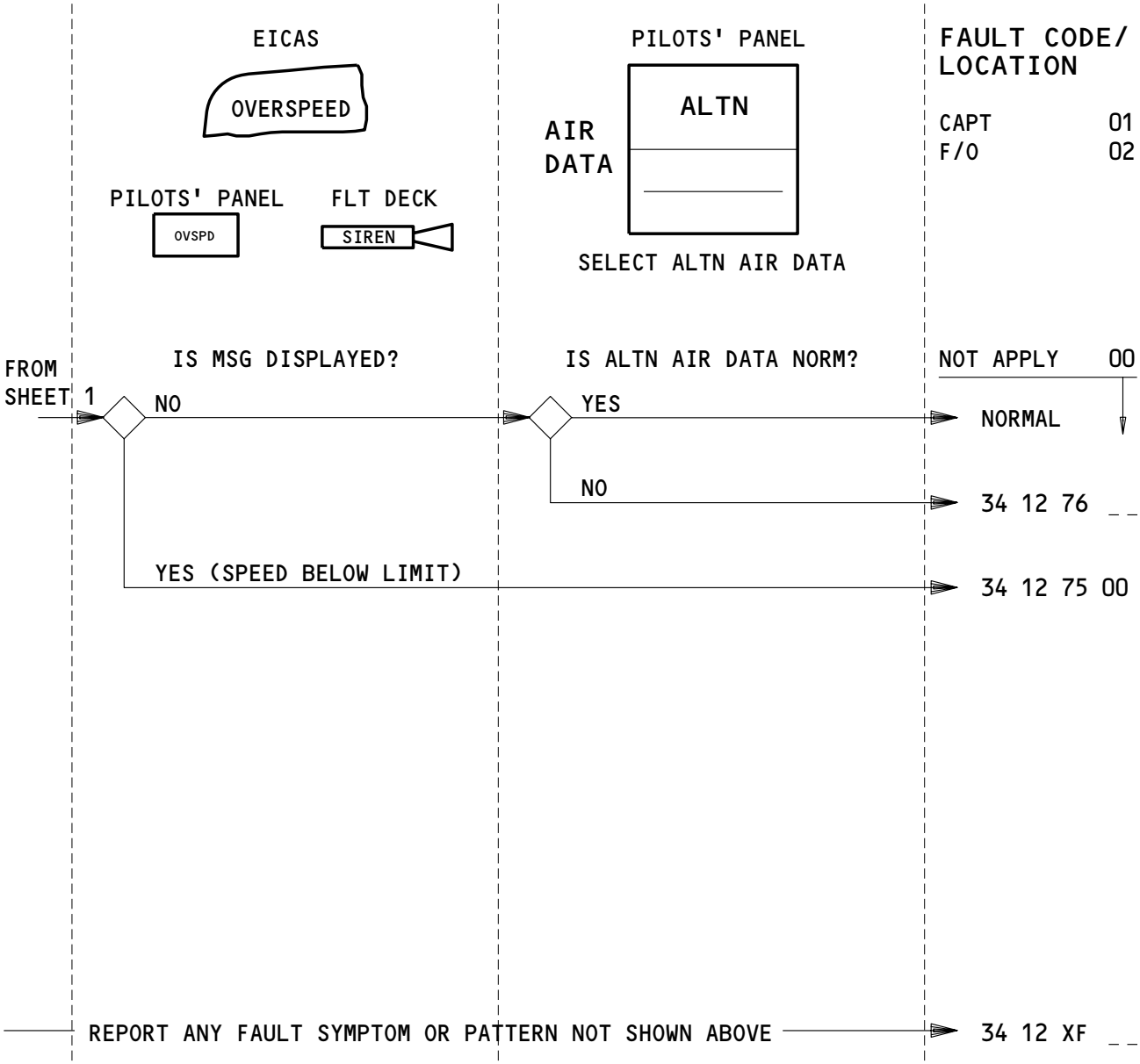

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A10	AIR DATA CMPTR L	11E22	(RIGHT) IAS MACH (R)
11A11	AIR DATA AOA SENSOR L	11E23	ALTM (R)
11A12	AIR DATA BARO CORRECT L	11F30	(RIGHT) AIR DATA CMPTR (R)
11E1	(LEFT) IAS MACH (L)	11F31	(RIGHT) AIR DATA AOA SENSOR (R)
11E2	ALTM (L)	11F32	(RIGHT) AIR DATA BARO CORRECT (R)

ELECTRIC MACH, AIRSPEED & ALTN AIR DATA (SHEET 2) - FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

133531

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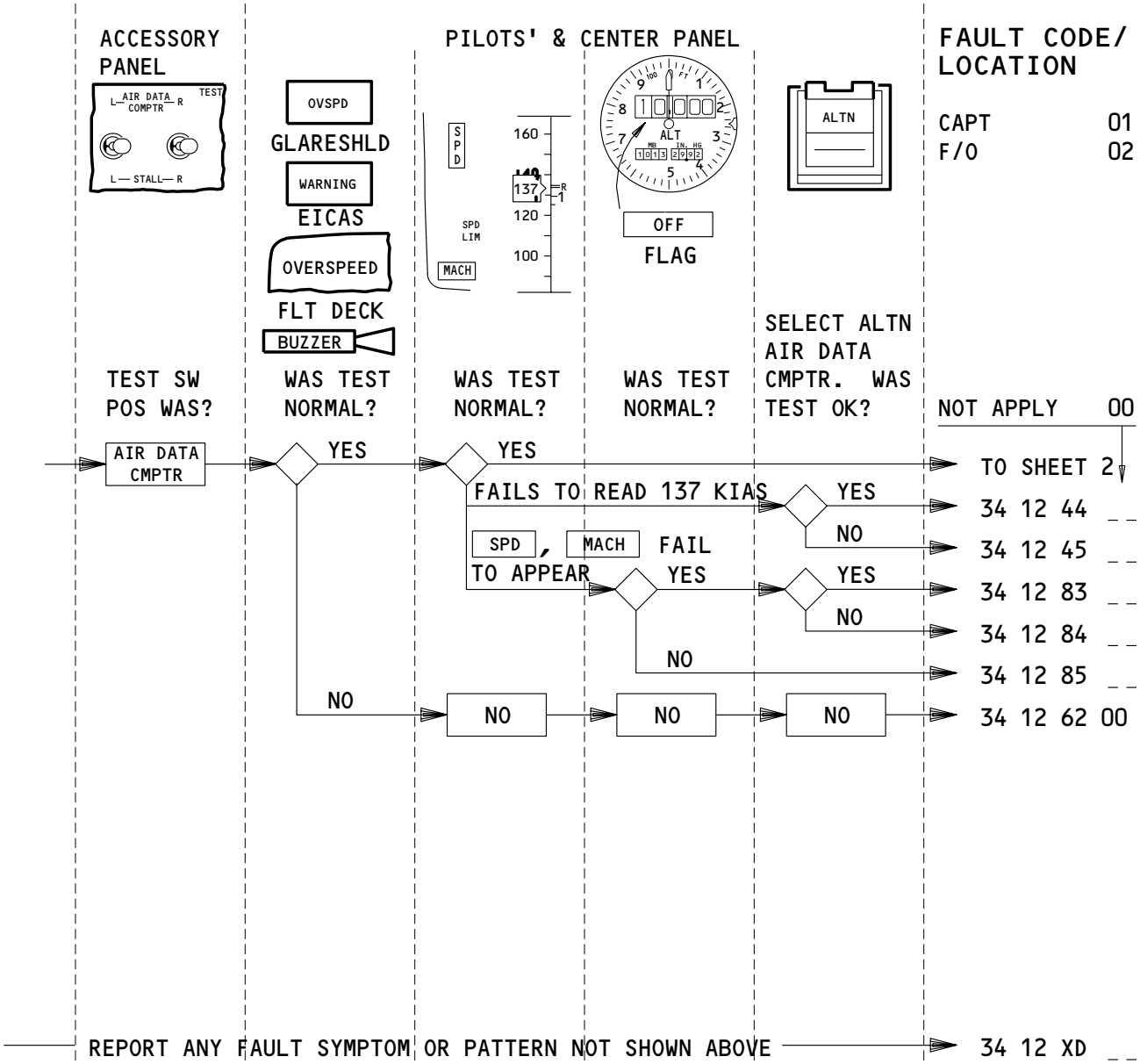

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A10	AIR DATA CMPTR L	11E22	(RIGHT) IAS MACH (R)
11A11	AIR DATA AOA SENSOR L	11E23	(RIGHT) ALTM (R)
11A12	AIR DATA BARO CORRECT L	11F30	(RIGHT) AIR DATA CMPTR (R)
11E1	(LEFT) IAS MACH (L)	11F31	(RIGHT) AIR DATA AOA SENSOR (R)
11E2	(LEFT) ALTM (L)	11F32	(RIGHT) AIR DATA BARO CORRECT (R)

AIR DATA COMPUTER TEST (SHEET 1) – FAULT CODES

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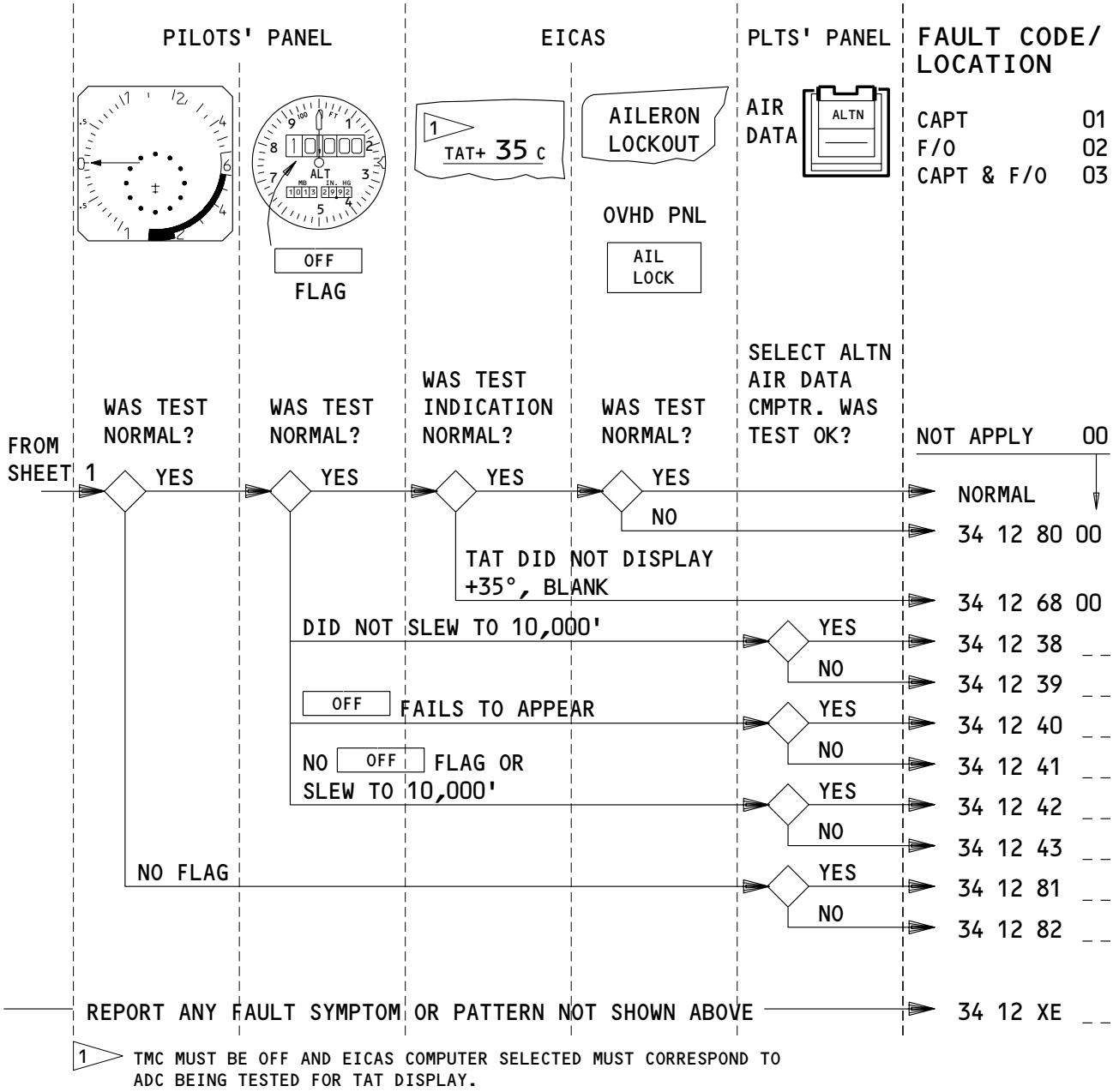

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A10	AIR DATA CMPTR L	11E22	(RIGHT) IAS MACH (R)
11A11	AIR DATA AOA SENSOR L	11E23	(RIGHT) ALTM (R)
11A12	AIR DATA BARO CORRECT L	11F30	(RIGHT) AIR DATA CMPTR (R)
11E1	(LEFT) IAS MACH (L)	11F31	(RIGHT) AIR DATA AOA SENSOR (R)
11E2	(LEFT) ALTM (L)	11F32	(RIGHT) AIR DATA BARO CORRECT (R)

AIR DATA COMPUTER TEST (SHEET 2) – FAULT CODES

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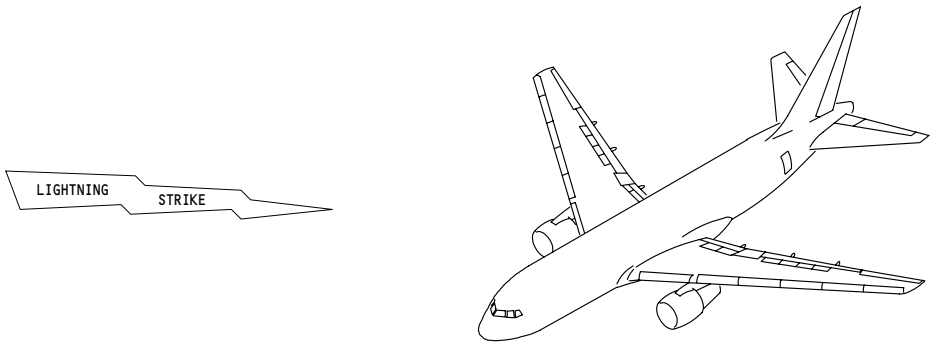
AIRPLANE

FAULT CODE/
LOCATION



DID LIGHTNING STRIKE OCCUR?

NOT APPLY 00

NO → NORMAL

NOSE RADOME → 34 90 01 00

NACELLE → 34 90 02 00

WING TIP → 34 90 03 00

L.E. FLAP → 34 90 04 00

UNKNOWN AREA → 34 90 05 00

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 90 XA 00

APPLICABLE CIRCUIT BREAKERS

NONE

LIGHTNING STRIKE – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

223131

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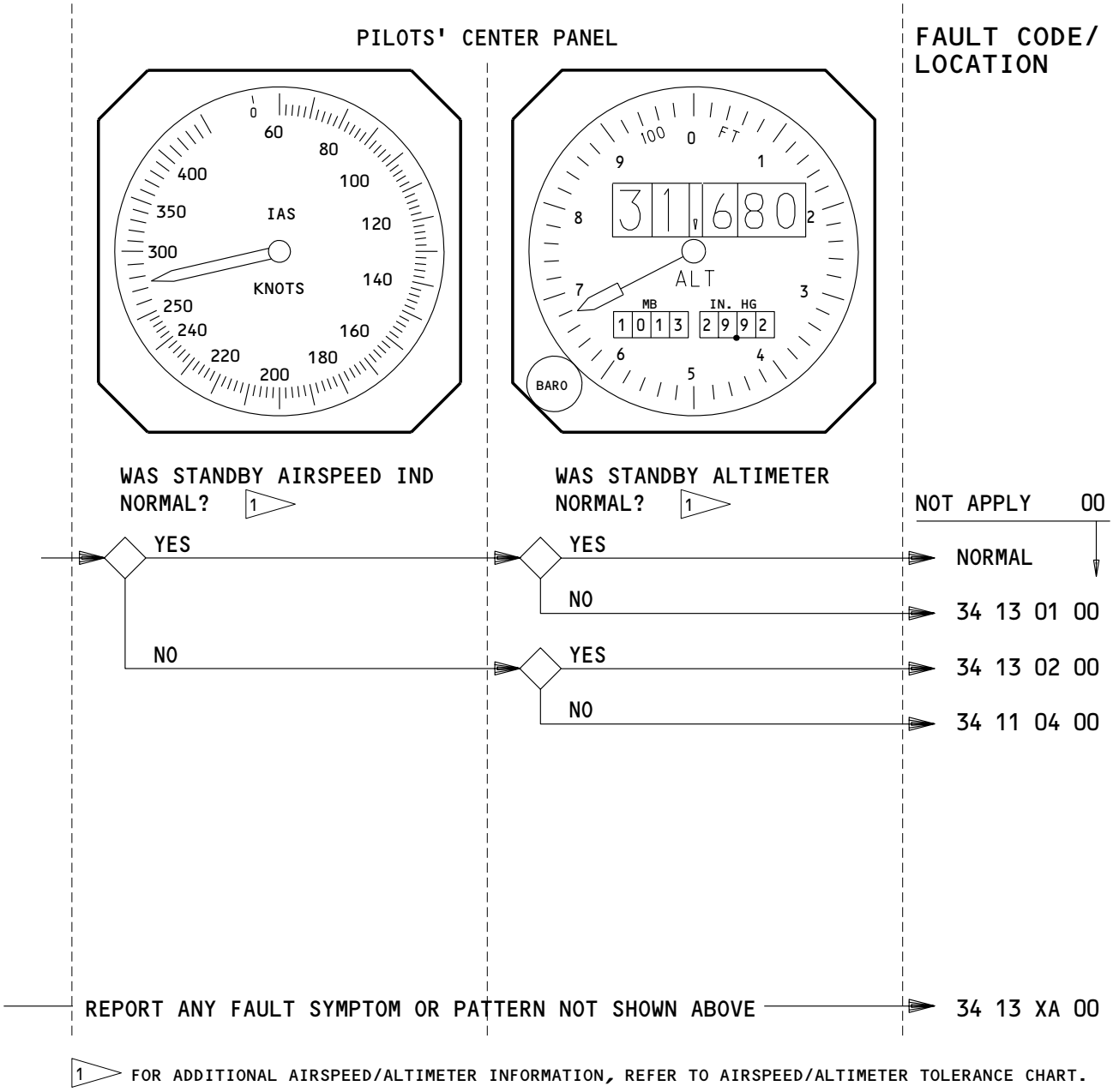

1 FOR ADDITIONAL AIRSPEED/ALTIMETER INFORMATION, REFER TO AIRSPEED/ALTIMETER TOLERANCE CHART.

APPLICABLE CIRCUIT BREAKERS

11A8	STBY ALTM VIB

STANDBY AIRSPEED AND ALTIMETER – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

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CHART 1 ALTIMETER TOLERANCES - GROUND

ALTITUDE FEET	MAX DIFFERENCE	
	CAPT & F/O	CAPT OR F/O STANDBY
SEA LEVEL	40	35
5,000'	40	50
10,000'	45	60

ALTIMETER TOLERANCES - FLIGHT

ALTITUDE FEET	IAS/MACH	MAX. DIFFERENCE		
		CAPT & F/O	CAPT OR F/O & STANDBY	
			-200	-300
SEA LEVEL	V_{REF}	---	20-80	10-90
3,000'	M.32	---	3,010-3,150	3,020-3,160
10,000'	250 KTS	60	9,975-10,195	10,005-10,225
20,000'	300 KTS	115	19,995-20,295	20,105-20,405
25,000'	M.80	130	24,950-25,470	25,155-25,675
30,000'	M.80	135	29,935-30,435	30,115-30,615
35,000'	M.80	145	34,975-35,465	35,155-35,645
40,000'	M.80	160	40,040-40,540	40,215-40,715

CHART 2 AIRSPEED TOLERANCES

AIRSPEED KNOTS	MAX. DIFFERENCE		
	CAPT & F/O	CAPT OR F/O & STANDBY	
		-200	-300
140	± 3	138-146	138.5-146.5 1
200	± 3	198.5-206.5	199-207
250	± 3	(35,000 & BELOW)	
		248-258	249-259
300	± 3	(35,000')	
		297-307	300-310
		(30,000 & BELOW)	
		298.5-308.5	300.5-310.5
MACH			
.40 - .60	± .010M	---	
.60 - .80	± .009M	---	
.80 & ABOVE	± .008M	---	

1 LANDING FLAPS

CHARTS

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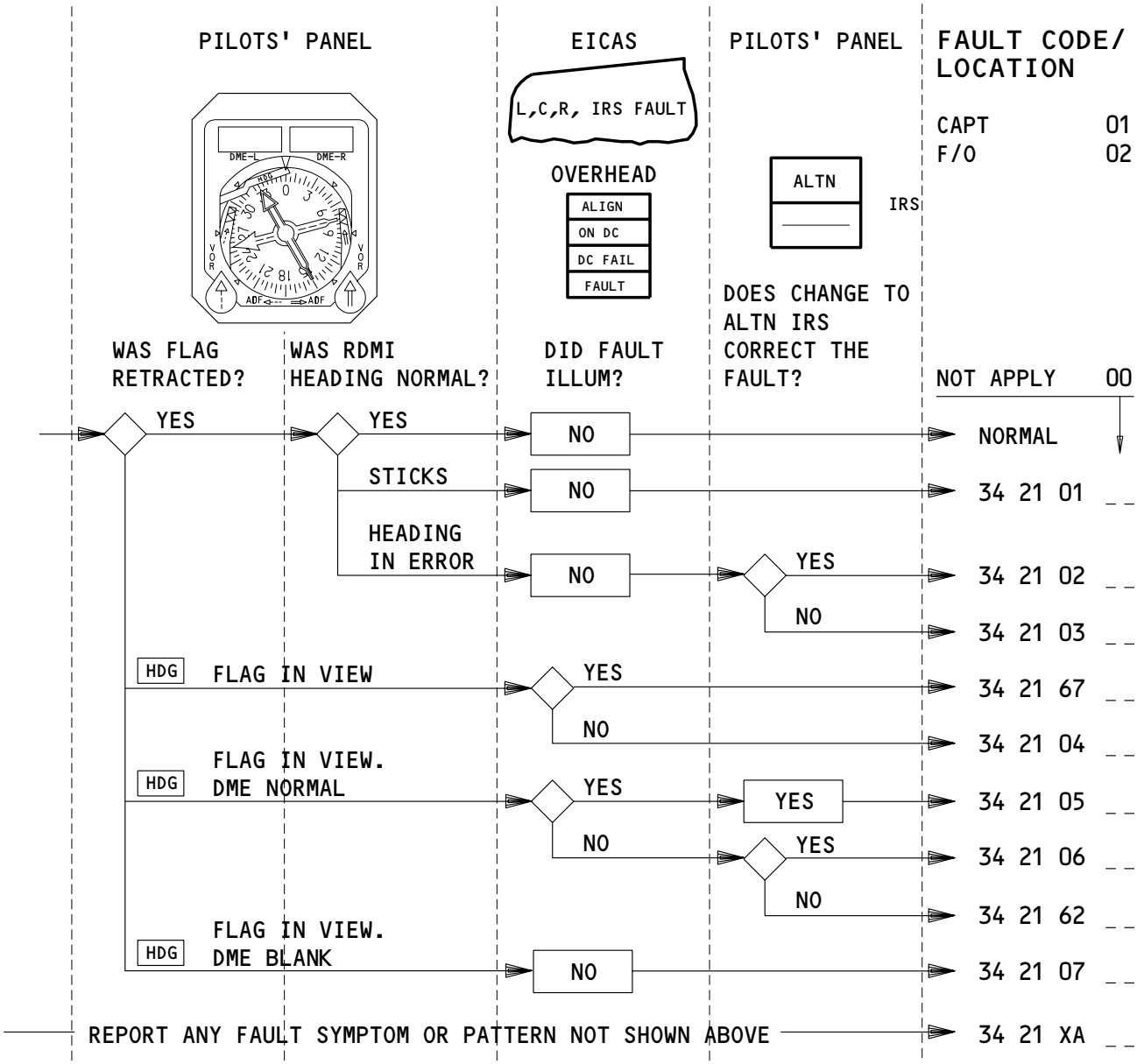

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

6D3	L IRS	11F1	(LEFT) IRS (L)
6D4	C IRS	11F21	(CENTER) IRS (C)
6D5	R IRS	11F22	(RIGHT) IRS (R)
11A6	RDMI L	11F25	(RIGHT) RDMI (R)

RDMI HEADING – FAULT CODES

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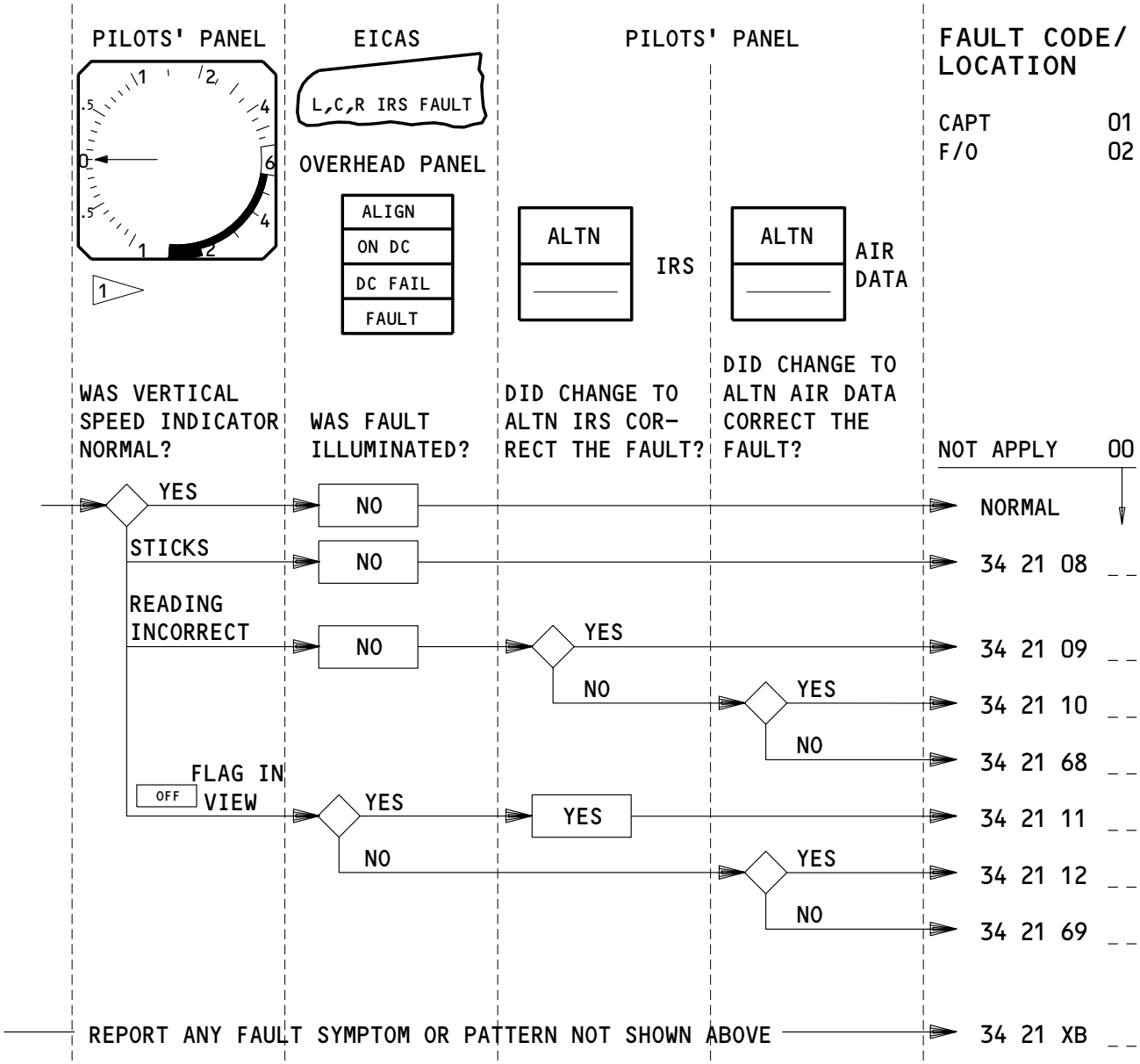

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

6D3	IRS L	11E26	VSI R
6D4	IRS C	11F1	(LEFT) IRS (L)
6D5	IRS R	11F21	(CENTER) IRS (C)
11E5	(LEFT) VSI (L)	11F22	(RIGHT) IRS (R)

VERTICAL SPEED INDICATOR – FAULT CODES

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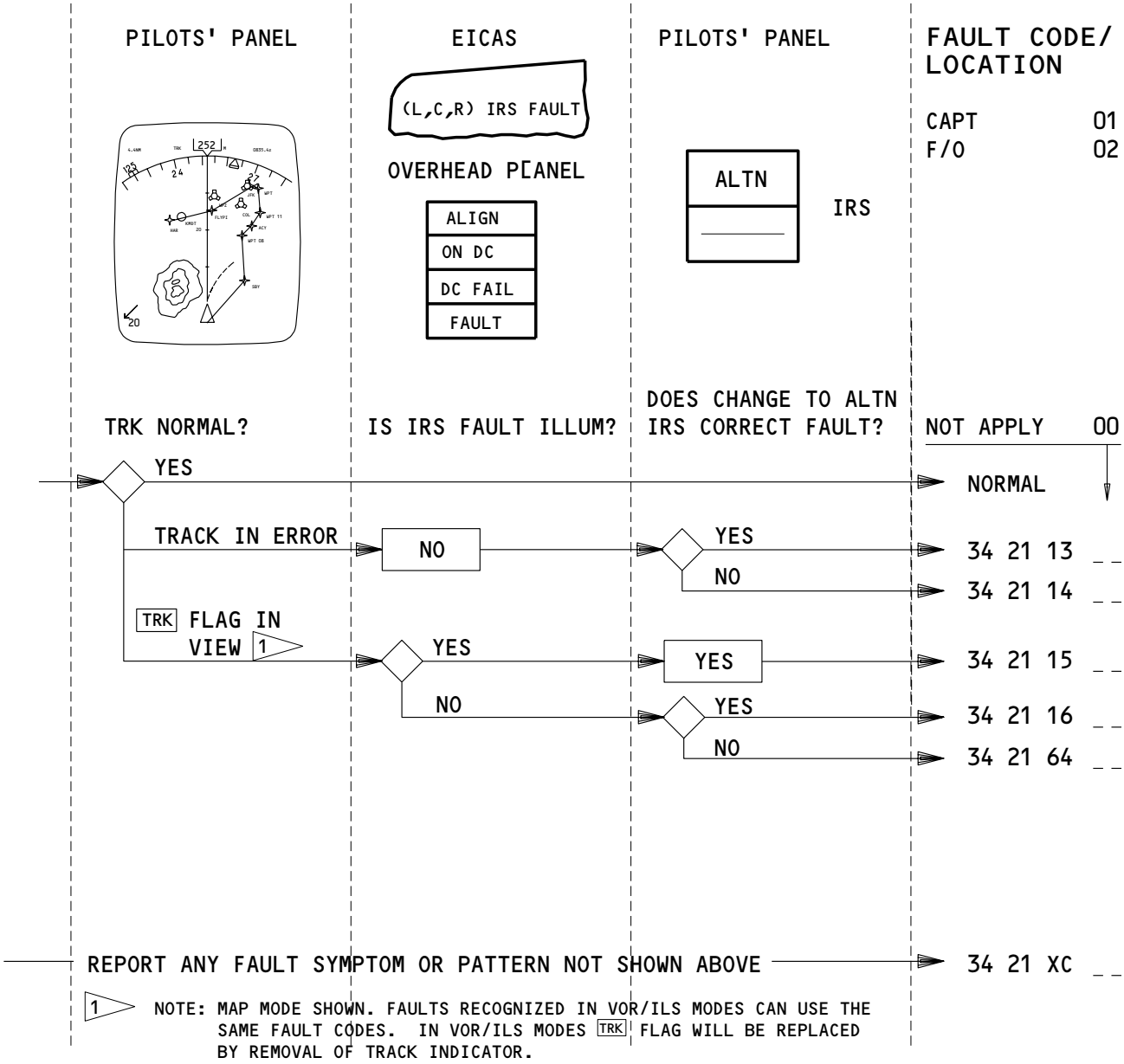

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

6D3	L IRS	11E6	(LEFT) HSI (L)	11F9	EFIS SYM GEN (C, CTR)
6D4	C IRS	11E25	(RIGHT) EFIS CONT PNL (R)	11F21	(CENTER) IRS (C)
6D5	R IRS	11E27	(RIGHT) HSI (R)	11F22	(RIGHT) IRS (R)
11A6	RDMI L	11F1	(LEFT) IRS (L)	11F24	(RIGHT) EFIS DSPL SW (R)
11A7	EFIS DSPL SW L	11F3	EFIS DSPL SW L	11F25	(RIGHT) RDMI (R)
11E4	(LEFT) EFIS CONT PNL (L)	11F8	EFIS SYM GEN L	11F29	(RIGHT) EFIS SYM GEN (R)

HSI TRACK – FAULT CODES

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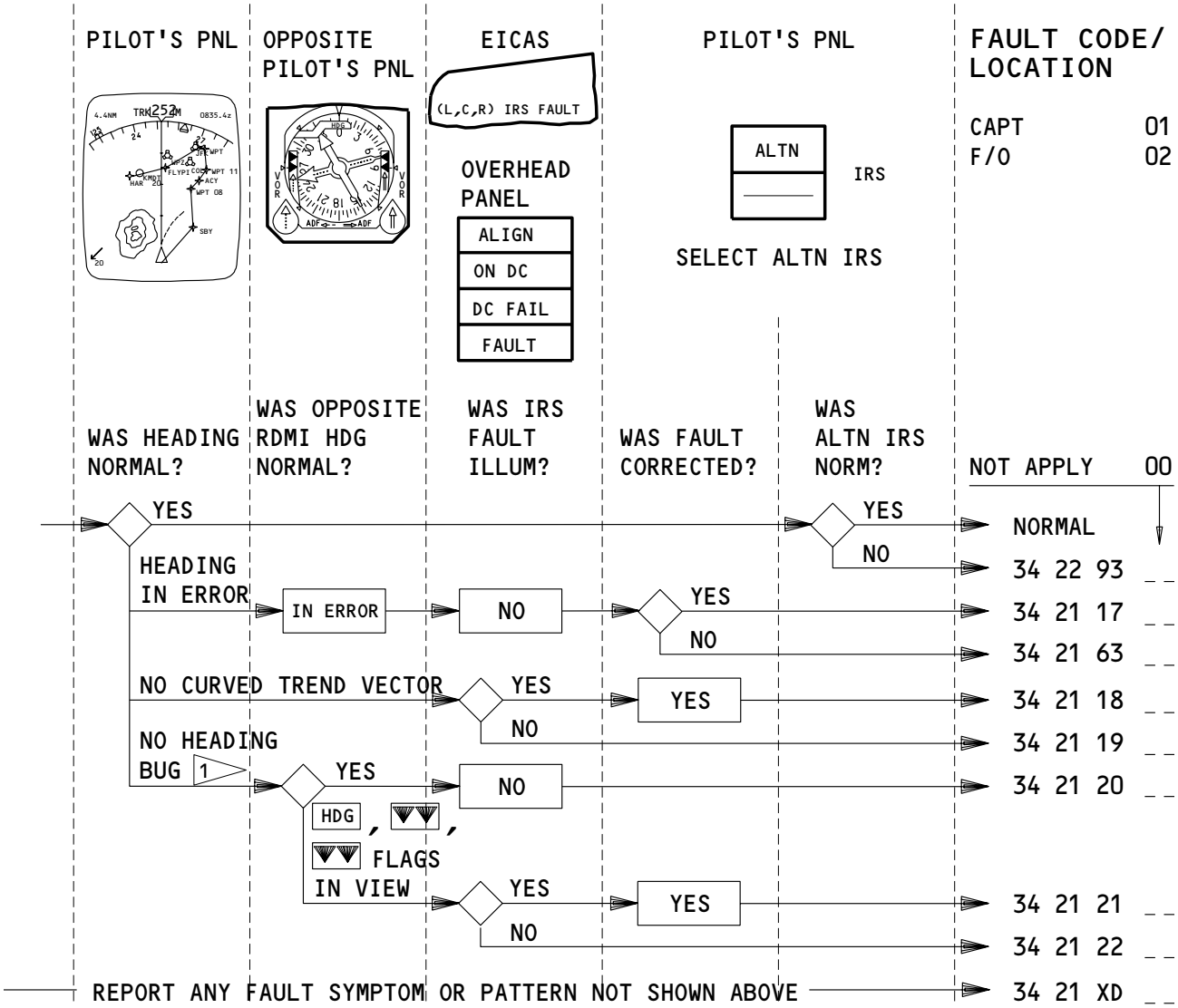

1 MAP MODE SHOWN. FAULTS RECOGNIZED IN VOR/ILS MODES CAN USE THE SAME FAULT CODES. IN VOR/ILS MODES "NO HEADING BUG" WILL BE REPLACED BY HDG FLAG.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

6D3	L IRS	11E6	(LEFT) HSI (L)	11F9	EFIS SYM GEN (C, CTR)
6D4	C IRS	11E25	(RIGHT) EFIS CONT PNL (R)	11F21	(CENTER) IRS (C)
6D5	R IRS	11E27	(RIGHT) HSI (R)	11F22	(RIGHT) IRS (R)
11A6	RDMI L	11F1	(LEFT) IRS (L)	11F24	(RIGHT) EFIS DSPL SW (R)
11A7	EFIS DSPL SW L	11F3	EFIS DSPL SW L	11F25	(RIGHT) RDMI (R)
11E4	(LEFT) EFIS CONT PNL (L)	11F8	EFIS SYM GEN L	11F29	(RIGHT) EFIS SYM GEN (R)

HSI HEADING, TREND VECTOR, & ALTN IRS – FAULT CODES

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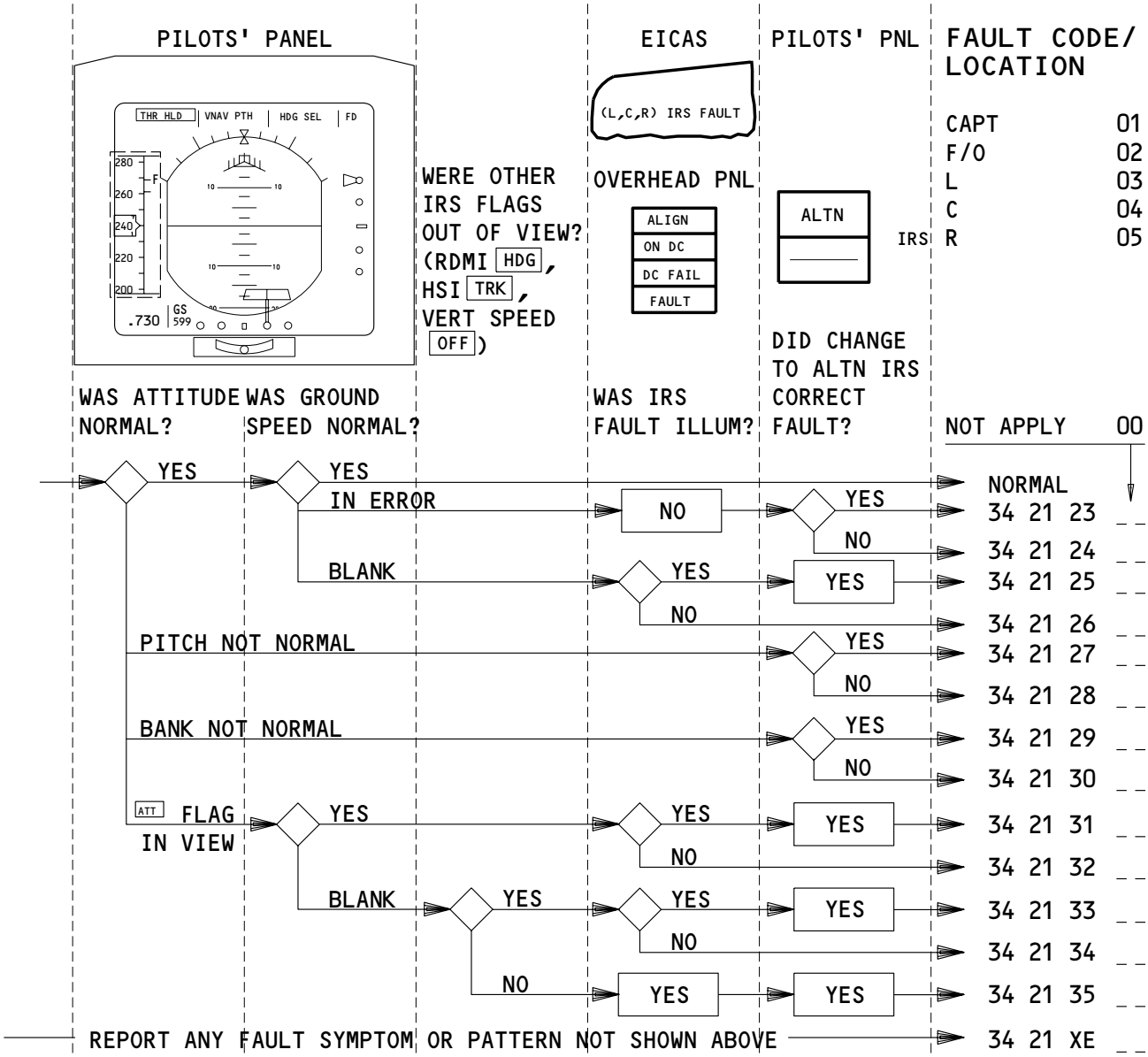

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

6D3	L IRS	11E6	(LEFT) HSI (L)	11F9	EFIS SYM GEN (C, CTR)
6D4	C IRS	11E25	(RIGHT) EFIS CONT PNL (R)	11F21	(CENTER) IRS (C)
6D5	R IRS	11E27	(RIGHT) HSI (R)	11F22	(RIGHT) IRS (R)
11A6	RDMI L	11F1	(LEFT) IRS (L)	11F24	(RIGHT) EFIS DSPL SW (R)
11A7	EFIS DSPL SW L	11F3	EFIS DSPL SW L	11F25	(RIGHT) RDMI (R)
11E4	(LEFT) EFIS CONT PNL (L)	11F8	EFIS SYM GEN L	11F29	(RIGHT) EFIS SYM GEN (R)

ADI ATTITUDE AND GROUND SPEED – FAULT CODES

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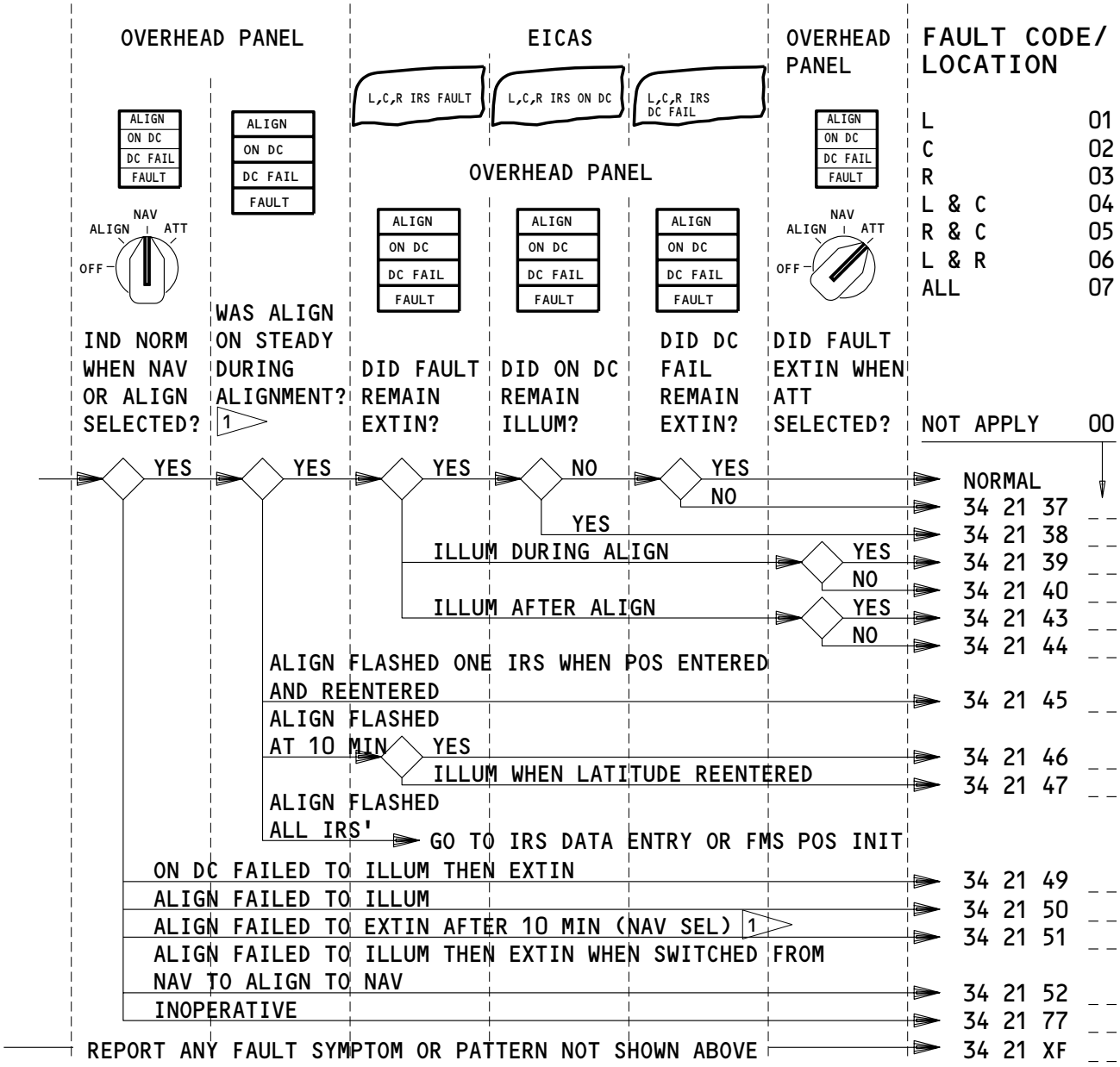

1 NOTE: THE FOLLOWING WILL CAUSE ALIGN TO FLASH:
1. ENTERED LONG FAILS TO MATCH LAST POS OF IRS.
2. ENTERED LAT FAILS TO MATCH IRS CALCULATED LAT.
3. FAILS TO INITIALIZE AFTER INITIALIZATION PROCEDURE COMPLETE.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

6D3	L IRS	6D5	R IRS	11F21	(CENTER) IRS (C)
6D4	C IRS	11F1	(LEFT) IRS (L)	11F22	(RIGHT) IRS (R)

IRS ALIGN FAULTS – FAULT CODES

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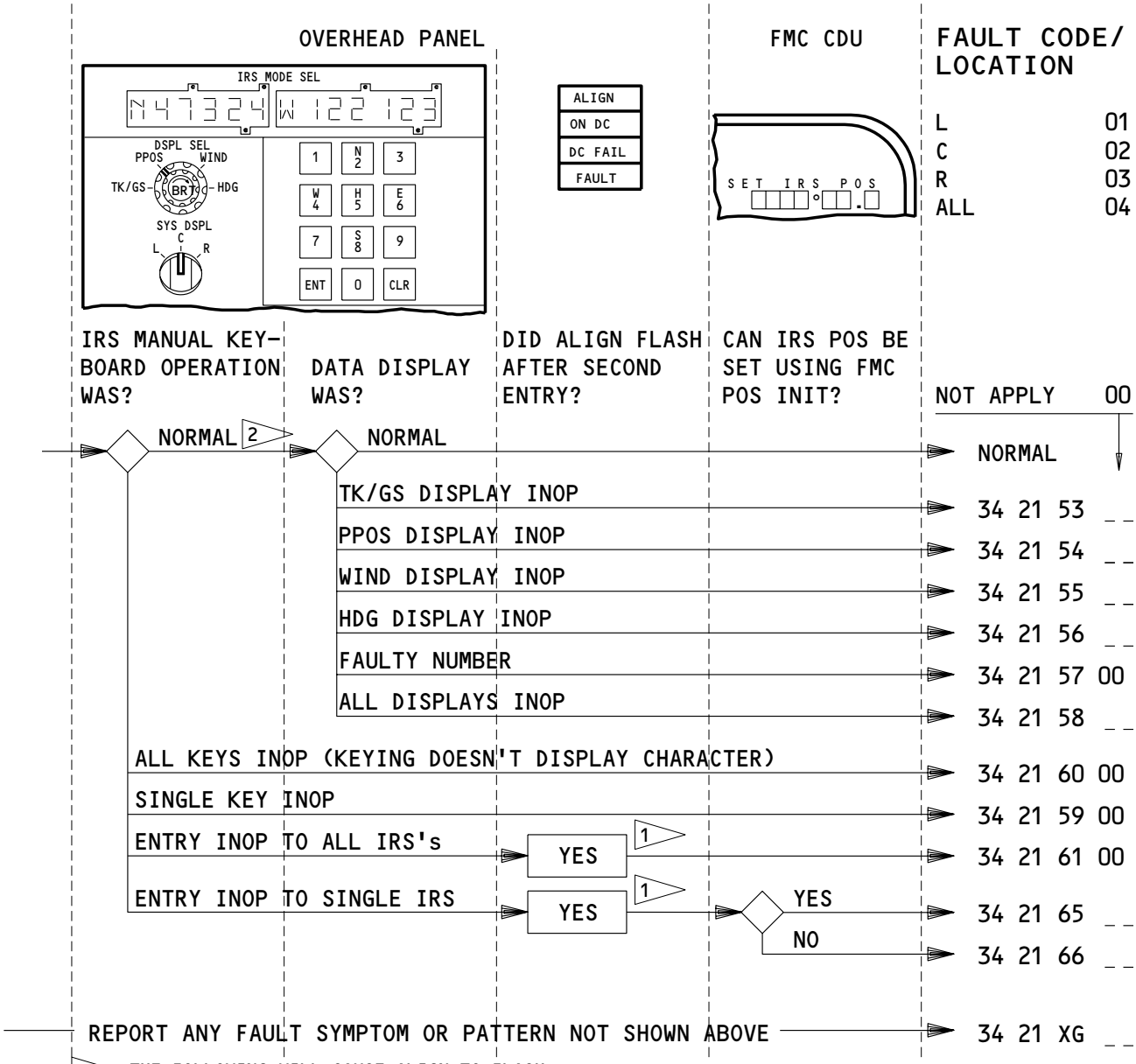

1 THE FOLLOWING WILL CAUSE ALIGN TO FLASH:
1. ENTERED LONG FAILS TO MATCH LAST POS OF IRS.
2. ENTERED LAT FAILS TO MATCH IRS CALCULATED LAT.
3. FAILS TO INITIALIZE AFTER INITIALIZATION PROCEDURE COMPLETE.

2 INSURE FAULT LGT IS EXTIN.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

6D3	L IRS	6D5	R IRS	11F21	(CENTER) IRS (C)
6D4	C IRS	11F1	(LEFT) IRS (L)	11F22	(RIGHT) IRS (R)

IRS DATA ENTRY AND DISPLAY - FAULT CODES

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RESIDUAL GROUNDSPEED ERROR CHECK

THE FMC-CDU POS REF PAGE 2/2 (4/4 PEGASUS EQUIPPED AIRPLANES) DISPLAYS RESIDUAL GROUNDSPEED FOR FMC AND EACH IRS AT THE END OF THE FLIGHT. USE THE FOLLOWING PROCEDURE TO DETERMINE EXCESSIVE RESIDUAL GROUNDSPEED ERROR.

NOTE: THE IRS'S AND FMC'S MUST NOT BE SHUTOFF PRIOR TO COMPLETING THIS PROCEDURE.

1 - SELECT POS REF PAGE 2/2 (4/4 PEGASUS EQUIPPED AIRPLANES) AND CHECK EACH IRS RESIDUAL GROUNDSPEED ERROR.

2 - IF THE IRS RESIDUAL GROUNDSPEED ERROR IS 21 KNOTS OR GREATER AFTER COMPLETION OF ANY ONE CHECK (FLIGHT) OR 15 KNOTS OR GREATER AFTER EACH OF TWO CONSECUTIVE CHECKS (FLIGHTS), MAINTENANCE ACTION IS REQUIRED.

RADIAL POSITION ERROR CHECK

THE FMC-CDU POS REF PAGE 2/2 (4/4 PEGASUS EQUIPPED AIRPLANES) DISPLAYS CURRENT POSITION FOR EACH IRS AND AN ACTUAL POSITION ERROR CHECK IS PERFORMED USING THE RTE 1 OR RTE 2 LEGS PAGE. THIS IS DONE BY ENTERING THE ACTUAL (PARKING) AND IRS POSITIONS AS WAYPOINTS AND COMPARING THEIR DIFFERENCE IN NAUTICAL MILES TO A DEVIATION CRITERIA. USE THE FOLLOWING PROCEDURE TO DETERMINE EXCESSIVE RADIAL POSITION ERROR.

NOTE: THE IRS'S AND FMC'S MUST NOT BE SHUTOFF PRIOR TO COMPLETING THIS PROCEDURE. IF IRSs HAVE BEEN SHUTOFF, USE "INERTIAL NAVIGATION SYSTEMS" DATA RECORDED BY FLIGHT CREW IN AIRCRAFT LOGBOOK.

1 - SELECT THE POS REF 2/2 (4/4 PEGASUS EQUIPPED AIRPLANES) PAGE AND RECORD THE DISPLAYED LATITUDE AND LONGITUDE FOR EACH IRS.

2 - SELECT THE RTE 1 OR RTE 2 LEGS PAGE AND ENTER ACTUAL LATITUDE AND LONGITUDE (GATE, RAMP, ETC) AS A WAYPOINT. (SEE AVERAGE GATE LATITUDE/LONGITUDE COORDINATES PAGE).

3 - ENTER DISPLAYED LATITUDE AND LONGITUDE OF IRS AS NEXT WAYPOINT ON RTE 1 OR RTE 2 LEGS PAGE. ENTER MANUALLY RECORDED DATA FROM (1) OR LINE SELECT FROM POS REF PAGE.

4 - RADIAL POSITION ERROR IS THE DISTANCE BETWEEN THE TWO ENTERED WAYPOINTS OR THE COMPUTED LEG LENGTH.

5 - COMPARE THE DISTANCE ALONG WITH THE TIME IN NAV MODE TO THE ACCEPT/REJECT LIMITS ON THE FOLLOWING IRS PERFORMANCE CRITERIA CHART. USE "USE AFTER RNP-10 EFFECTIVE DATE" CHART AFTER RNP-10 EFFECTIVE DATE.

6 - IF THE IRS RADIAL POSITION ERROR FALLS UPON THE SHADED AREA FOR TWO CONSECUTIVE FLIGHTS OR ABOVE THE SHADED AREA FOR ONE FLIGHT, MAINTENANCE ACTION IS REQUIRED.

IRS ACCURACY CHECKS

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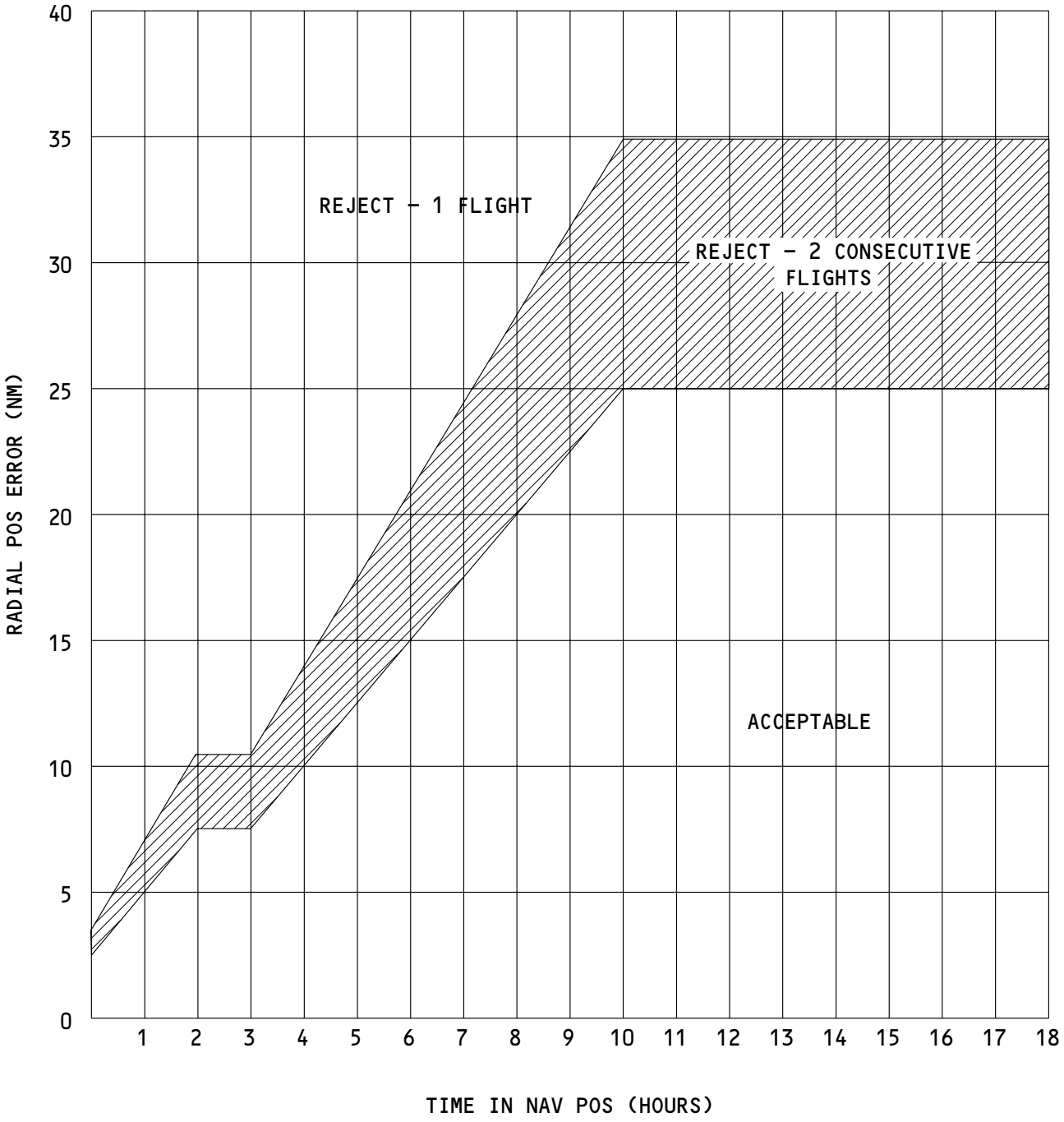
IRS PERFORMANCE CRITERIA CHART



IRS ACCURACY CHARTS

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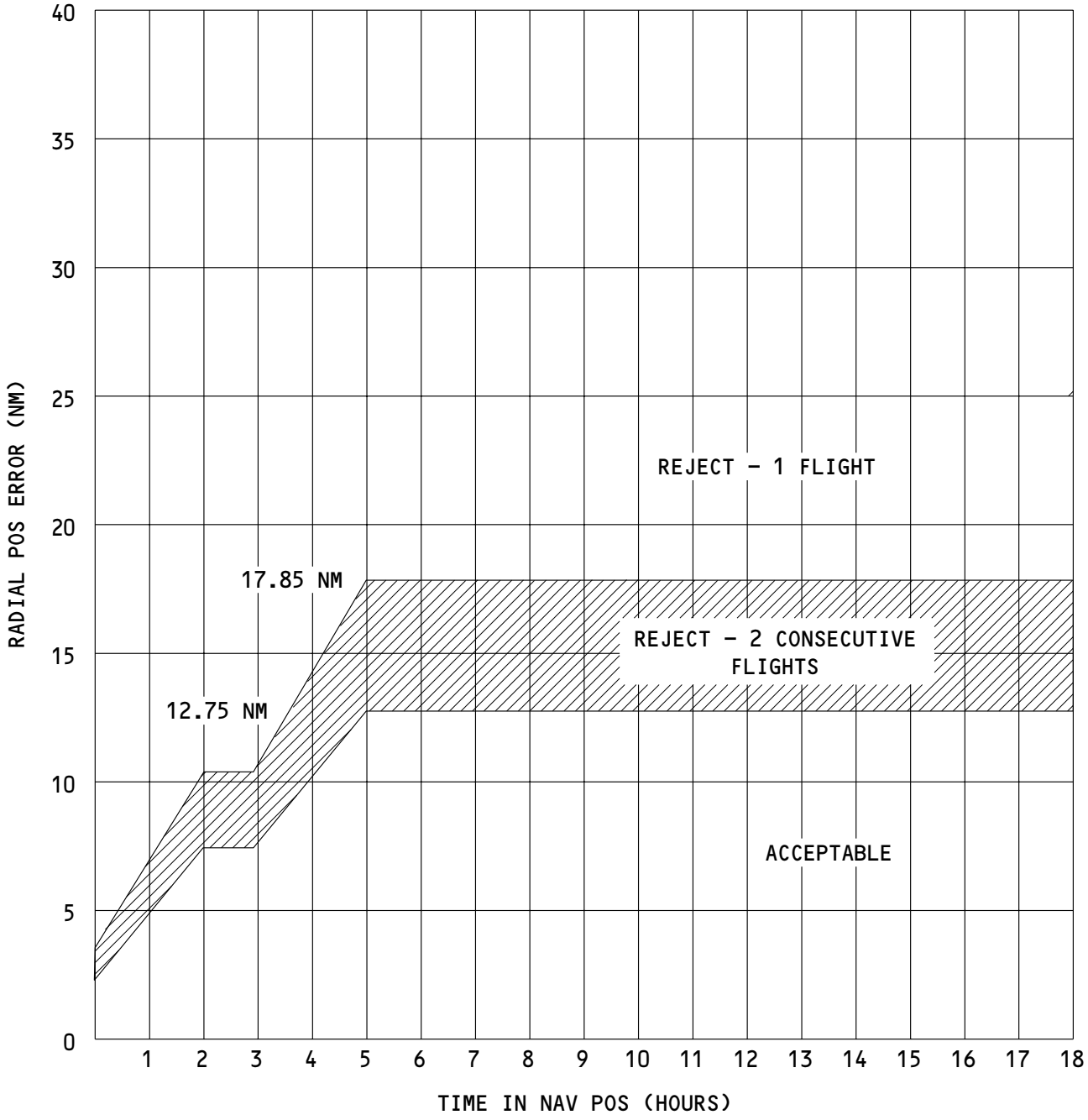
IRS PERFORMANCE CRITERIA CHART



IRS ACCURACY CHECKS

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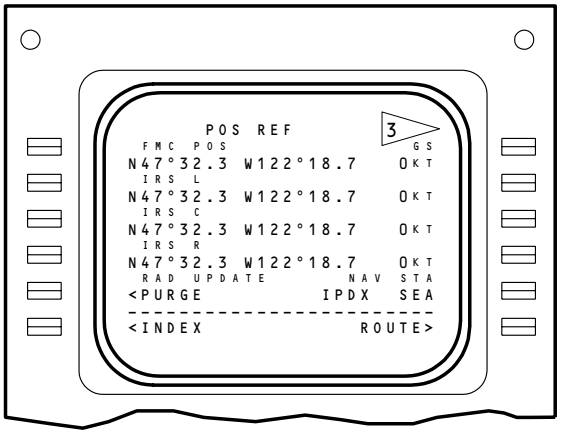
FMC-CDU



FAULT CODE/ LOCATION

L	01
C	02
R	03

WAS IRS RESIDUAL GROUNDSPEED ERROR OR RADIAL POSITION ERROR EXCESSIVE? 1

NOT APPLY 00

NO → NORMAL

RESIDUAL GROUND SPEED ERROR EXCESSIVE 2 → 34 21 59 _ _

RADIAL POSITION ERROR EXCESSIVE → 34 21 57 _ _

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 21 XF _ _

1 SEE IRS ACCURACY CHECKS FOR RESIDUAL GROUNDSPEED/RADIAL POSITION ERROR LIMITS.

2 FMC "FREEZE" CAN CAUSE FMC-CDU TO DISPLAY EXCESSIVE GROUND SPEED. VERIFY RESIDUAL GROUND SPEED USING IRMP.

3 AS INSTALLED

APPLICABLE CIRCUIT BREAKERS

NONE

IRS ACCURACY - FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

M12989

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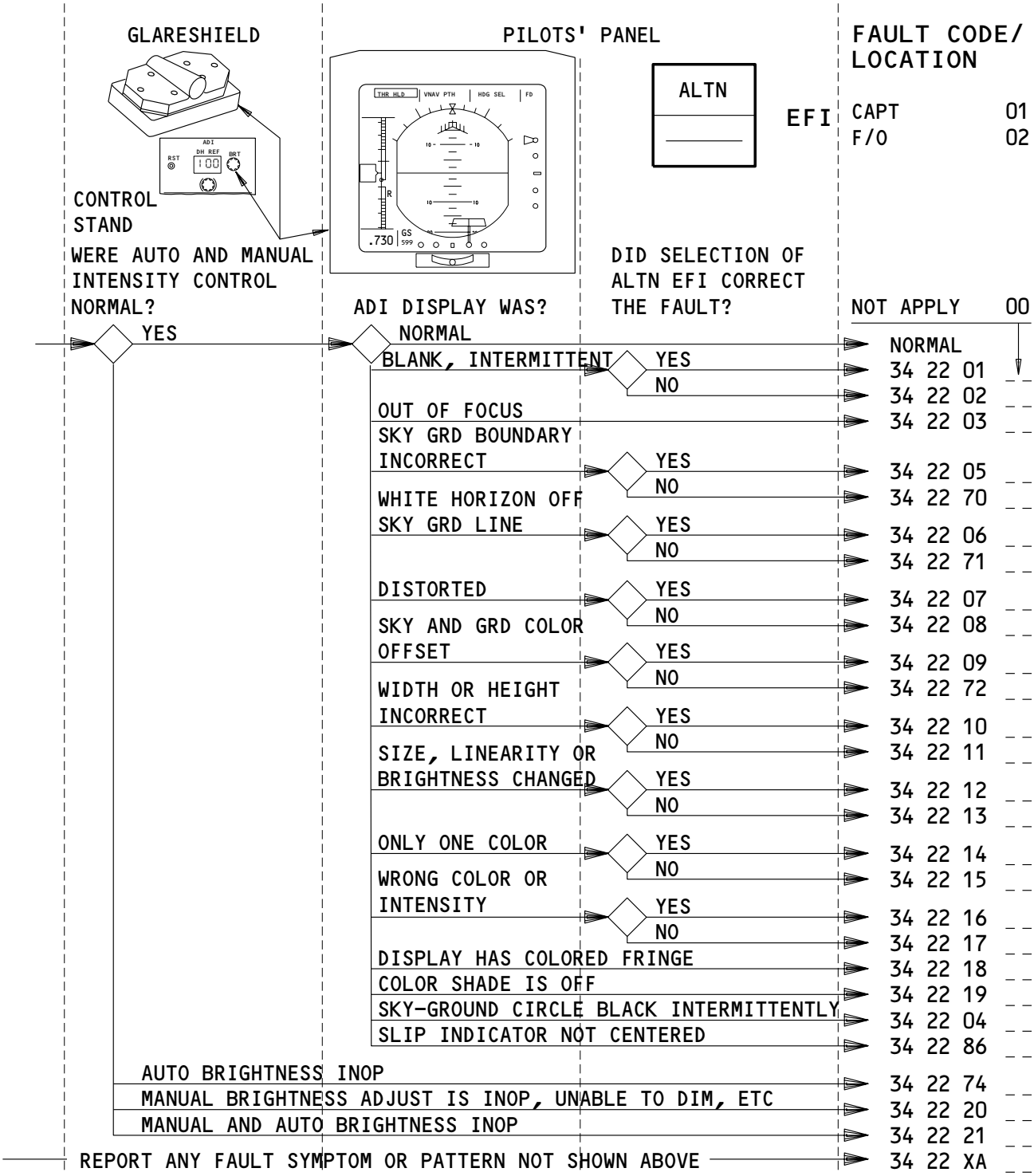

ADI DISPLAY – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

295189

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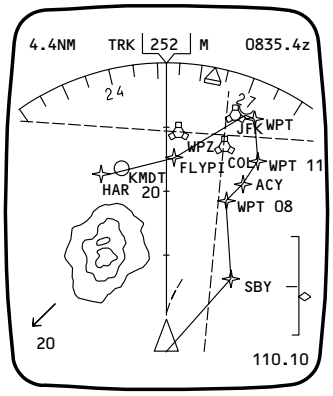
PILOTS' PANEL



ALTN

EFI

FAULT CODE/ LOCATION

CAPT	01
F/O	02

WAS HSI DISPLAY NORMAL?

DID SELECTION OF ALTN EFI CORRECT THE FAULT?

		NOT APPLY	00
YES		NORMAL	
BLANK, INTERMITTENT	YES	34 22 22	_ _
	NO	34 22 23	_ _
OUT OF FOCUS		34 22 24	_ _
DISTORTED	YES	34 22 26	_ _
	NO	34 22 27	_ _
WIDTH OR HEIGHT INCORRECT	YES	34 22 28	_ _
SIZE CHANGED, LINEARITY	NO	34 22 29	_ _
OR BRIGHTNESS ALSO CHANGED	YES	34 22 30	_ _
	NO	34 22 31	_ _
DISPLAY IS ONLY ONE COLOR	YES	34 22 32	_ _
DISPLAY IS WRONG COLOR OR	NO	34 22 33	_ _
INTENSITY	YES	34 22 34	_ _
	NO	34 22 35	_ _
DISPLAY HAS COLORED FRINGE		34 22 36	_ _
COLOR SHADE IS OFF		34 22 37	_ _
AUTO BRIGHTNESS INOP.		34 22 77	_ _
MANUAL BRIGHTNESS ADJUST IS INOP.		34 22 38	_ _
MANUAL AND AUTO BRIGHTNESS INOP.		34 22 39	_ _
REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE		34 22 XB	_ _

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A7	EFIS DSPL SW L	11F8	EFIS SYM GEN (L)
11E6	(LEFT) HSI (L)	11F9	EFIS SYM GEN (CTR, C)
11E27	(RIGHT) HSI (R)	11F24	(RIGHT) EFIS DSPL SW (R)
11F3	EFIS DSPL SW (L)	11F29	(RIGHT) EFIS SYM GEN (R)

HSI DISPLAY – FAULT CODES

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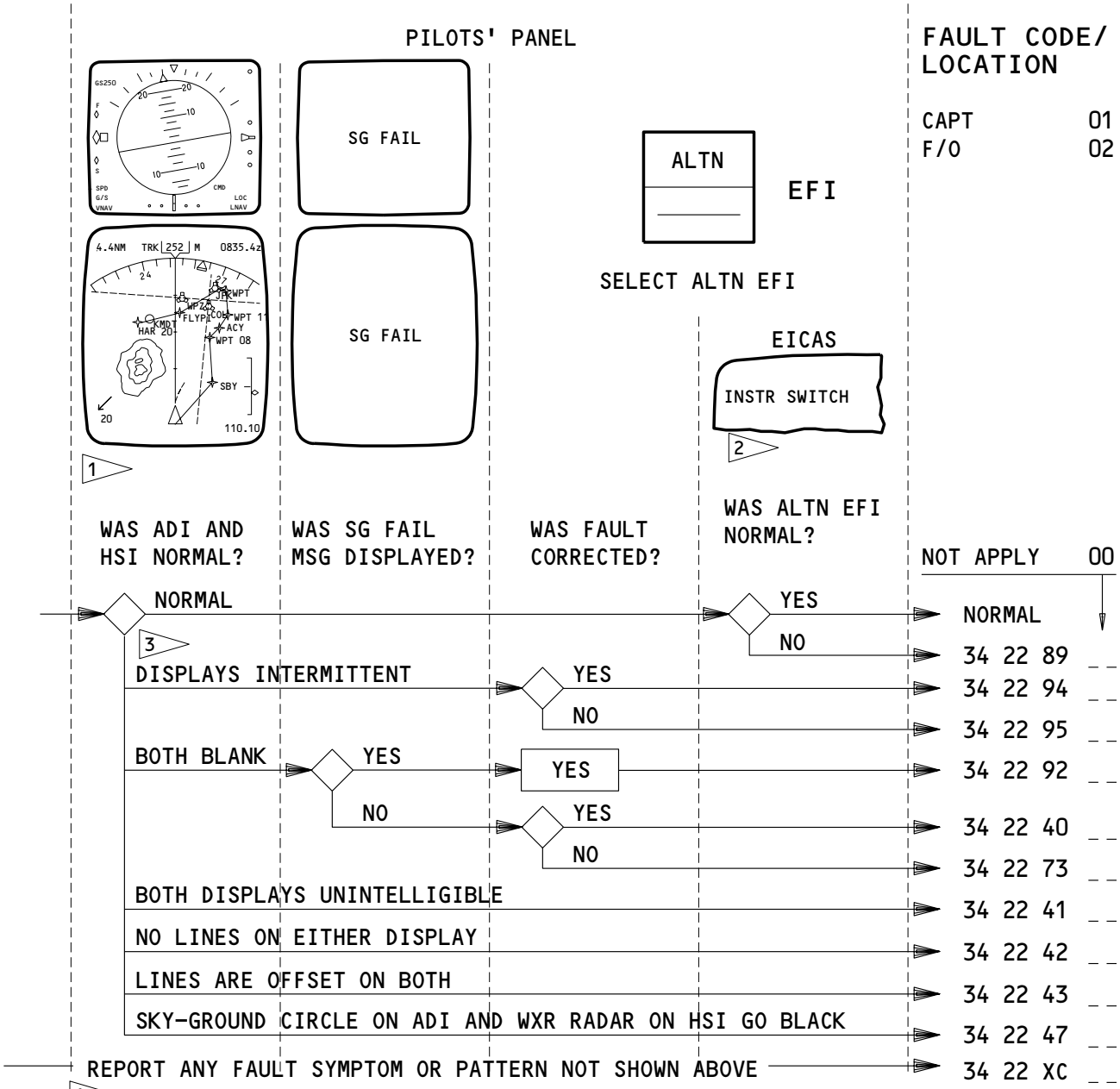

1 LOSS OF ADI & HSI DISPLAYS MAY BE CAUSED BY MOVING AIRPLANE DURING IRS ALIGNMENT.

2 EICAS MSG DISPLAYS IF BOTH CAPT & F/O EFI SELECTED TO ALTN.

3 IF GEN OFF LGT IS INTERMITTENT, SEE ELECTRICAL CHAPTER "GENERATOR AND BUS TIE CONTROL" FAULT CODES.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E3	(LEFT) ADI (L)	11E27	(RIGHT) HSI (R)	11F9	EFIS SYM GEN (C, CTR)
11E6	(LEFT) HSI (L)	11F3	(LEFT) EFIS DISP SW	11F10	EFIS INSTR CMPTR
11E24	(RIGHT) ADI (R)	11F8	EFIS SYM GEN L	11F24	(RIGHT) EFIS DISP SW (R)
				11F29	(RIGHT) EFIS SYM GEN (R)

ALTN EFI, ADI AND HSI - FAULT CODES

EFFECTIVITY

ALL

E21032

34-FAULT CODE DIAGRAM

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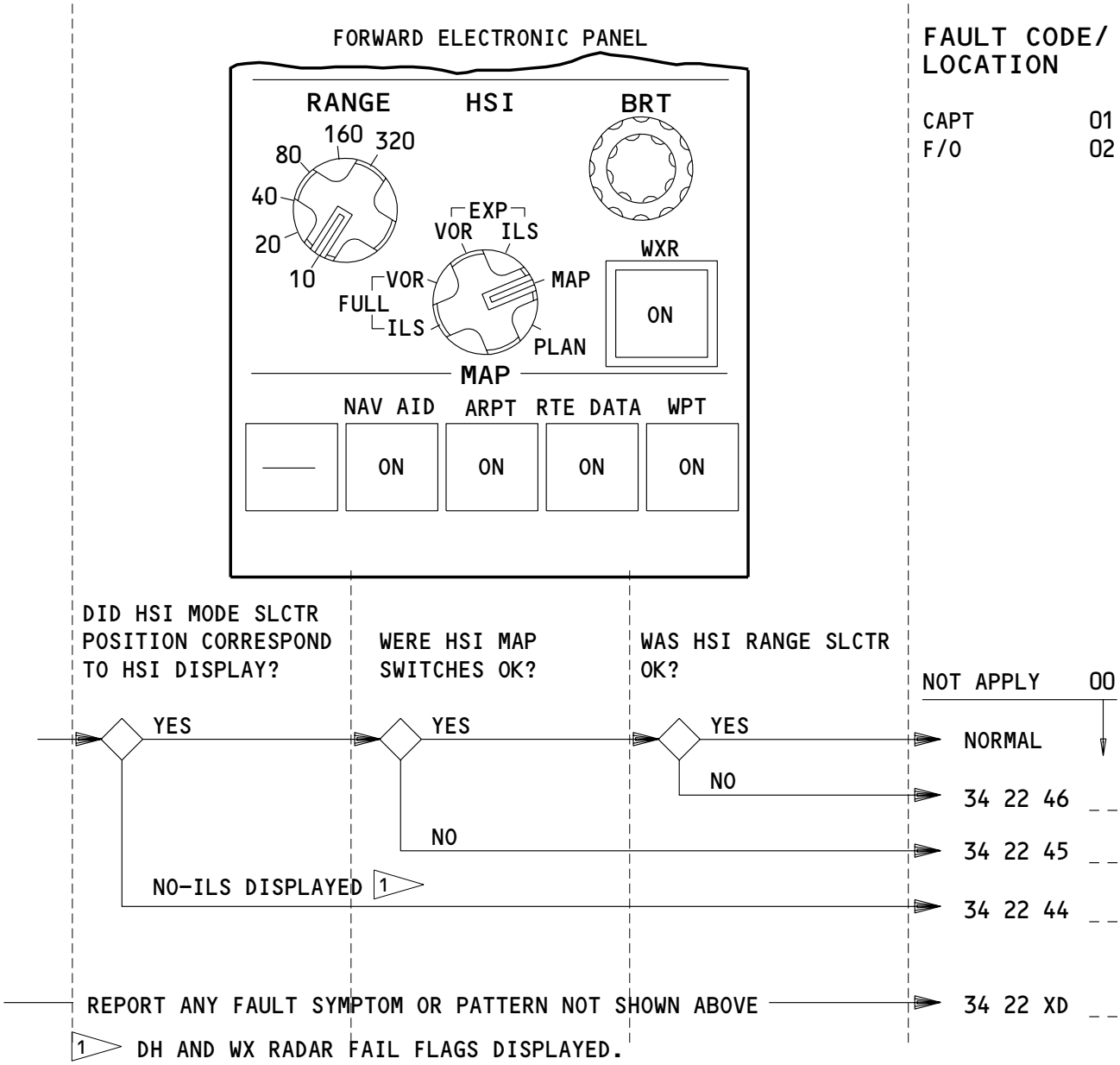

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E4	(LEFT) EFIS CONT PNL (L)	11E25	(RIGHT) EFIS CONT PNL (R)
11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)

FMC-HSI RANGE, MAP AND MODE SELECT - FAULT CODES

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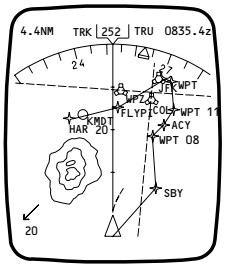
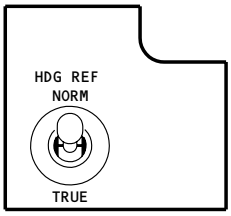
PILOTS' PANEL

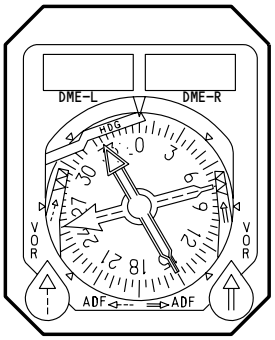
FAULT CODE/ LOCATION

CAPT	01
F/O	02
CAPT & F/O	03





2



1

WITH SW PLACED IN TRUE, WERE INSTR CHANGES NORM?

1

WITH AIRPLANE ABOVE 73°N OR BELOW 60°S WERE INSTR CHANGES NORM?

NOT APPLY 00

YES → NORMAL

YES → NO → 34 22 87 _ _

NO → 34 22 88 _ _

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 22 XG _ _

1 WITH SW IN TRUE:
- HSI & RDMI TRUE HEADING DISPLAYED.
- IF AFDS IS IN HDG SEL, WILL CHANGE TO HDG HOLD.

WITH SW IN NORM AND ABOVE 73°N OR BELOW 60°S:
- SAME AS ABOVE EXCEPT RDMI HDG FLAG IN VIEW.

2 AS INSTALLED

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

6D3	L IRS	11E6	(LEFT) HSI (L)	11F21	(CENTER) IRS (C)
6D4	C IRS	11E25	(RIGHT) EFIS CONT PNL (R)	11F22	(RIGHT) IRS (R)
6D5	R IRS	11E27	(RIGHT) HSI (R)	11F24	(RIGHT) EFIS DSPL SW (R)
11A1	VOR/MKR L	11E33	(RIGHT) VOR (R)	11F25	(RIGHT) RDMI (R)
11A6	RDMI L	11F1	(LEFT) IRS (L)	11F29	(RIGHT) EFIS SYM GEN (R)
11A7	EFIS DSPL SW L	11F8	EFIS SYM GEN L		
11E4	(LEFT) EFIS CONT PNL (L)	11F9	EFIS SYM GEN (C, CTR)		

HEADING REFERENCE – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

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NOT USED
Figure 19

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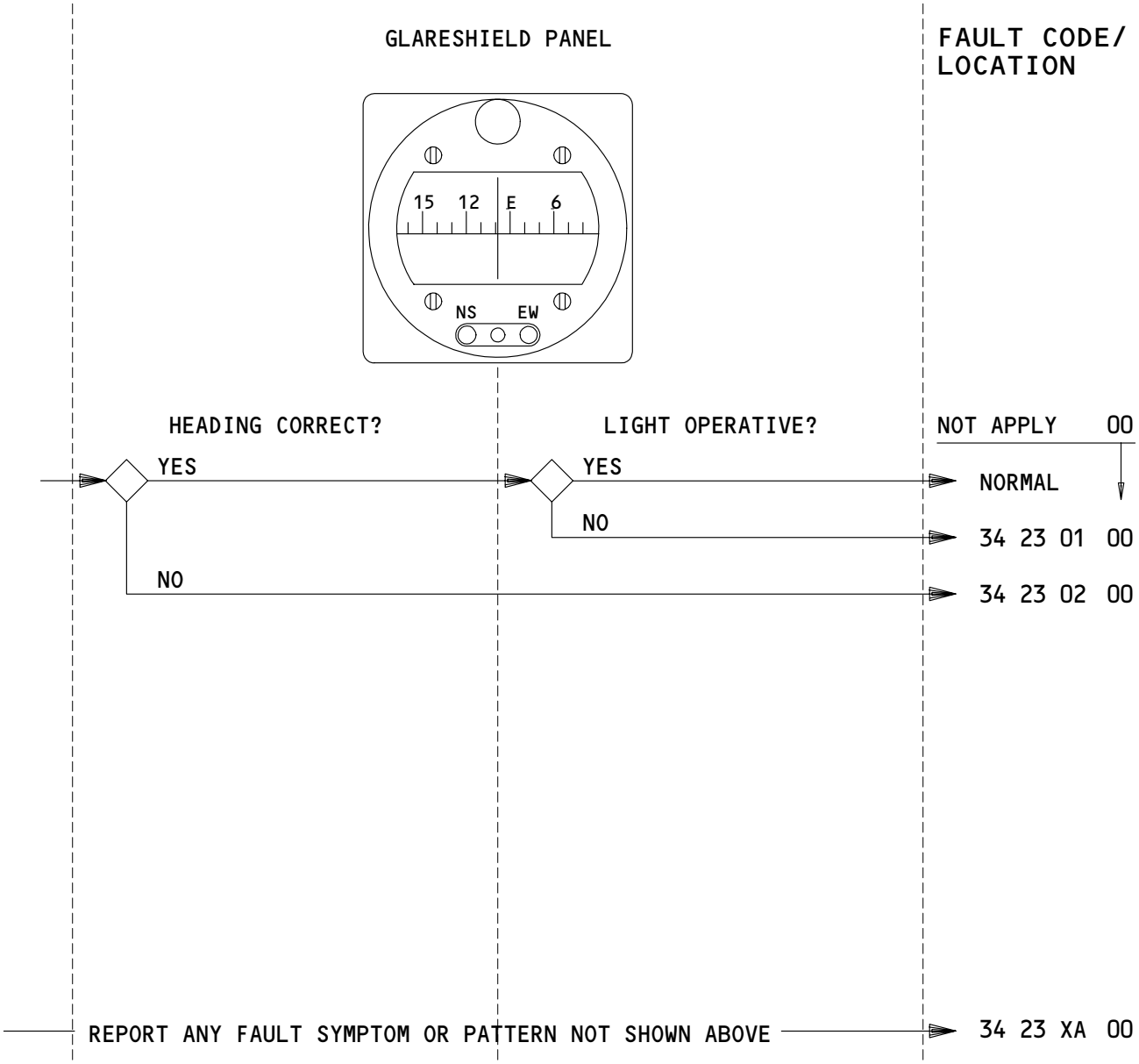

APPLICABLE CIRCUIT BREAKERS

11B7 LIGHTS STBY INSTR

STANDBY COMPASS – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

34623

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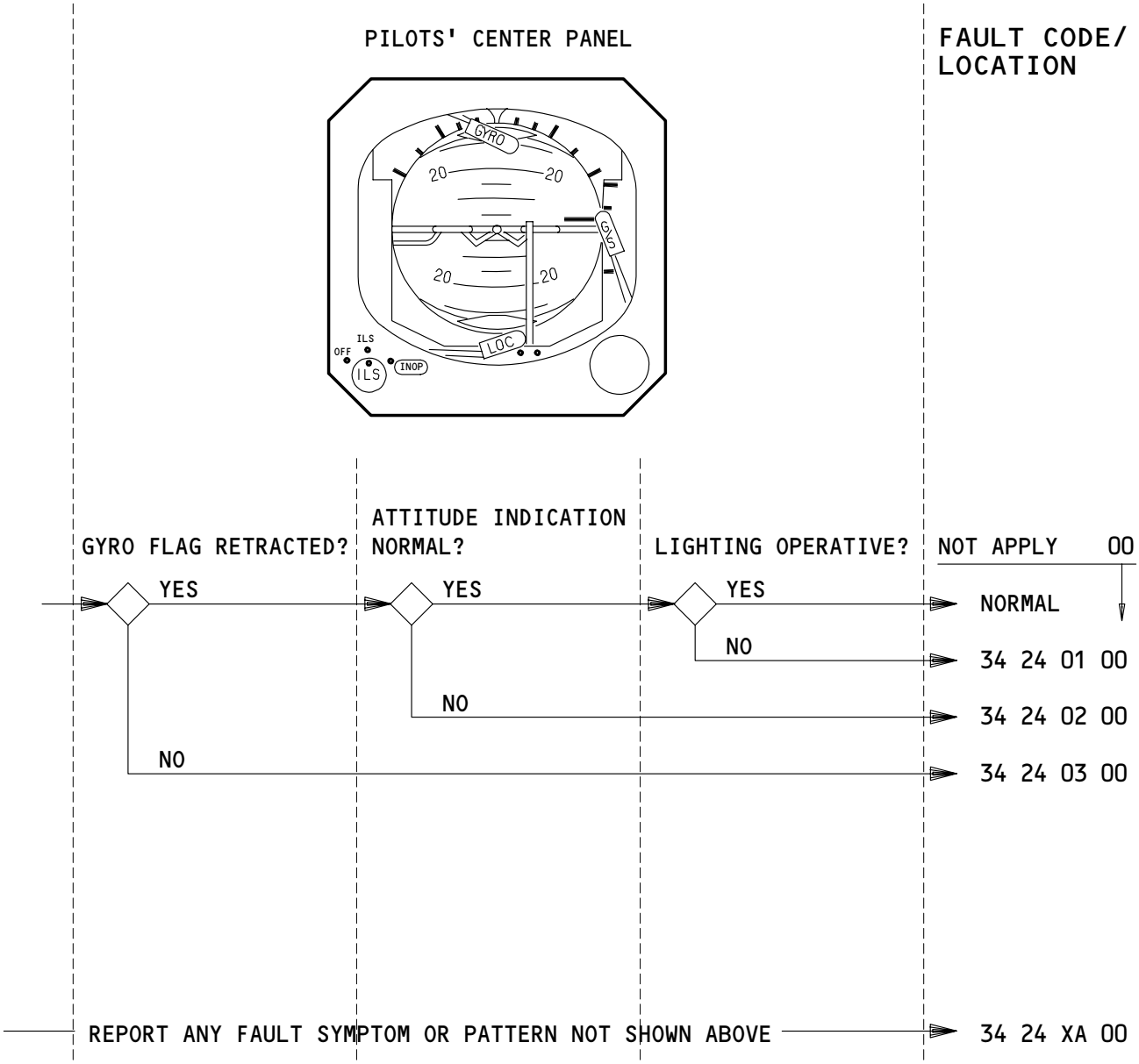

APPLICABLE CIRCUIT BREAKERS

11A5	STBY ATT IND
11B7	LIGHTS STBY INSTR

STANDBY ATTITUDE INDICATOR – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

174589

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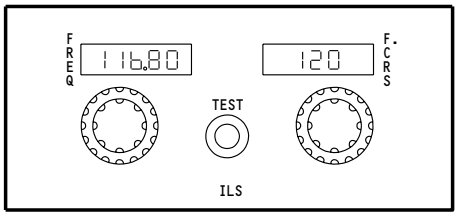
AFT ELECTRONIC PANEL



FAULT CODE/ LOCATION

CAPT ADI & HSI	01
F/O ADI & HSI	02
STBY ATT IND	03

WAS TEST OK?

YES → NORMAL

NOT APPLY 00

NO [1] → 34 31 01 _ _

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 31 XA _ _

[1] BEFORE REPORTING MISSING GLIDESLOPE POINTER, ENSURE ILS FRONT CRS AND AIRPLANE HDG ARE SAME DURING TEST.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A2	ILS (C, CTR)
11A9	STBY ILS IND
11E10	(LEFT) ILS (L)
11E31	(RIGHT) ILS (R)

ILS TEST – FAULT CODES

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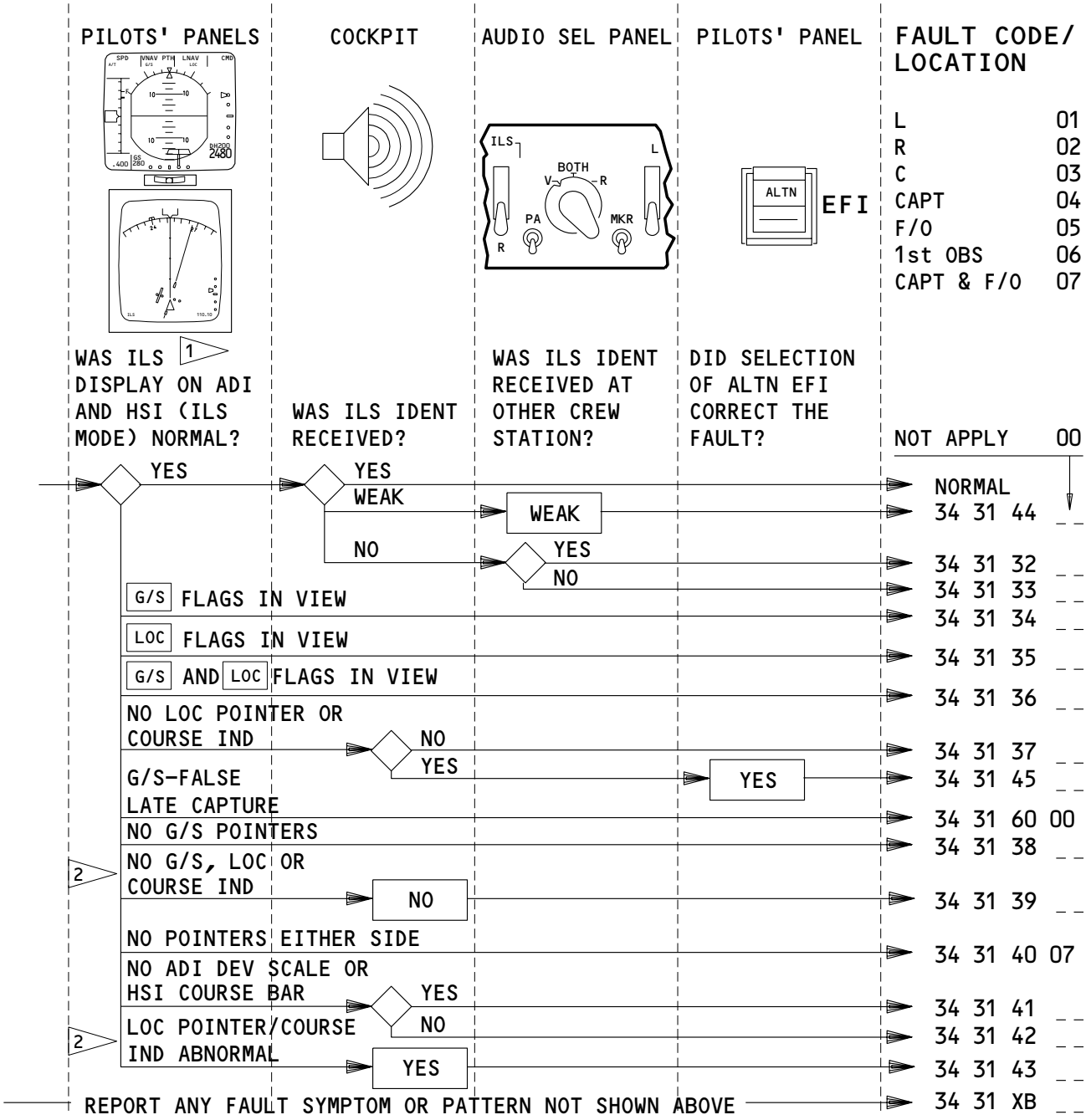

1 IF 2 DOT LOC SCALE IS DISPLAYED WHEN IN 4 DOT RANGE, SYSTEM MAY HAVE BEEN SHUTDOWN IN 2 DOT RANGE. SYSTEM WILL RESET WHEN WITHIN RADIO ALT RANGE. ALTN EFI WILL DISPLAY C ILS.

2 ABNORMAL LOC DEVIATION MAY BE CAUSED BY FREQ/BEARING INCONSISTANCY OF 3 ILS'S, OR WX RADAR INTERFERENCE IF ILS IS TUNED TO FREQ NOT IN USE OR ILS SIGNAL GOES OFF THE AIR. IF FREQ ABNORMAL SEE SEE "HSI FAULTS IN ILS MODE" FAULT CODES.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A2	ILS (C, CTR)	11E10	(LEFT) ILS (L)	11E31	(RIGHT) ILS (R)

ILS ADI/HSI DISPLAYS AND IDENT - FAULT CODES

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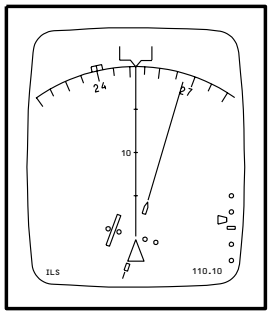
PILOTS' PANELS



FAULT CODE/ LOCATION

CAPT	01
F/O	02

ILS MODE HSI DISPLAY NORMAL?

NOT APPLY 00

YES → NORMAL

DISPLAYED ILS FREQ DISAGREES WITH FREQ IND → 34 31 47 _ _

SELECTED CRS POINTER DISAGREES WITH CRS IND → 34 31 48 _ _

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 31 XC _ _

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E10	(LEFT) ILS (L)
11E31	(RIGHT) ILS (R)

HSI FAULTS IN ILS MODE – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

174753

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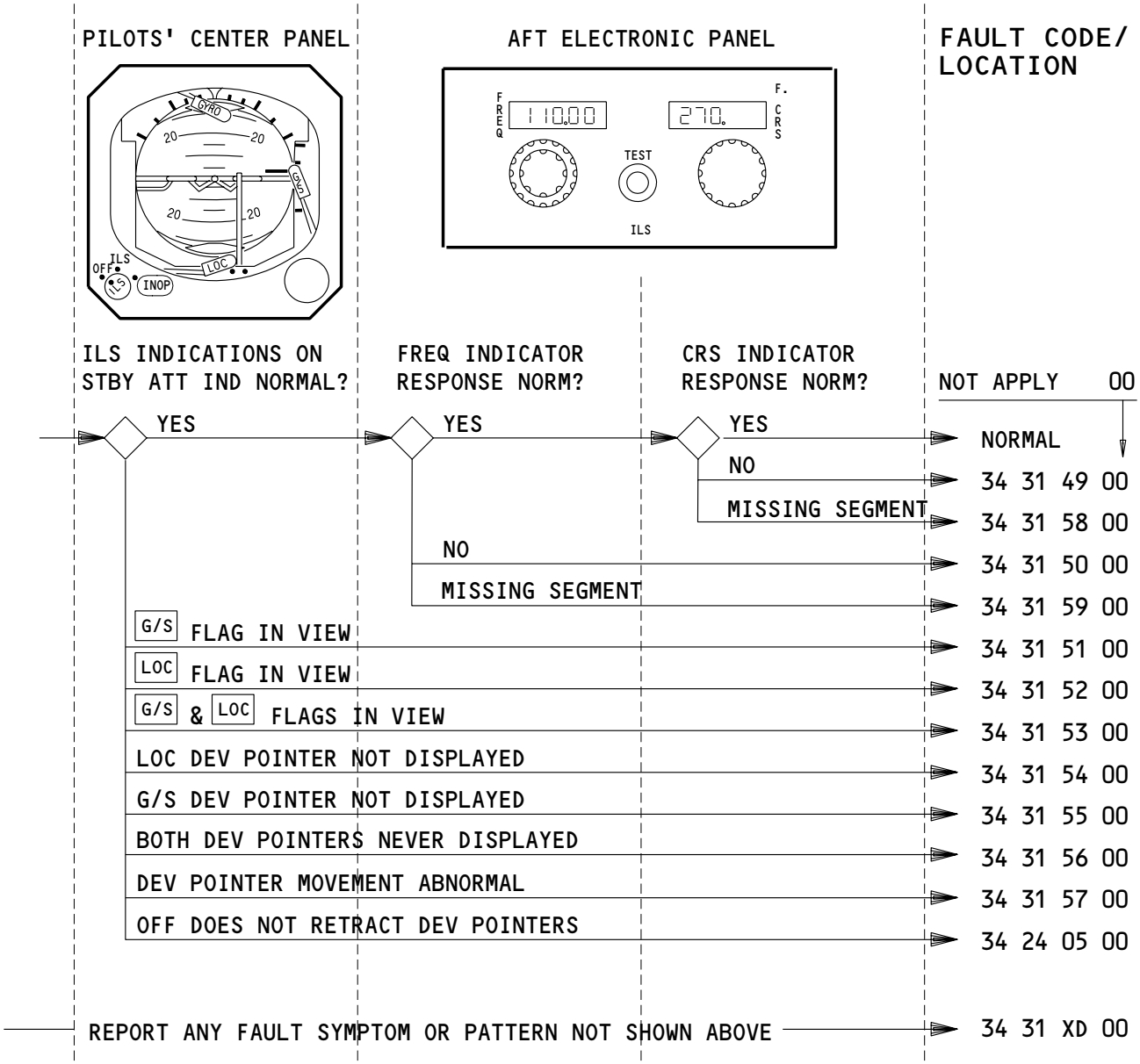

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A2	ILS (C, CTR)
11A9	STBY ILS (IND)

ILS STANDBY ATTITUDE DISPLAY AND ILS CONTROLS – FAULT CODES

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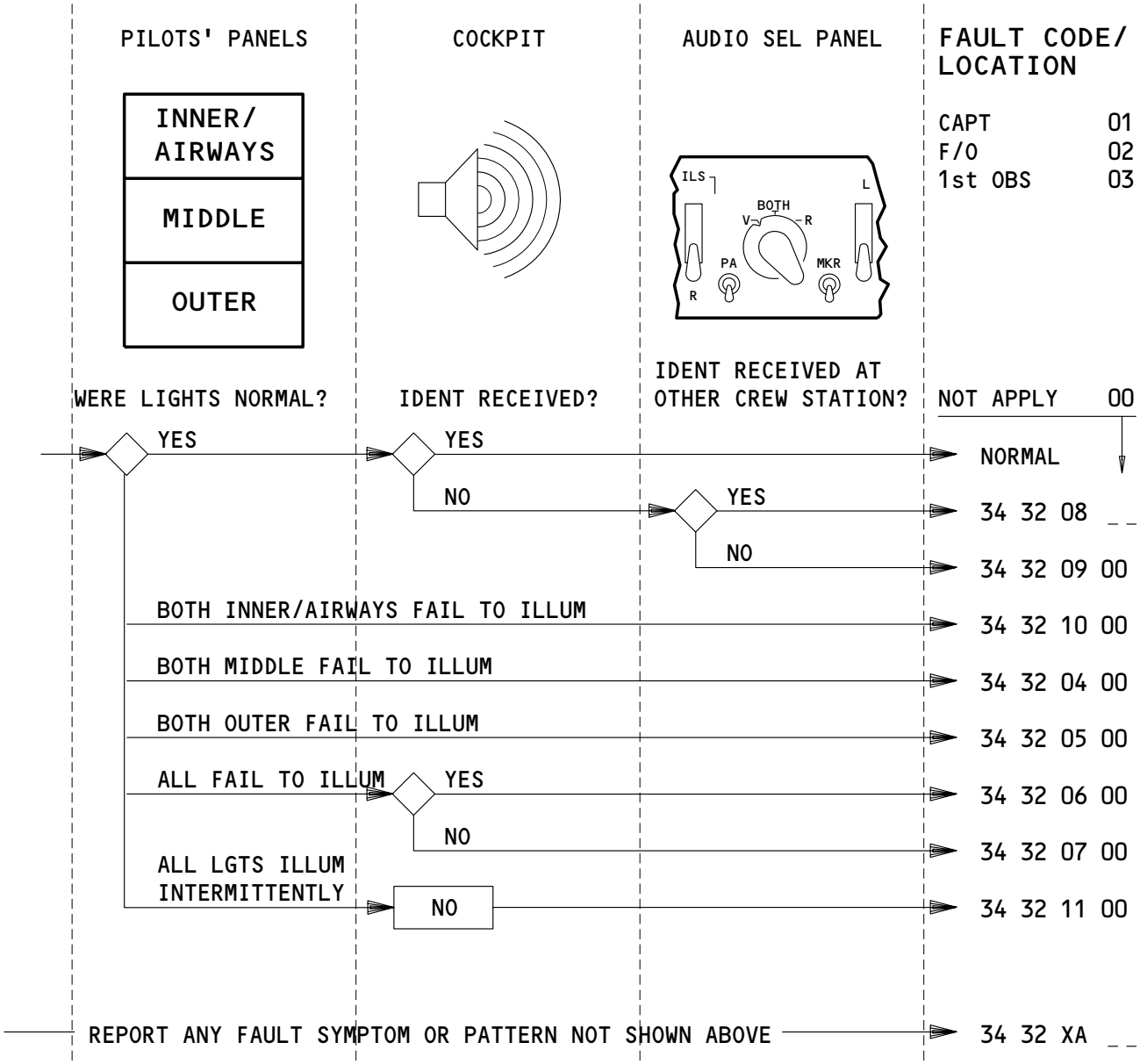

APPLICABLE CIRCUIT BREAKERS

11A1	VOR/MKR L

MARKER BEACON – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

615241

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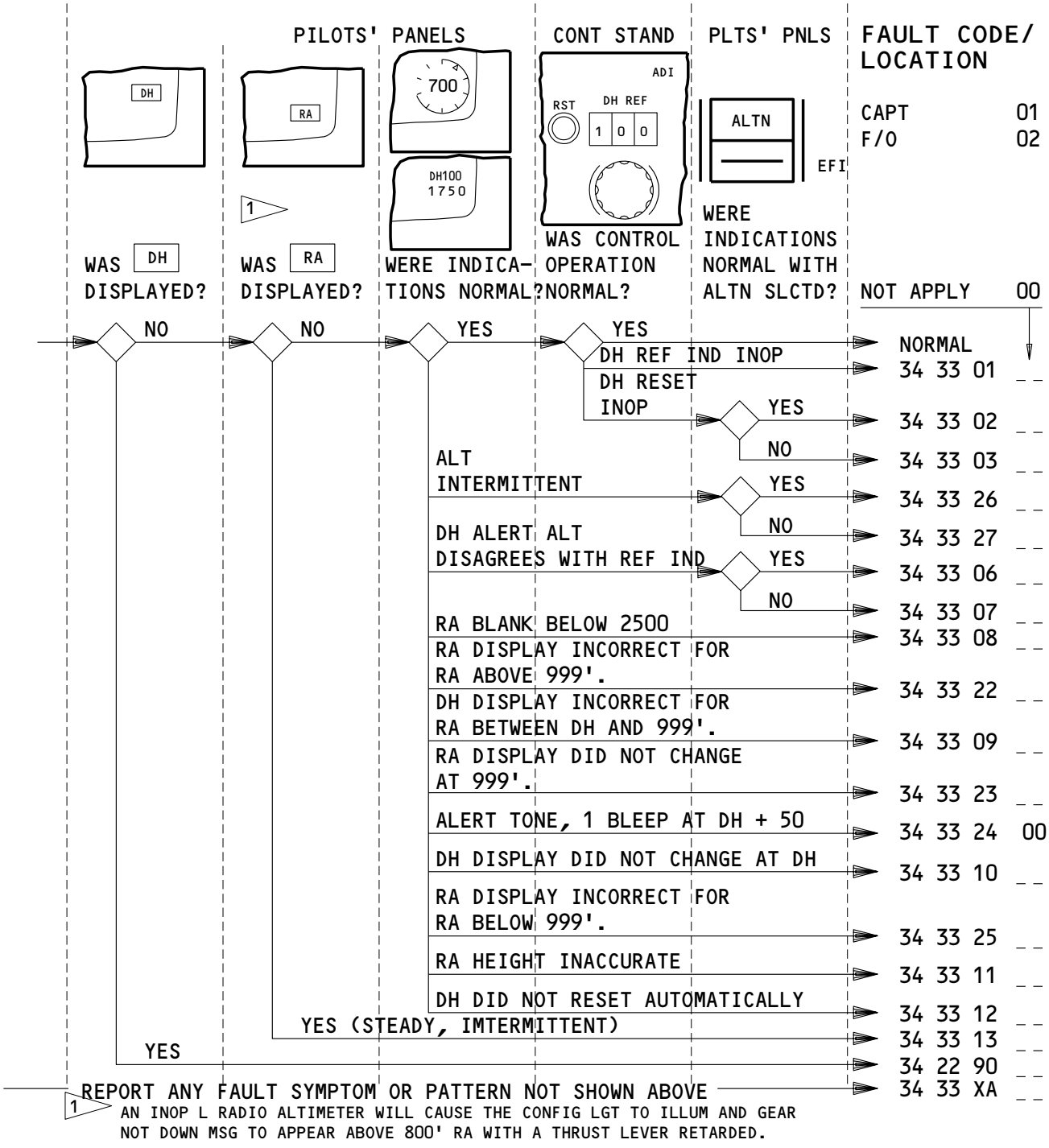

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E4	(LEFT) EFIS CONT PNL (L)	11F20	(CENTER) RAD ALTM (C)
11E25	(RIGHT) EFIS CONT PNL (R)	11F26	(RIGHT) RAD ALTM (R)
11F5	(LEFT) RAD ALTM (L)		

RADIO ALTIMETER & DH (ADI) - FAULT CODES

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NOT USED
Figure 28

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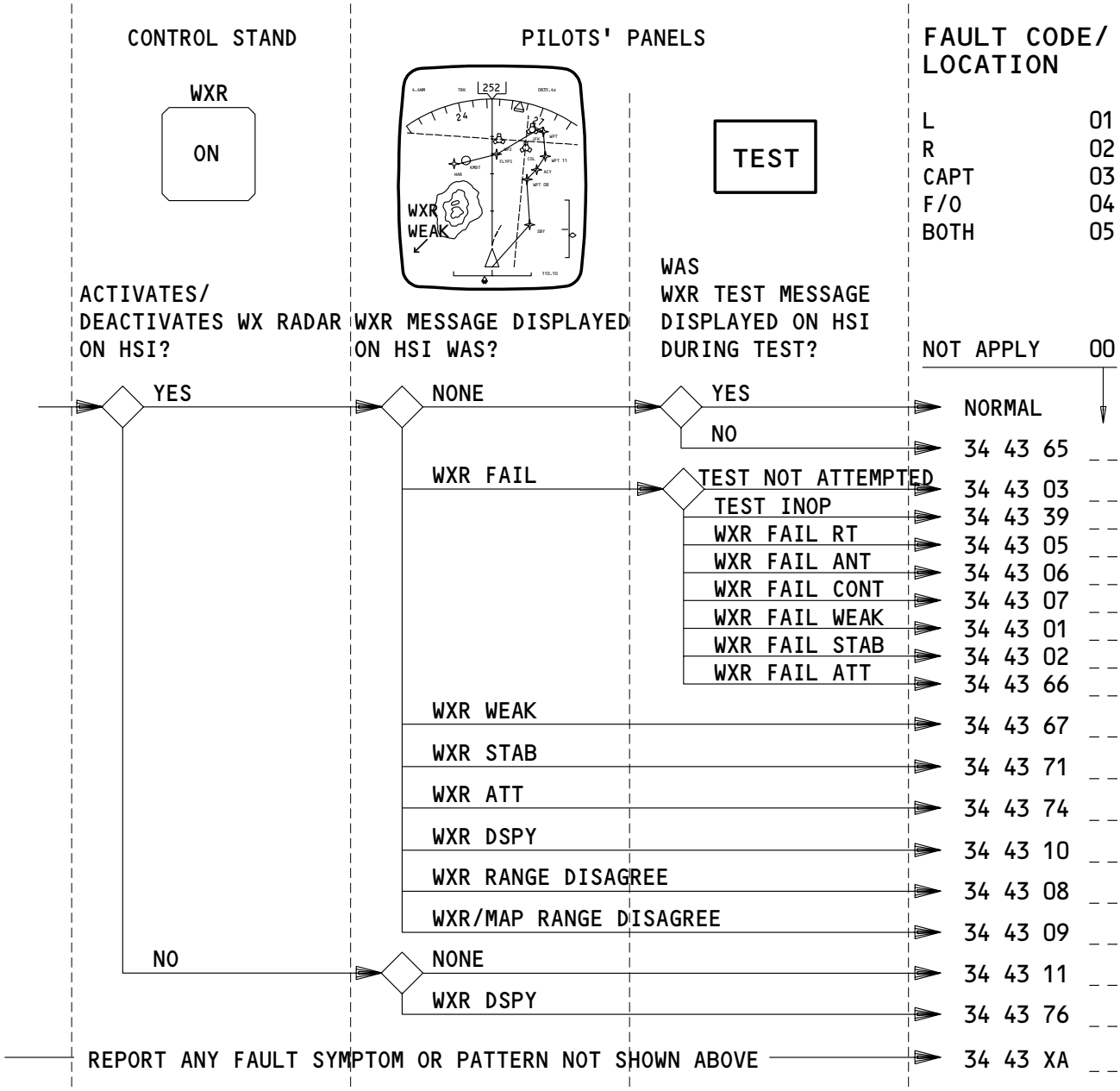

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E12	WX RADAR IND
11F2	WX RADAR (L)
11F23	WX RADAR (R)

WEATHER RADAR FAULTS (HSI) – FAULT CODES

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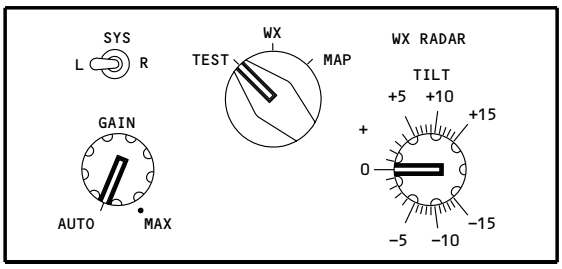
AFT ELECTRONIC PANEL



FAULT CODE/ LOCATION

L	01
R	02
BOTH	03

WAS CONTROL PANEL SELECTION NORMAL?

FROM SHEET 1

YES	NORMAL	NOT APPLY 00
MODE (TEST, WX, MAP) ABNORMAL	34 43 17 _ _	
GAIN ABNORMAL	34 43 19 _ _	
TILT ABNORMAL	34 43 13 _ _	
SYSTEM SELECT INOP	34 43 36 00	

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 43 XB 00

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E12	WX RADAR IND
11F2	WX RADAR (L)
11F23	WX RADAR (R)

WEATHER RADAR CONTROLS – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

F02232

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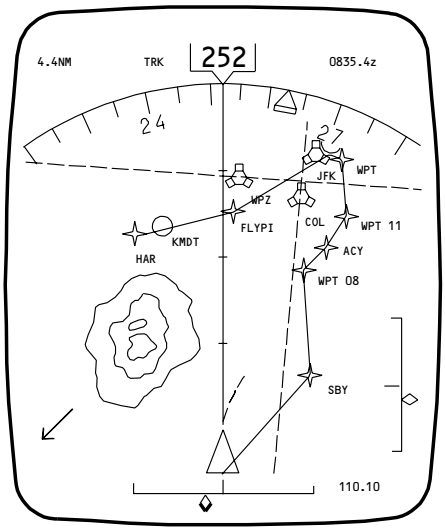
PILOTS' PANELS



FAULT CODE/ LOCATION

L	01
R	02
BOTH	03

HSI WXR DISPLAY QUALITY?

	NOT APPLY	00
OK	NORMAL	
SPOKING PRESENT	34 43 47	_ _
SWEEP ABNORMAL	34 43 49	_ _
RETURN ABNORMAL	34 43 51	_ _
PRECIP INTENSITY TOO STRONG OR TOO WEAK	34 43 53	_ _
MISSING	34 43 55	_ _

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 43 XC _ _

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E12	WX RADAR IND
11F2	WX RADAR (L)
11F23	WX RADAR (R)

WEATHER RADAR DISPLAY QUALITY – FAULT CODES

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NOT USED
Figure 31

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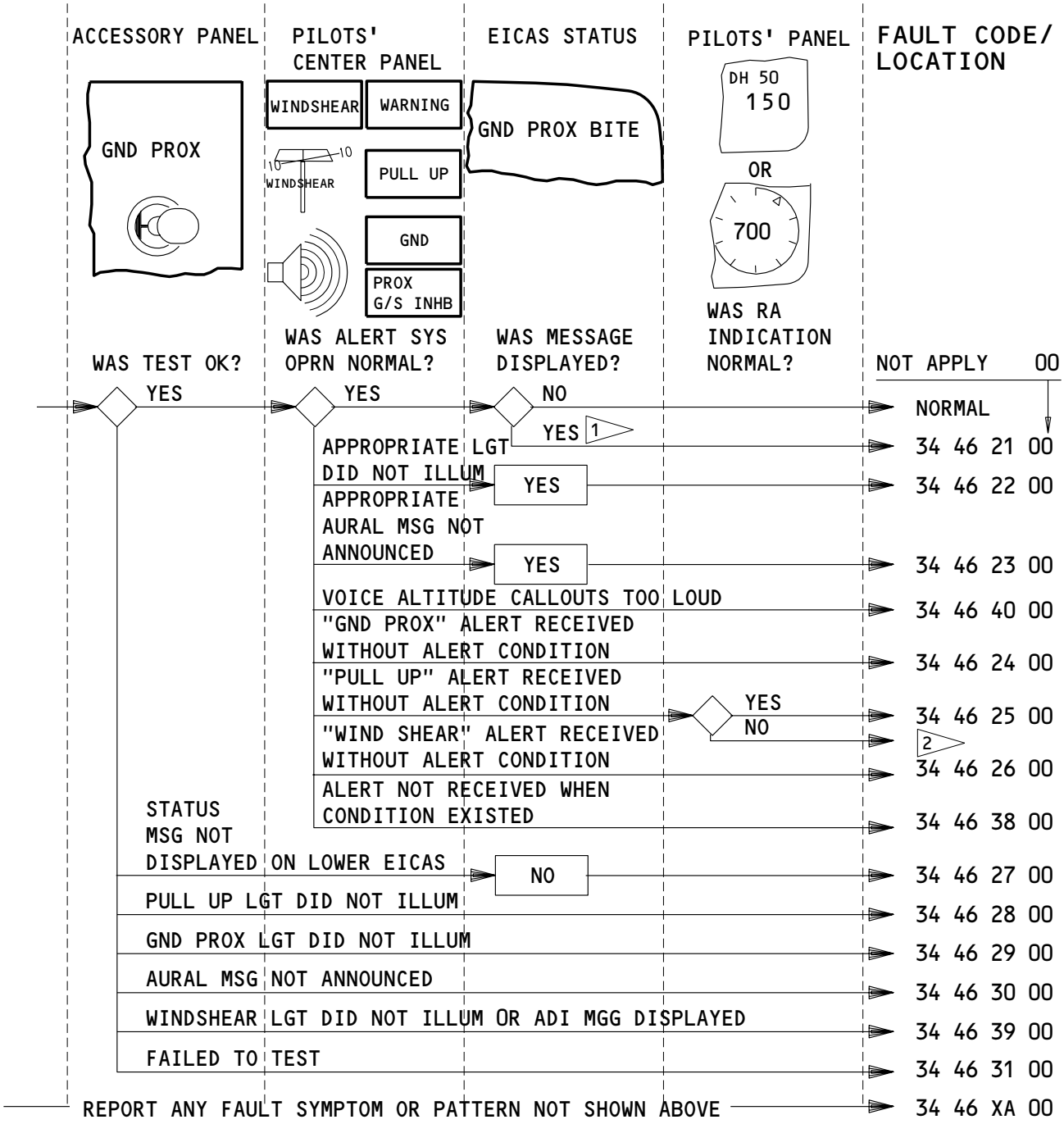

1 GND PROX BITE WILL BE DISPLAYED IF L-IRU IS NOT ALIGNED, OR EITHER L-ADC, L-RA OR L-ILS ARE NOT ON. VERIFY THESE ARE OK BEFORE REPORTING THIS CODE.

2 SEE "RADIO ALTIMETER & DH (ADI)" FAULT CODES.

APPLICABLE CIRCUIT BREAKERS

11F4 GND PROX

GROUND PROXIMITY & WINDSHEAR WARNING
TEST AND OPERATION - FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

295342

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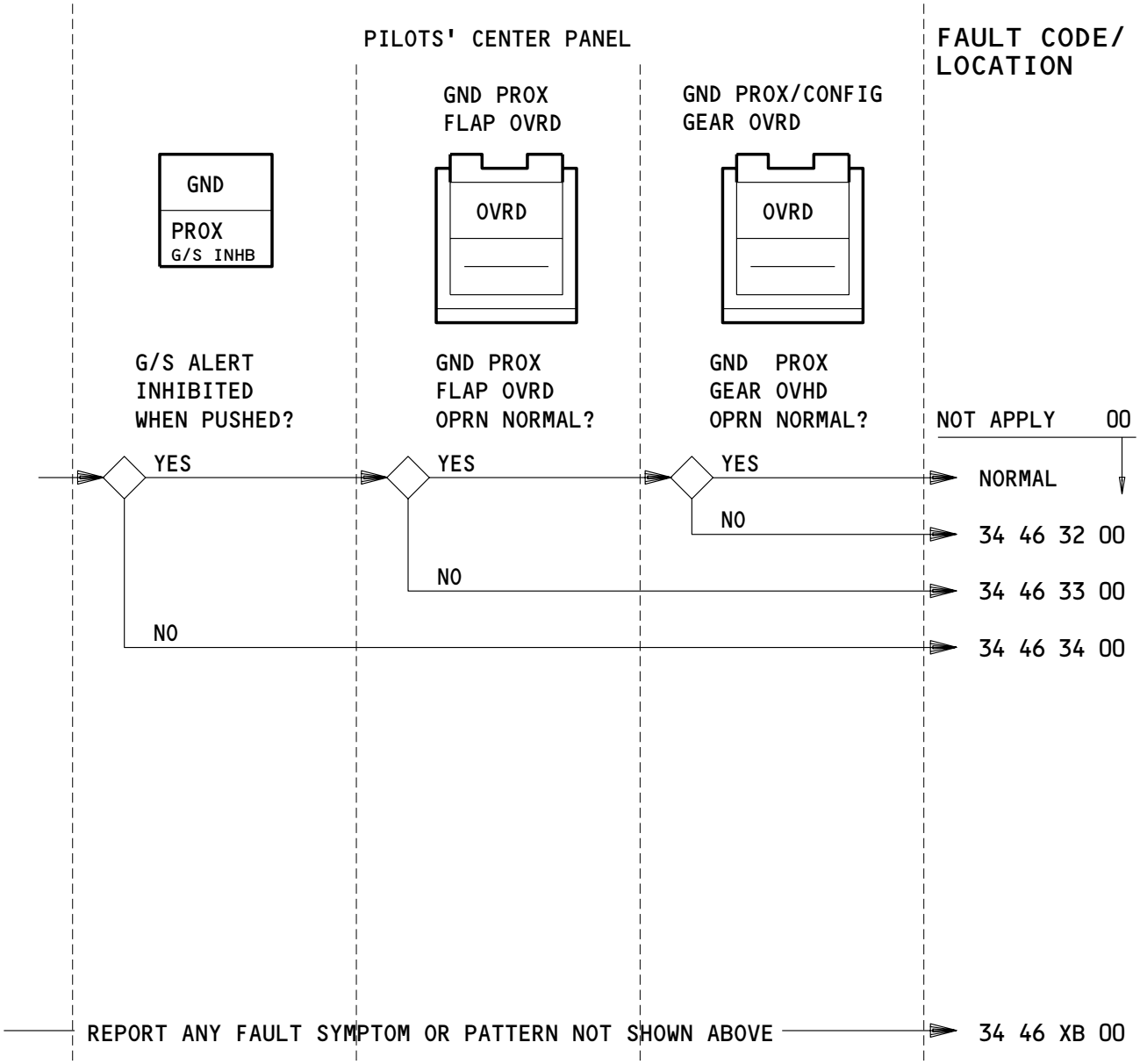

APPLICABLE CIRCUIT BREAKERS

11F4 GND PROX

GROUND PROXIMITY WARNING, INHIBIT AND OVERRIDE - FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

F57435

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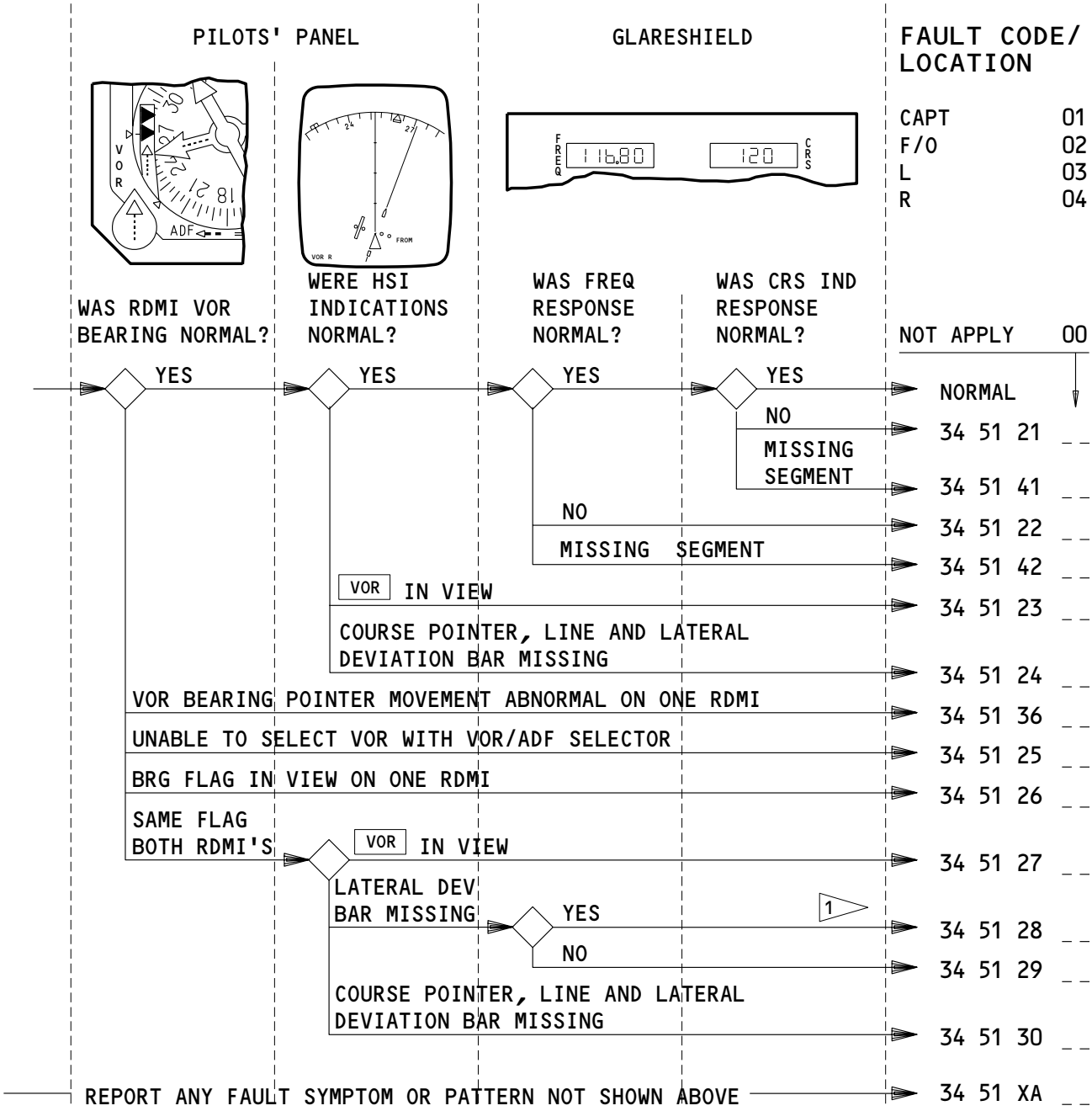

1 VOR FLAG ON THE RDMI AND MISSING LATERAL DEVIATION BAR ARE NORMAL WHEN NO VOR SIGNAL IS AVAILABLE. USE THIS CODE ONLY WHEN YOU KNOW VOR SIGNAL IS AVAILABLE.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A1	VOR MKR L	11E33	(RIGHT) VOR (R)
11A6	RDMI L	11F25	(RIGHT) RDMI (R)

VOR – CONTROL AND DISPLAY – FAULT CODES

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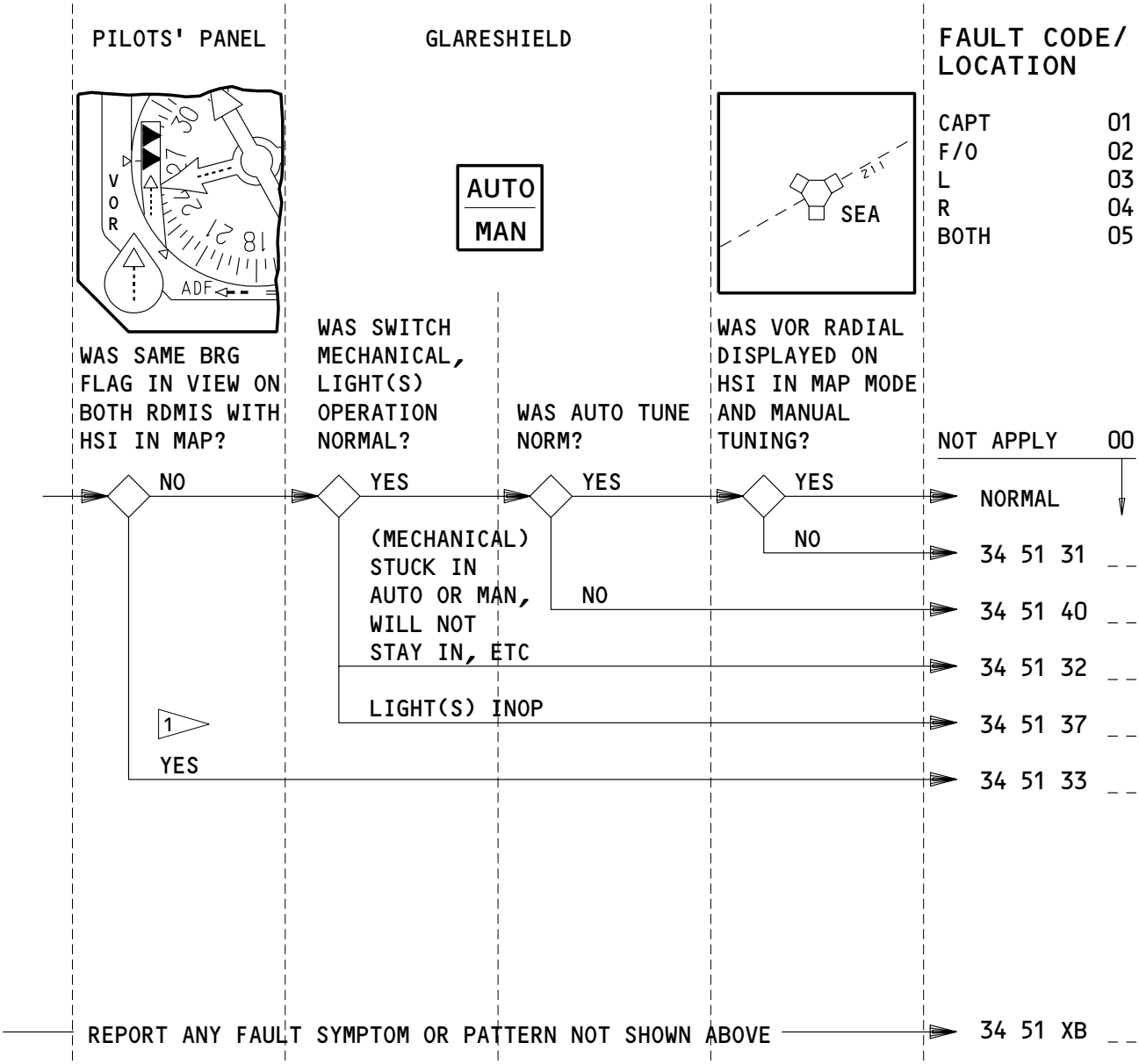

1 VERIFY VOR IS OK WITH HSI IN VOR MODE BEFORE SELECTING THIS CODE. IF NOT SELECT CODE FROM "VOR - CONTROL AND DISPLAY" PAGE.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A1	VOR MKR L	11E33	(RIGHT) VOR (R)
11A6	RDMI L	11F25	(RIGHT) RDMI (R)

VOR - HSI IN MAP MODE - FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

174769

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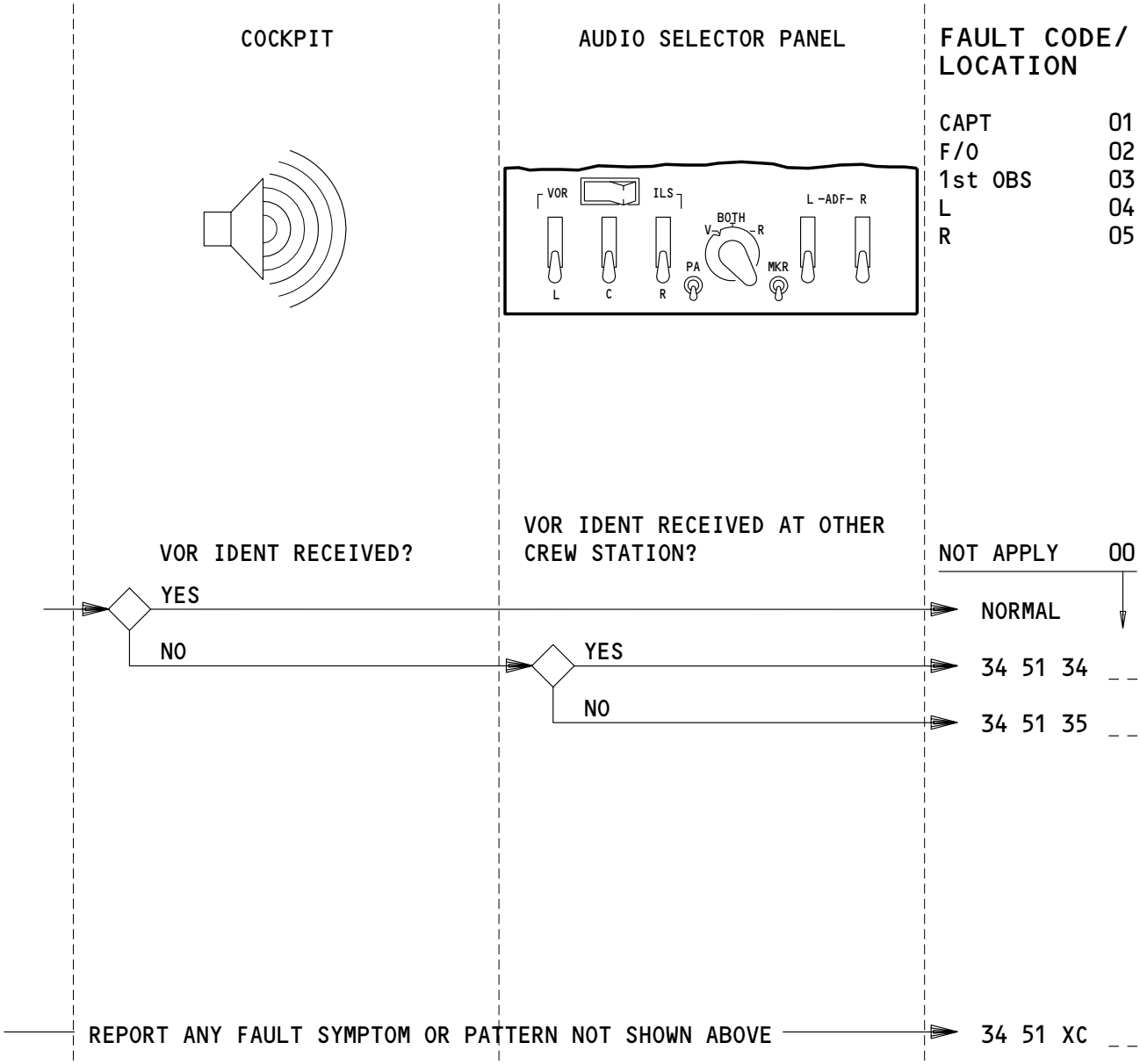

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A1	VOR/MKR L
11E33	(RIGHT) VOR (R)

VOR IDENT – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

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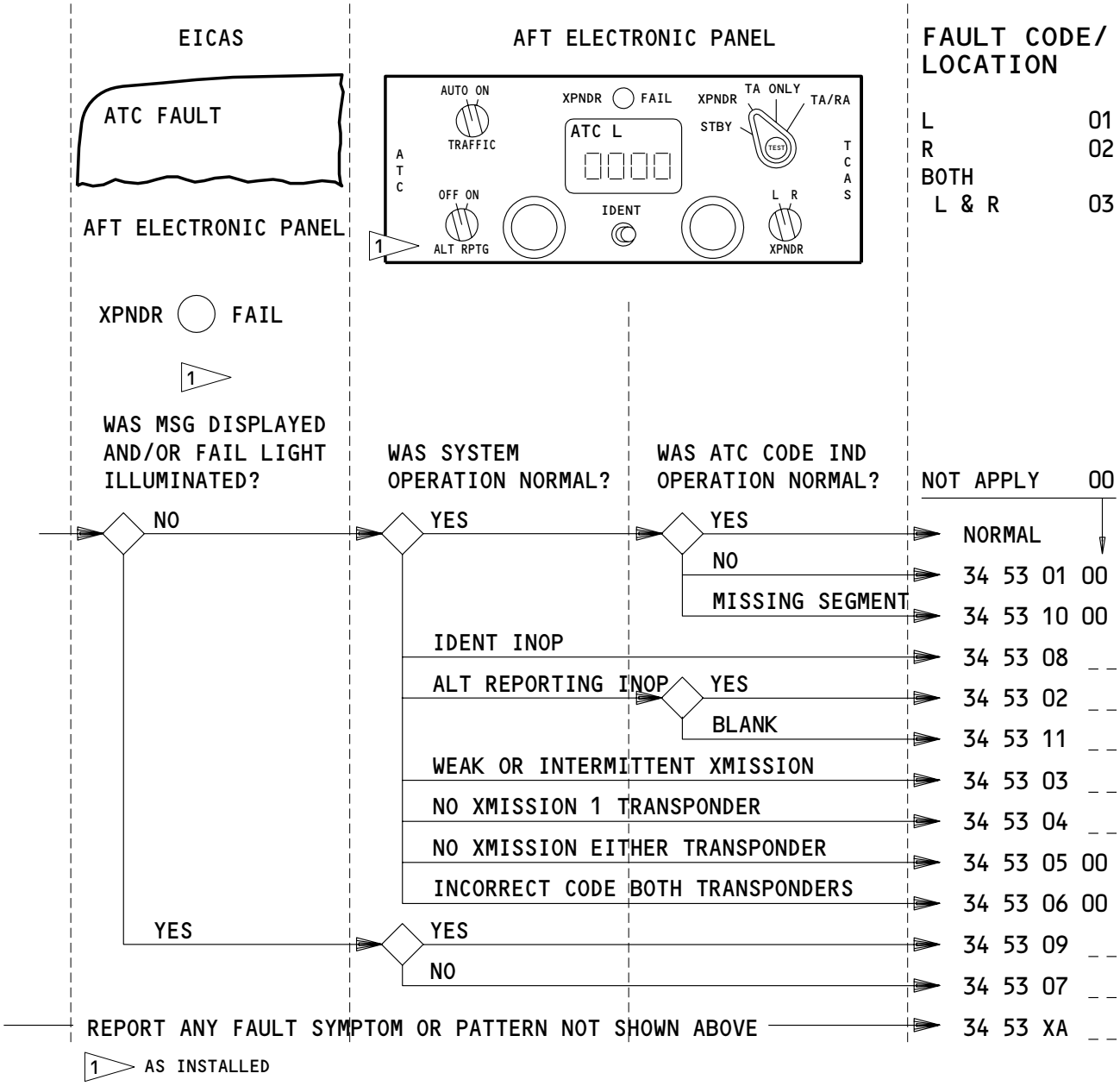

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11F7	(LEFT) ATC (L)
11F28	(RIGHT) ATC (R)

ATC TRANSPONDER – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

C62195

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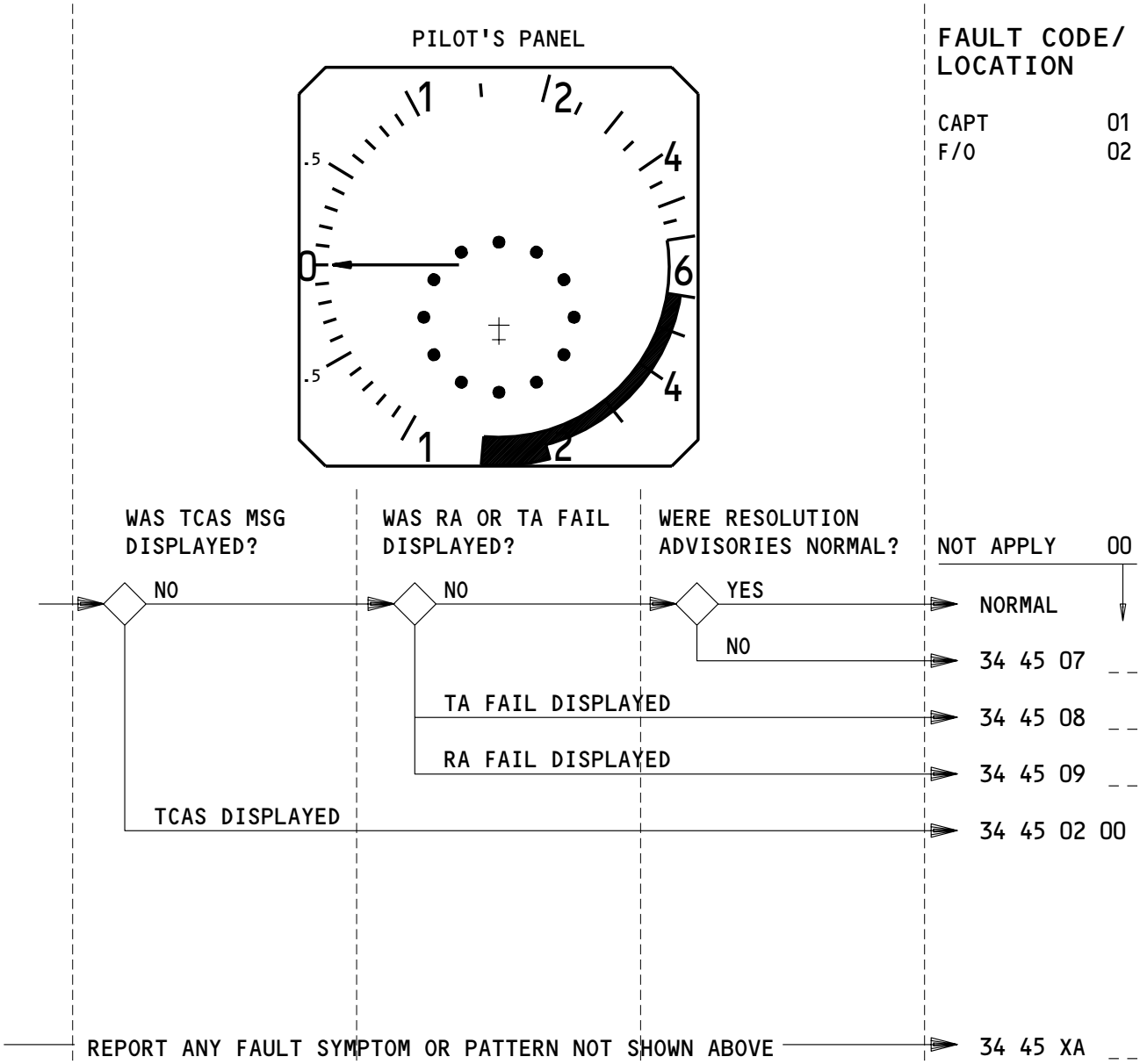

APPLICABLE CIRCUIT BREAKERS

11E5	LEFT VSI
11E26	RIGHT VSI

VERTICAL SPEED INDICATOR TCAS – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

E21440

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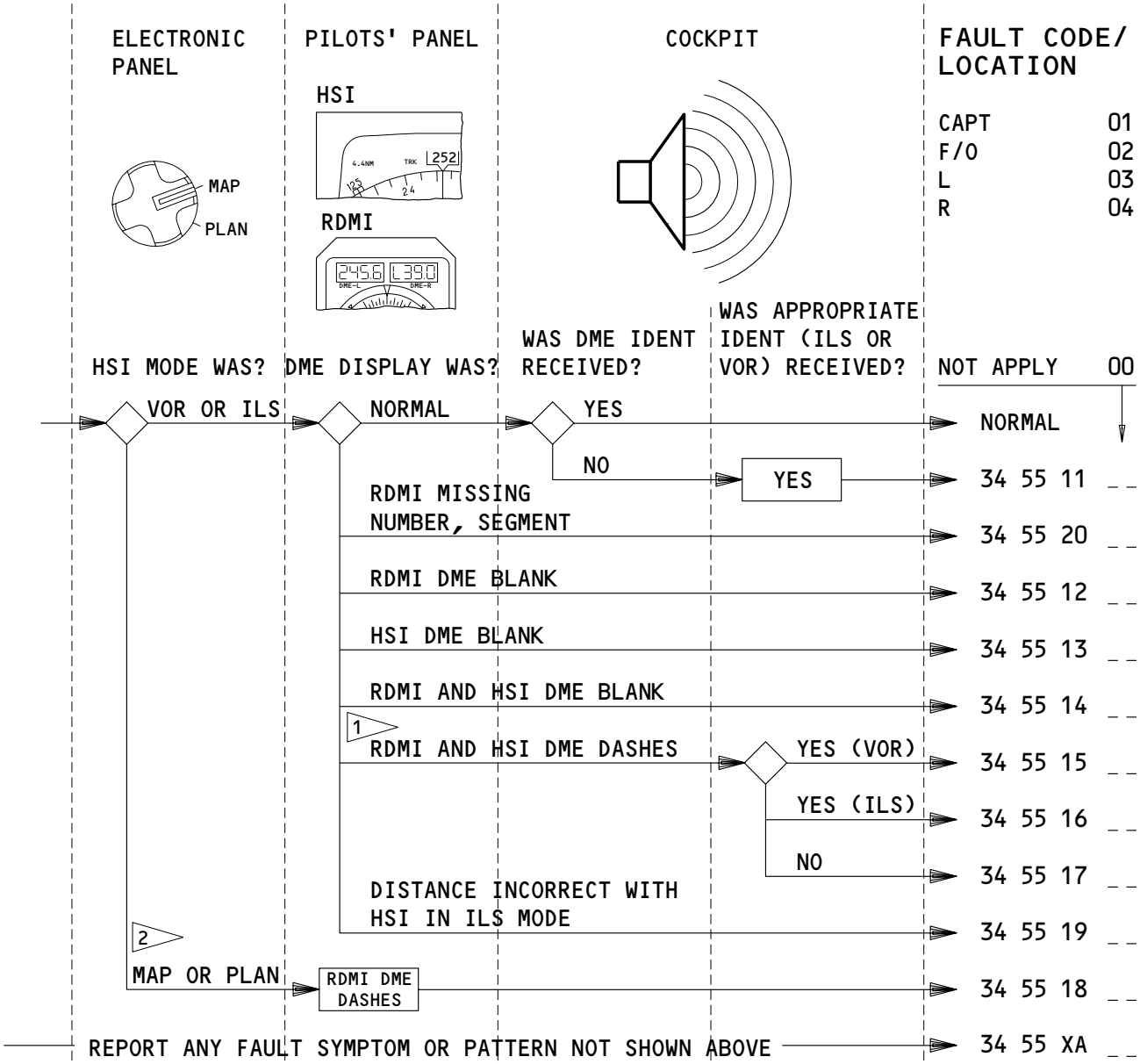

1 DASHES ON THE RDMI AND HSI DME ARE NORMAL WHEN NO DME SIGNAL IS AVAILABLE. USE THESE CODES ONLY WHEN YOU KNOW DME SIGNAL IS AVAILABLE.

2 VERIFY DME IS OK WITH HSI IN VOR OR ILS MODE BEFORE SELECTING THESE CODES. IF NOT OK SELECT CODE FROM VOR OR ILS BRANCH.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A1	VOR/MKR L	11E32	(RIGHT) DME (R)
11E11	(LEFT) DME (L)	11E33	(RIGHT) VOR (R)

DME – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

174774

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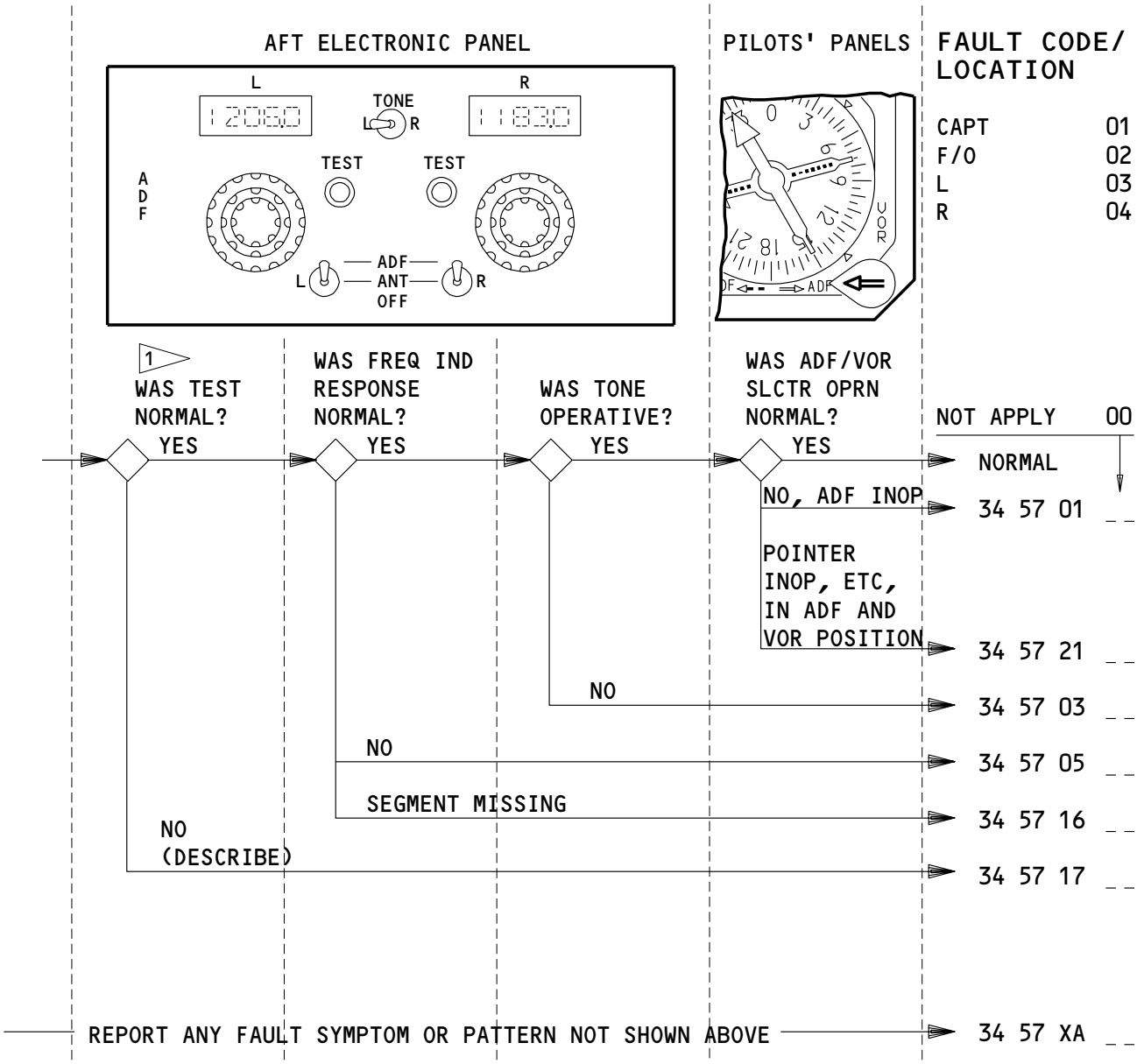

1 TEST MOMENTARILY DISPLAYS RDMI BRG POINTER FLAGS, POINTERS THEN MOVE 135° FROM AIRPLANE HDG. FLAGS REMAIN IF TEST FAILS.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A3	ADF (L, R)	11F25	(RIGHT) RDMI (R)
11A6	RDMI L	11F27	ADF R
11F6	(LEFT) ADF (L)		

ADF CONTROL PANEL/RDMI – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

174776

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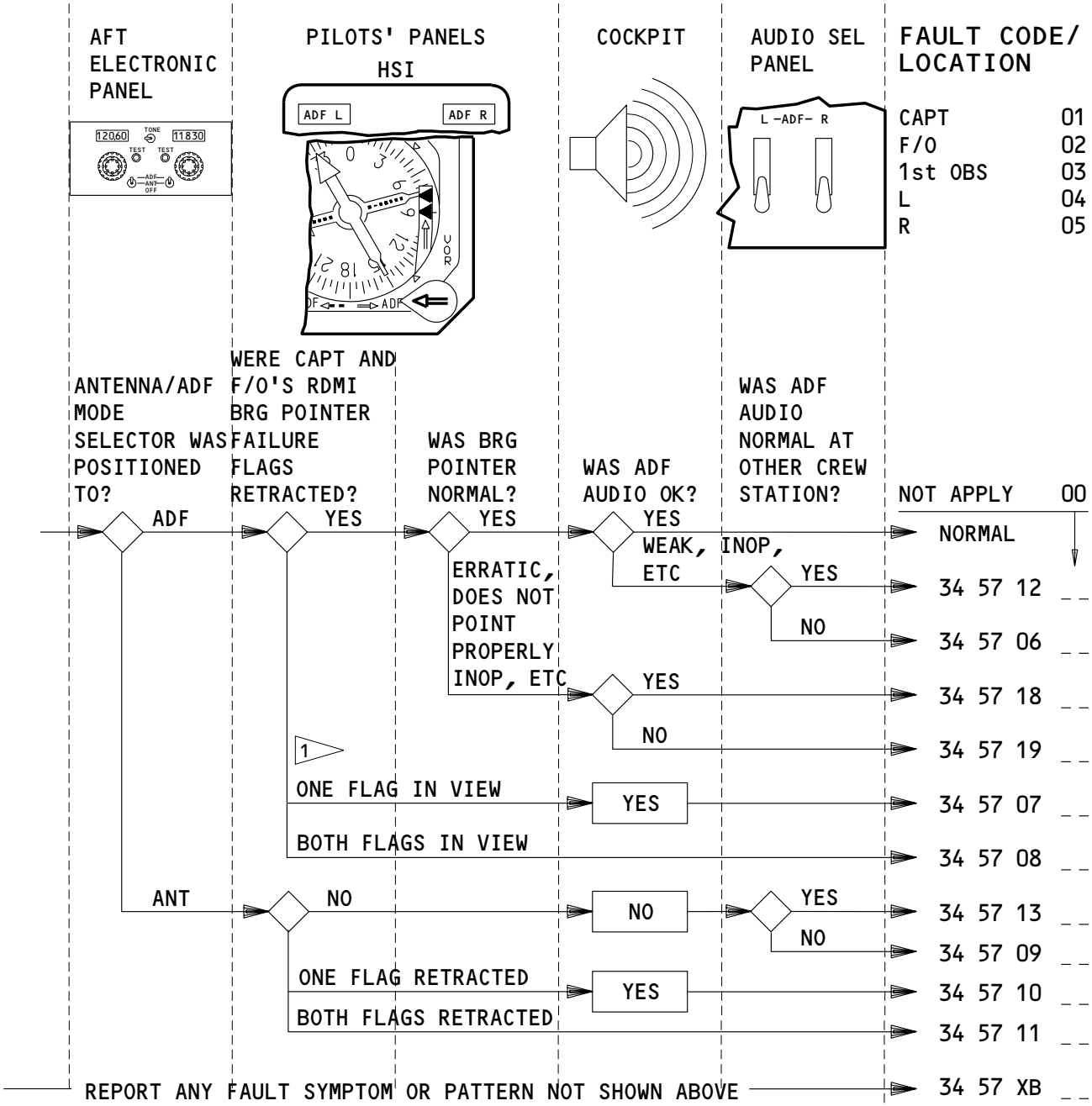

1 ADF RECEIVER MAY LOCK UP DURING ELEC POWER TRANSFER. BRG POINTER FLAG WILL DISPLAY ON RDMI. ADF MAY BE RESTORED BY CYCLING ADF CIRCUIT BREAKER.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A3	ADF (L, R)	11F6	(LEFT) ADF (L)	11F27	ADF R
11A6	RDMI L	11F25	(RIGHT) RDMI (R)		

ADF (ADF, ANT MODE) - FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

672855

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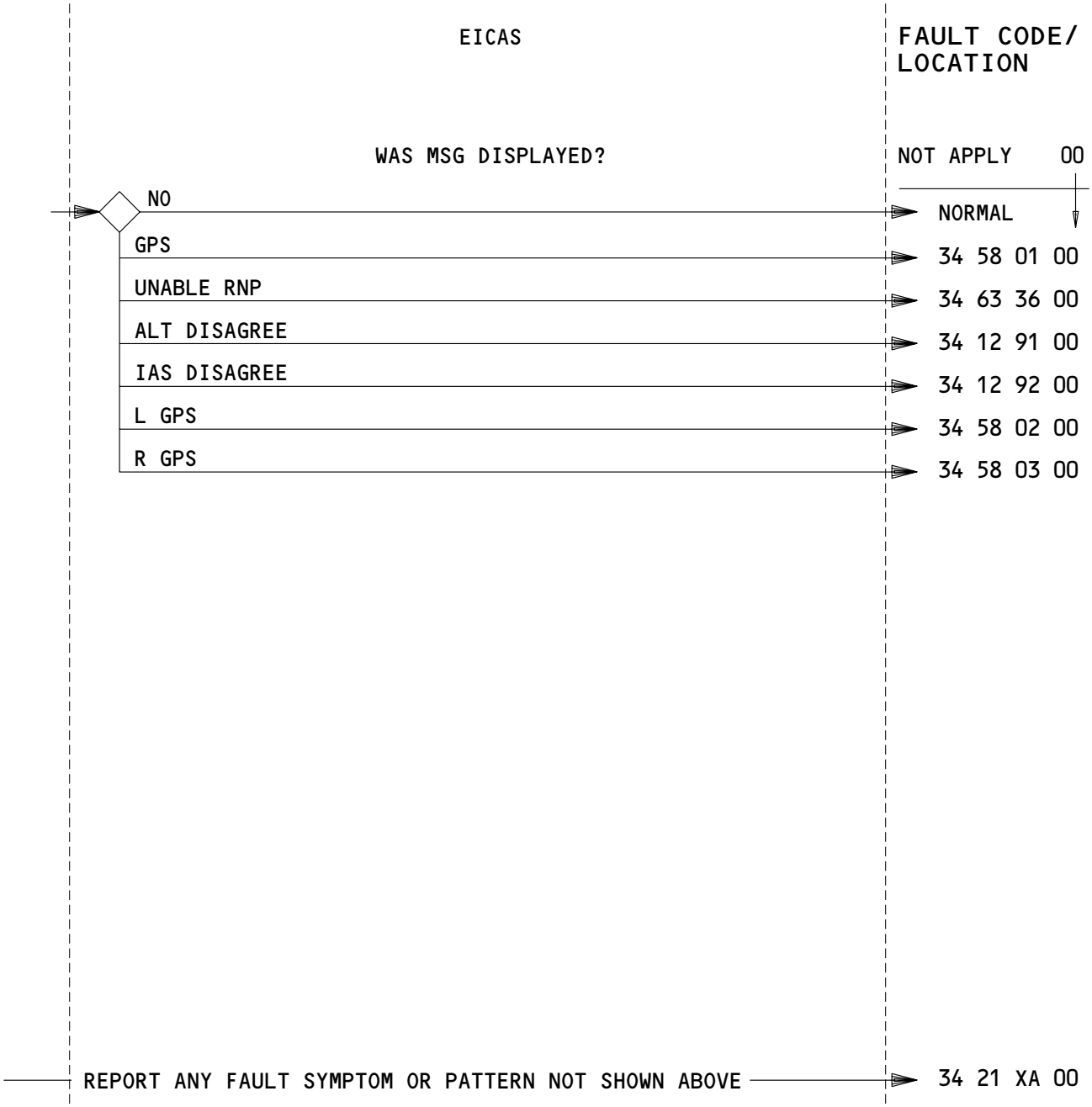

EICAS MESSAGE – FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

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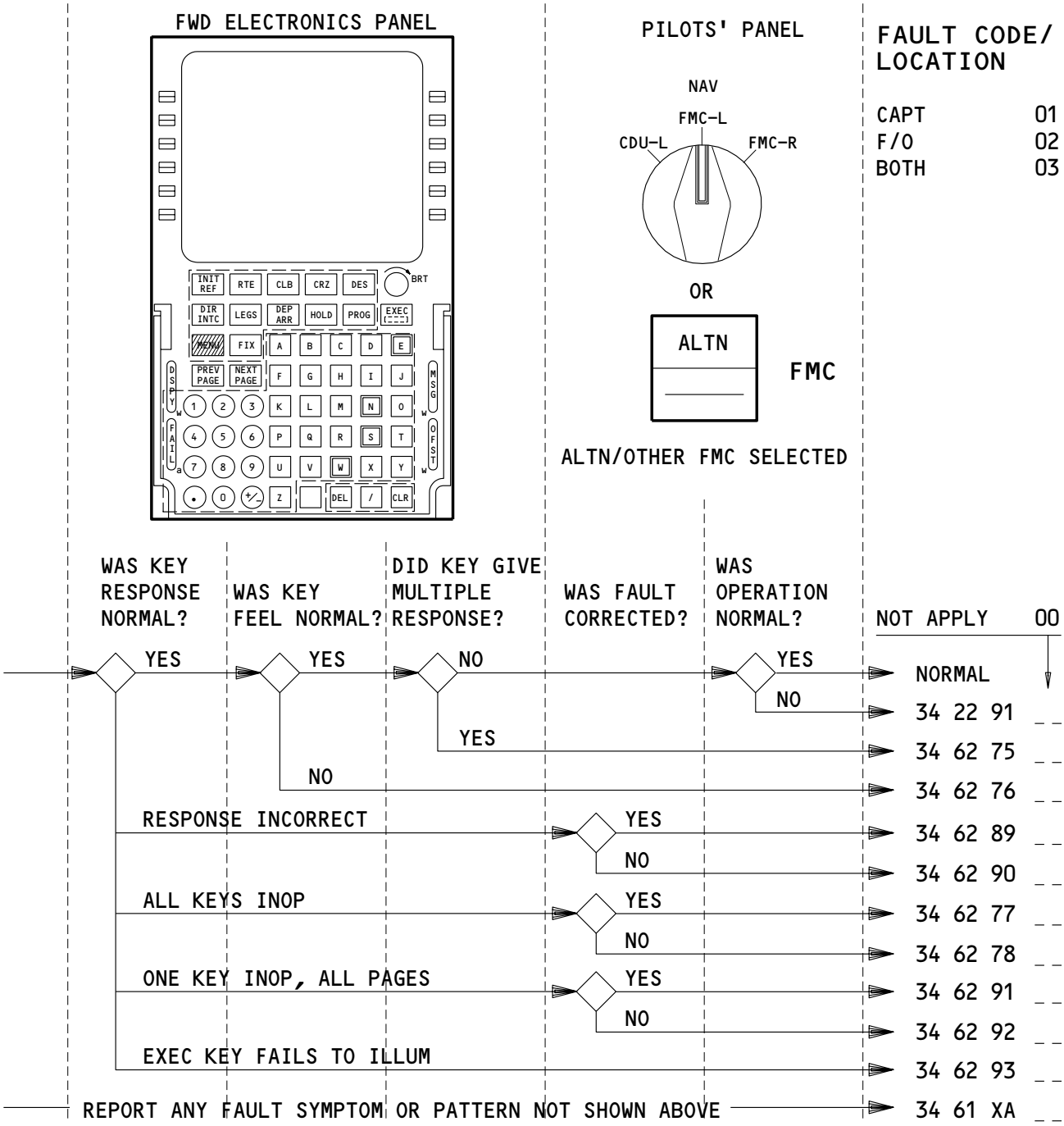

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)

FMC-CDU KEYS & ALTN FMC - FAULT CODES

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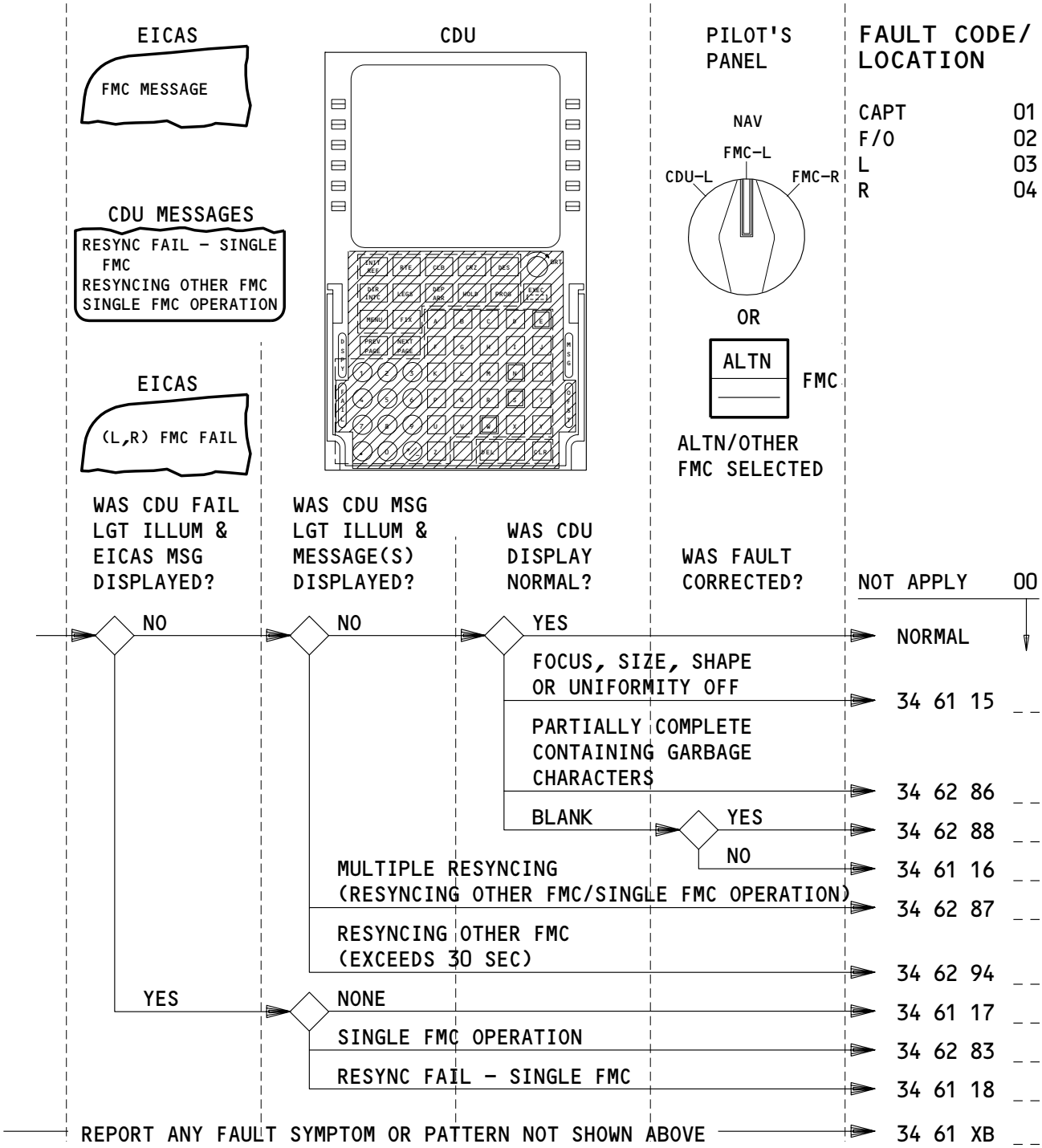

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)

CDU FAIL, FMC FAIL AND RESYNC - FAULT CODES

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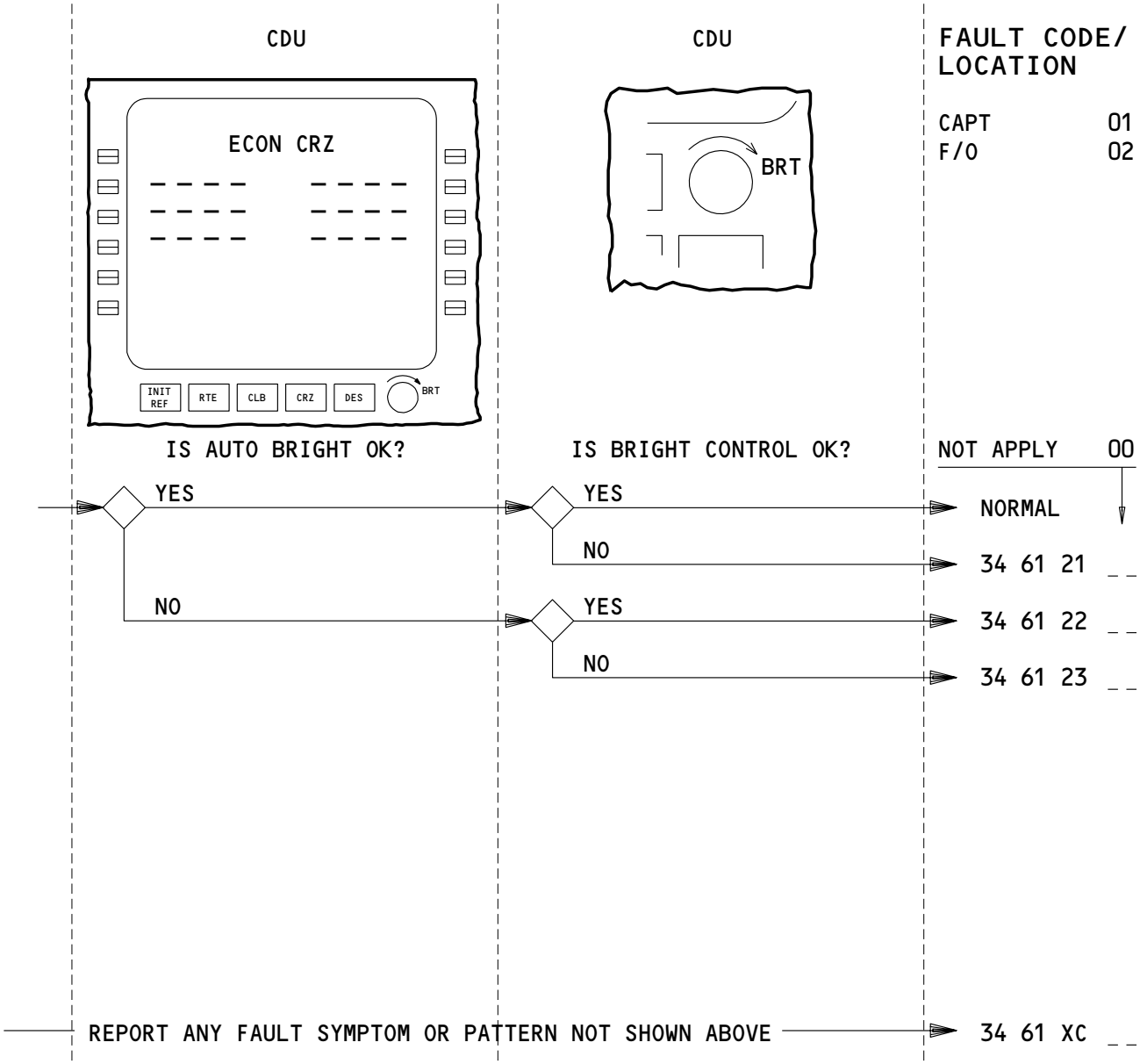

APPLICABLE CIRCUIT BREAKERS

11E8	LEFT FMCS CDU
11E9	LEFT FMCS CMPTR
11E29	RIGHT FMCS CDU
11E30	RIGHT FMCS CMPTR

FMC-CDU BRIGHTNESS - FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

174781

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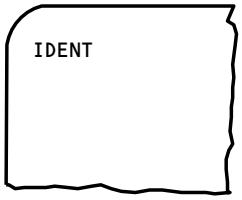
CDU PAGE



FAULT CODE/ LOCATION

CAPT	01
F/O	02
BOTH	03

ARE PAGE DISPLAYS AND RESPONSES NORMAL?

NOT APPLY 00

- YES → NORMAL
- NAV DATA INCORRECT → 34 61 27 _ _
- DATA INCORRECT (DRAG FACTOR, F-FACTOR, OP PROG) → 34 61 28 _ _
- INCORRECT ENG TYPE DISPLAYED → 34 62 95 _ _
- CDU'S LOCKED UP ON IDENT PAGE → 34 62 84 03

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 61 XD _ _

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)

FMC-CDU IDENT PAGE - FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

174782

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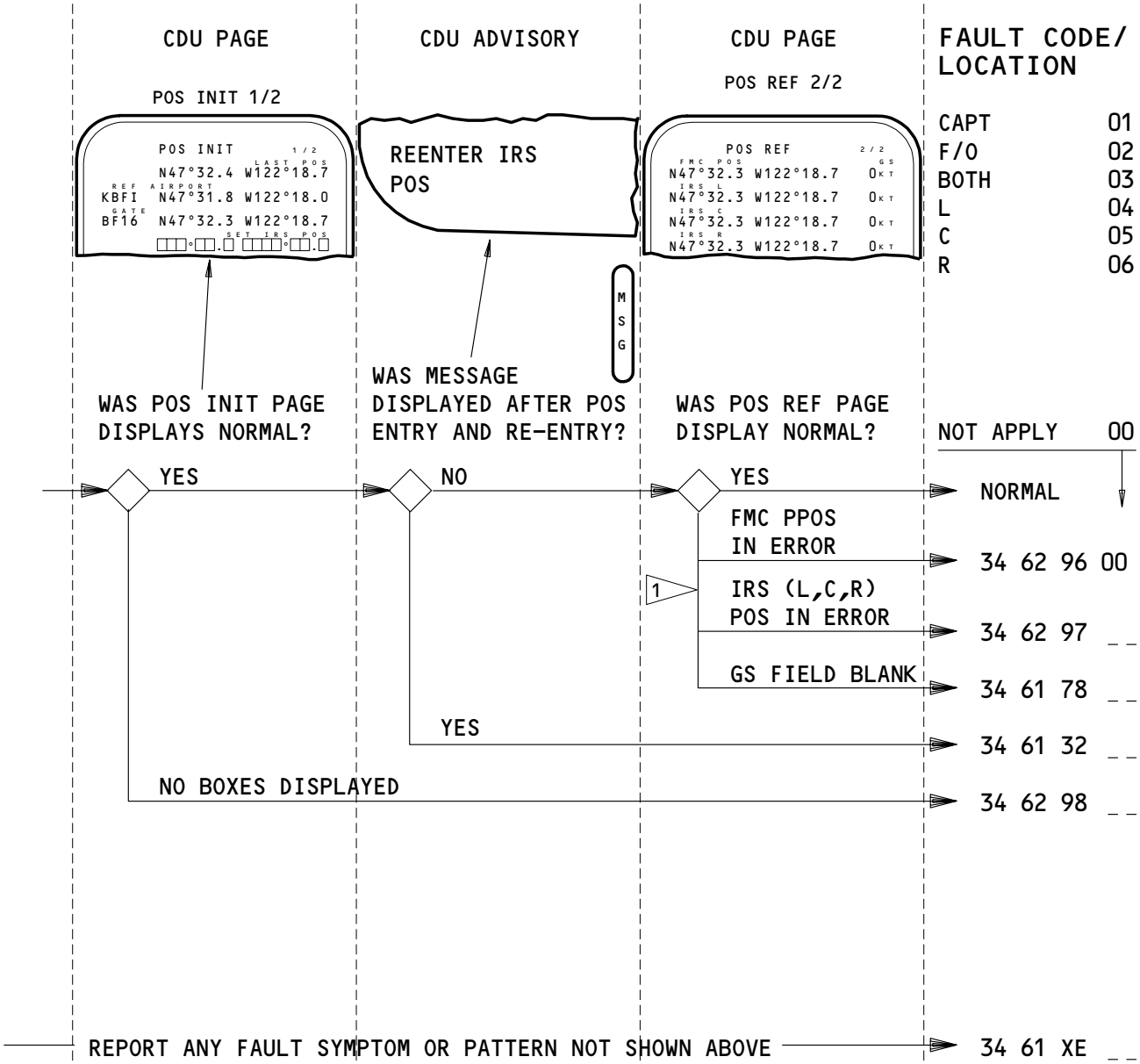

1 RECORD TIME IRS WAS IN OPERATION, ACTUAL AND INDICATED LATITUDE AND LONGITUDE. ADD ADDITIONAL NOTE TO LOG BOOK REPORT IF ERROR IS EXCESSIVE FOR 2 CONSECUTIVE FLIGHTS. (SEE RADIAL POSITION ERROR CHECK)

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

6D3	L IRS	11E8	(LEFT) FMCS CDU (L)	11F1	(LEFT) IRS (L)
6D4	C IRS	11E9	(LEFT) FMCS CMPTR (L)	11F21	(CENTER) IRS (C)
6D5	R IRS	11E29	(RIGHT) FMCS CDU (R)	11F22	(RIGHT) IRS (R)
		11E30	(RIGHT) FMCS CMPTR (R)		

FMC-CDU POS INIT/REF PAGE - FAULT CODES

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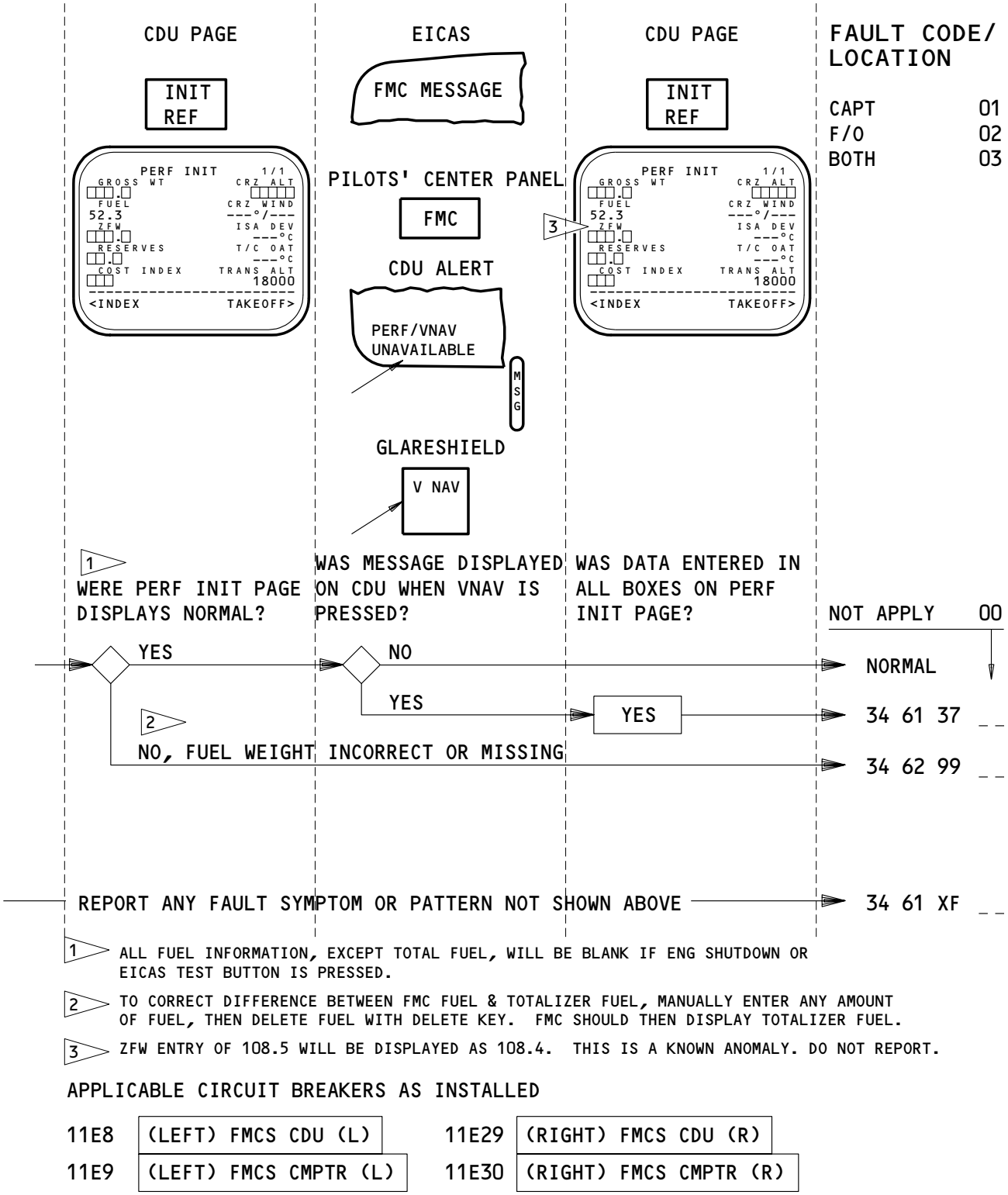

1 ALL FUEL INFORMATION, EXCEPT TOTAL FUEL, WILL BE BLANK IF ENG SHUTDOWN OR EICAS TEST BUTTON IS PRESSED.

2 TO CORRECT DIFFERENCE BETWEEN FMC FUEL & TOTALIZER FUEL, MANUALLY ENTER ANY AMOUNT OF FUEL, THEN DELETE FUEL WITH DELETE KEY. FMC SHOULD THEN DISPLAY TOTALIZER FUEL.

3 ZFW ENTRY OF 108.5 WILL BE DISPLAYED AS 108.4. THIS IS A KNOWN ANOMALY. DO NOT REPORT.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)

FMC-CDU PERFORMANCE INITIALIZATION PAGE - FAULT CODES

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NOT USED
Figure 48

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NOT USED
Figure 49

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NOT USED
Figure 50

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NOT USED
Figure 51

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CDU PAGE

FIX INFO

FAULT CODE/ LOCATION

CAPT	01
F/O	02
BOTH	03

WERE PAGE DISPLAYS AND RESPONSES NORMAL?

NOT APPLY	00
YES	NORMAL
BRG/DIS FR INCORRECT	34 61 72 _ _
PL/BRG/DIS INCORRECT	34 61 73 _ _
ABEAM INCORRECT	34 61 74 _ _
DTG INCORRECT	34 61 75 _ _
ETA INCORRECT	34 61 76 _ _
ETA AND DTG INCORRECT	34 61 77 _ _

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 61 XK _ _

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)

FMC – CDU FIX INFO PAGE – FAULT CODES

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NOT USED
Figure 53

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NOT USED
Figure 54

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NOT USED
Figure 55

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NOT USED
Figure 56

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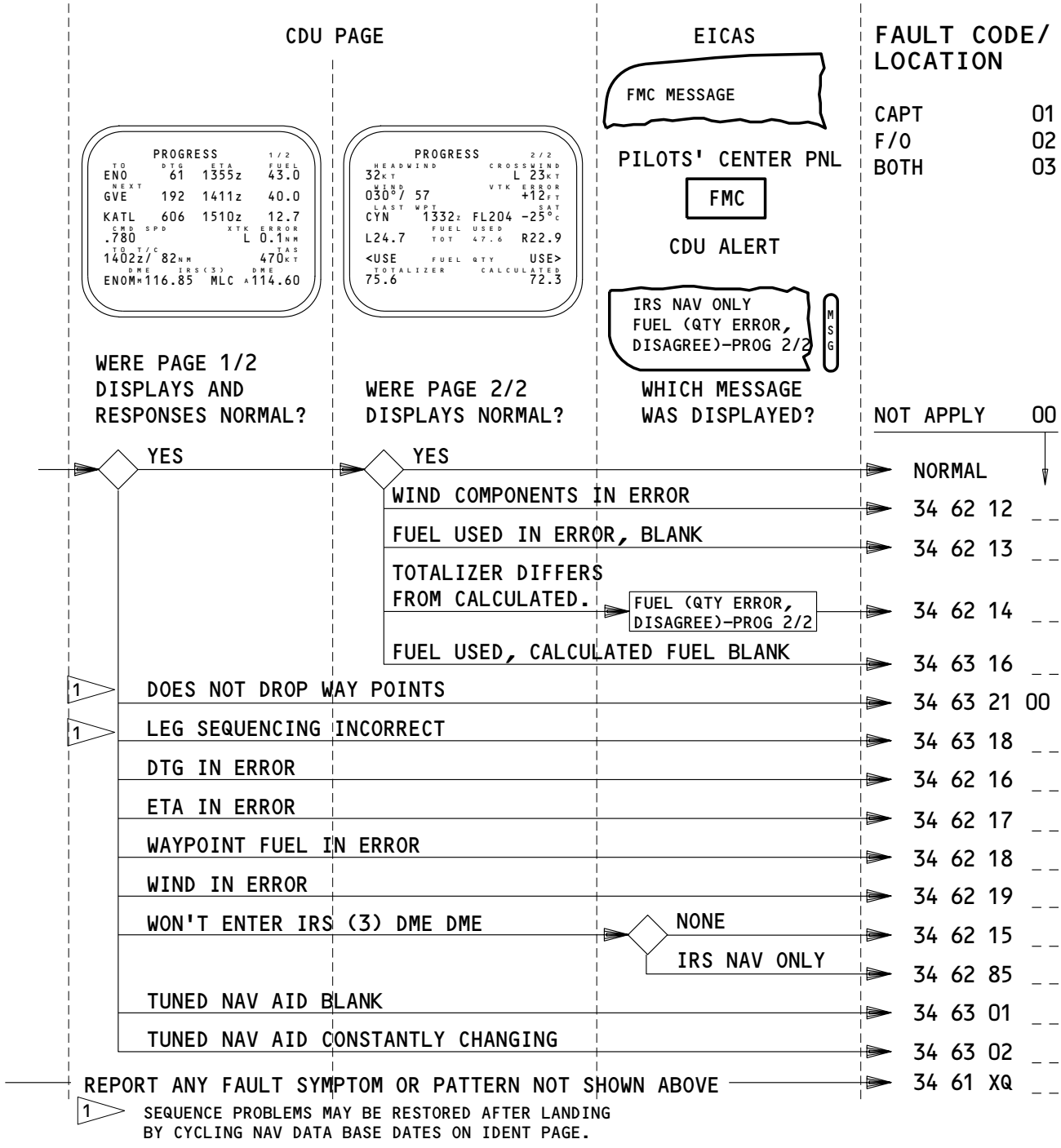
NOT USED
Figure 57

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



1 SEQUENCE PROBLEMS MAY BE RESTORED AFTER LANDING BY CYCLING NAV DATA BASE DATES ON IDENT PAGE.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11A1	VOR/MKR L	11E11	(LEFT) DME (L)	11E32	(RIGHT) DME (R)
11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)	11E33	(RIGHT) VOR (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)		

FMC-CDU PROGRESS PAGE - FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

174788

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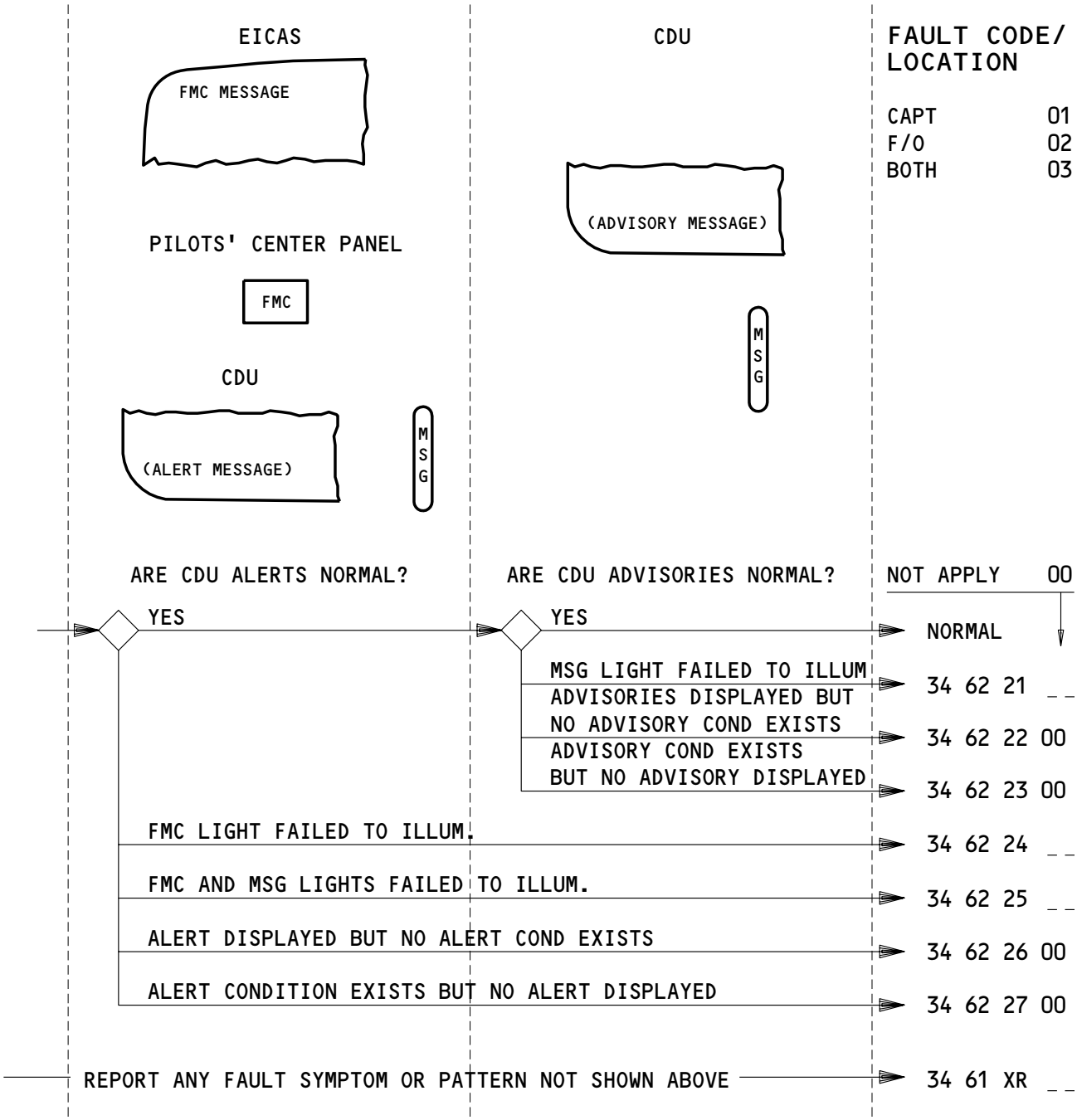

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)

FMC–CDU ALERT AND ADVISORY MESSAGES – FAULT CODES

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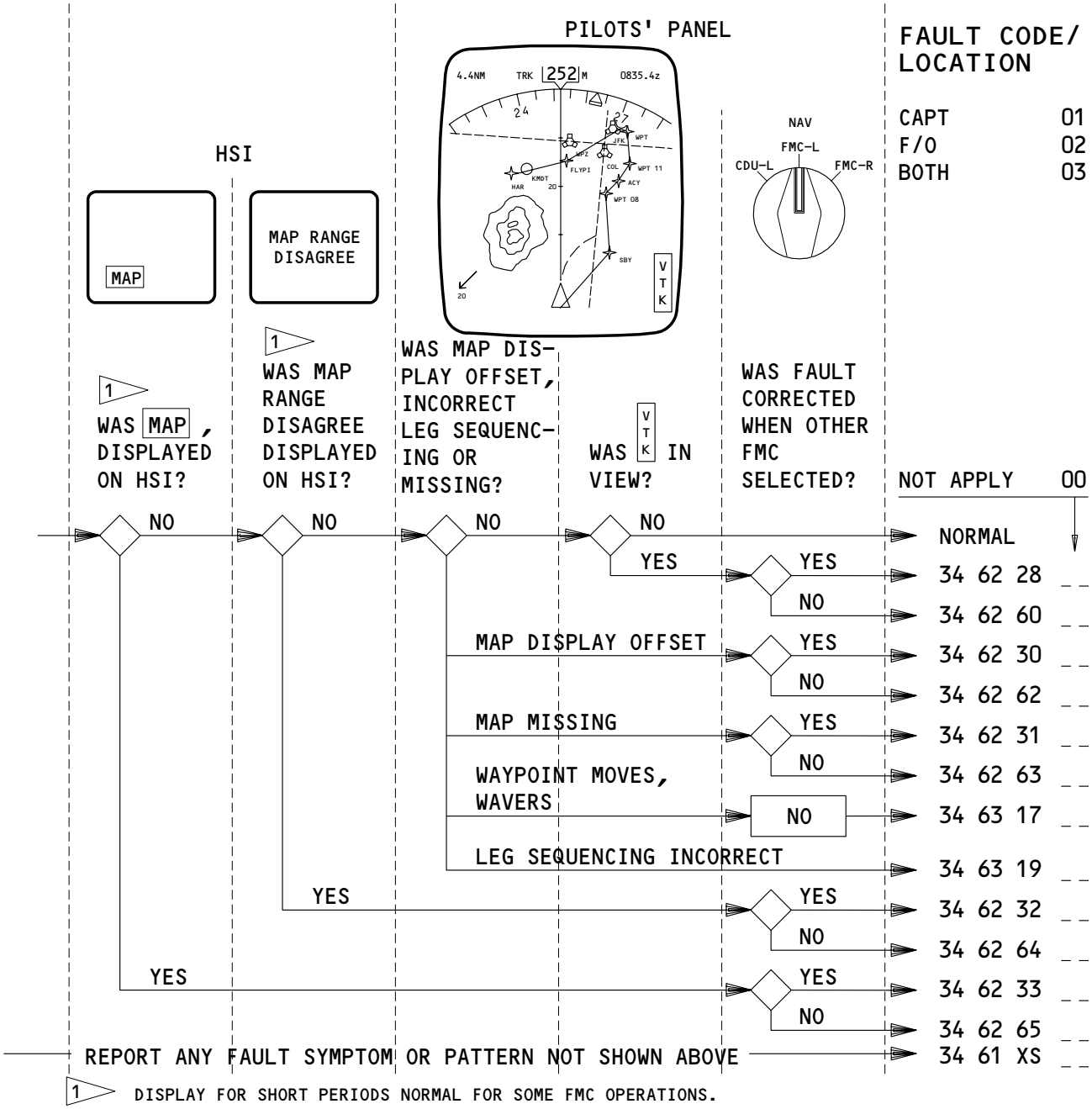

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E4	(LEFT) EFIS CONT PNL (L)	11E25	(RIGHT) EFIS CONT PNL (R)	11F8	EFIS SYM GEN L
11E6	(LEFT) HSI (L)	11E27	(RIGHT) HSI (R)	11F9	EFIS SYM GEN (C, CTR)
11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)	11F29	(RIGHT) EFIS SYM GEN (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)		

FMC-HSI MAP GENERAL - FAULT CODES

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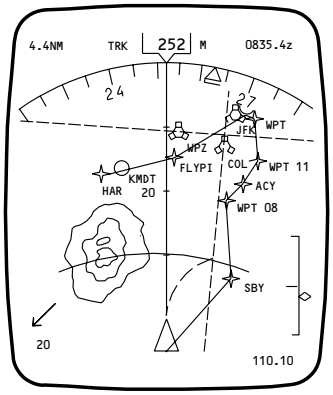
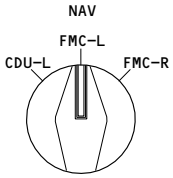
PILOTS' PANEL



PILOTS' PANEL



FAULT CODE/ LOCATION

CAPT	01
F/O	02
BOTH	03

WERE DISTANCE TO GO AND ETA NORMAL?

WAS WIND DIFFERENT BETWEEN HSIs?

WAS FAULT CORRECTED WHEN OTHER FMC SELECTED?

NOT APPLY 00

- YES → NO → NORMAL
- YES → YES → 34 63 03 00
- YES → NO → 34 63 04 00
- BOTH MISSING → YES → 34 62 38 _ _
- BOTH MISSING → NO → 34 62 70 _ _
- BOTH DISPLAY DASHES → YES → 34 63 05 _ _
- BOTH DISPLAY DASHES → NO → 34 63 06 _ _

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 61 XT _ _

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E4	(LEFT) EFIS CONT PNL (L)	11E25	(RIGHT) EFIS CONT PNL (R)	11F8	EFIS SYM GEN L
11E6	(LEFT) HSI (L)	11E27	(RIGHT) HSI (R)	11F9	EFIS SYM GEN (C, CTR)
11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)	11F29	(RIGHT) EFIS SYM GEN (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)		

FMC-HSI MAP DATA - FAULT CODES

EFFECTIVITY

ALL

34-FAULT CODE DIAGRAM

753458

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NOT USED
Figure 62

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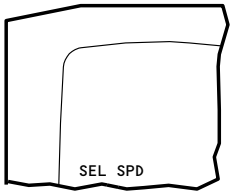
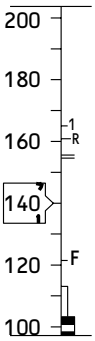
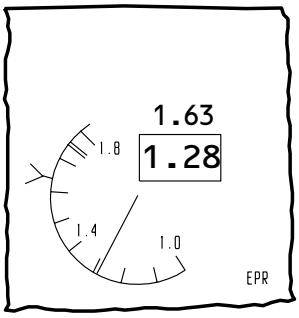
PILOTS' PANEL





EICAS



FAULT CODE/ LOCATION

CAPT	01
F/O	02
L	03
R	04
BOTH	05

WAS SEL SPD MSG DISPLAYED, WHEN IN VNAV SEL SPEED MODE?

DID COMMAND AIRSPEED READ 100 KTS WHEN IN VNAV SEL SPEED MODE? 1

WHEN IN VNAV THRUST COMMAND MODES, COMMAND BUG WAS?

NOT APPLY 00

- NO → NO → MAGENTA → NORMAL
- NO → NO → GREEN → 22 32 57 _ _
- NO → YES → 34 63 24 _ _
- YES → 22 11 07 _ _

REPORT ANY FAULT SYMPTOM OR PATTERN NOT SHOWN ABOVE → 34 61 XW _ _

1 THIS IS A NORMAL INDICATION WHEN RESYNCING FMC.

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E1	(LEFT) IAS MACH (L)	11E22	(RIGHT) IAS MACH (R)
11E8	(LEFT) FMCS CDU (L)	11E29	(RIGHT) FMCS CDU (R)
11E9	(LEFT) FMCS CMPTR (L)	11E30	(RIGHT) FMCS CMPTR (R)

FMC-VNAV MODE EPR AND AIRSPEED BUGS - FAULT CODES

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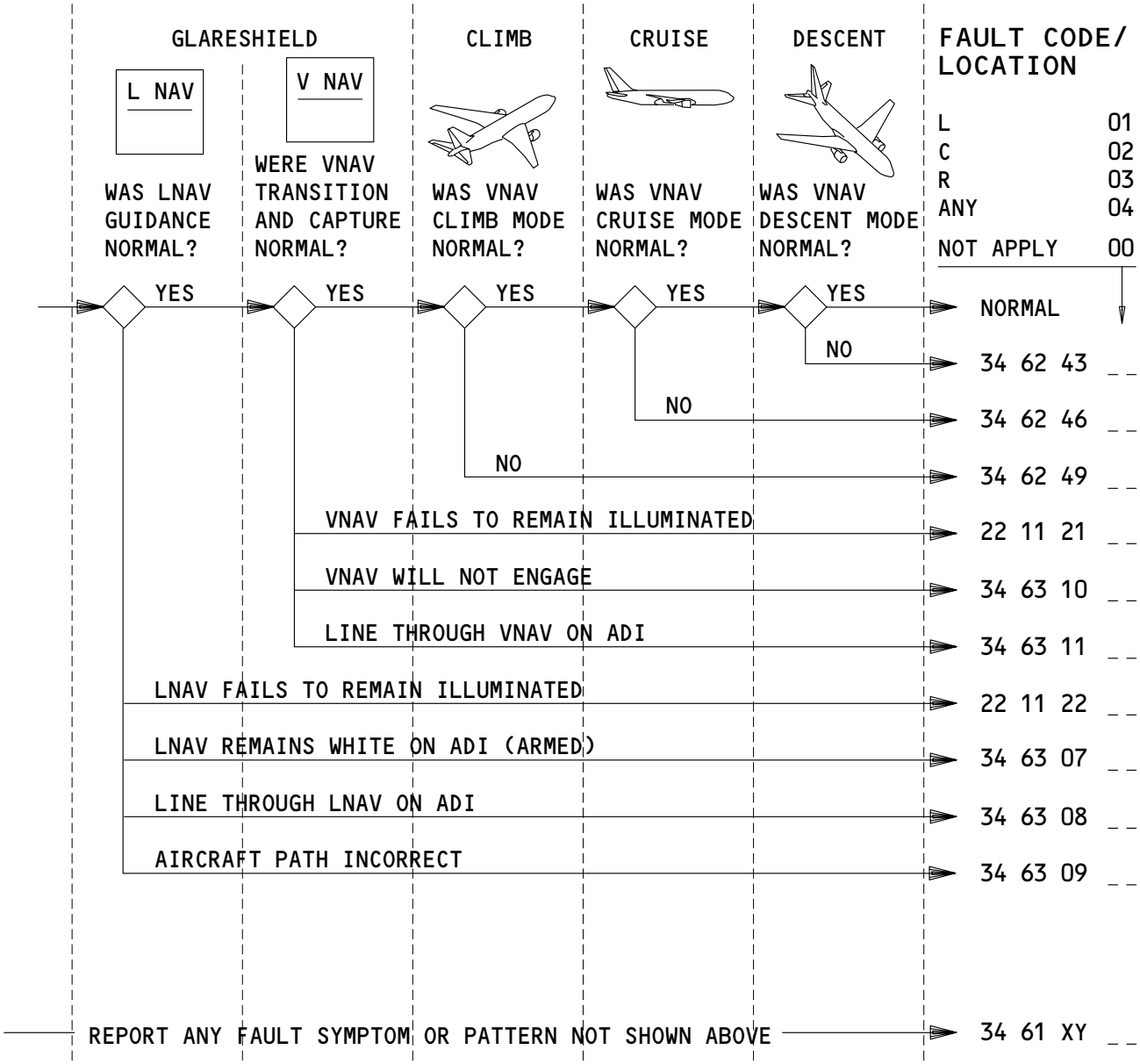

APPLICABLE CIRCUIT BREAKERS AS INSTALLED

11E8	(LEFT) FMCS CDU (L)	11E21	(CENTER) FLT CONT CMPTR SERVO (C)
11E9	(LEFT) FMCS CMPTR (L)	11E29	(RIGHT) FMCS CDU (R)
11E16	MODE CONT PNL L	11E30	(RIGHT) FMCS CMPTR (R)
11E17	FLT CONT CMPTR PWR L	11E34	MODE CONT PNL R
11E18	FLT CONT CMPTR SERVO L	11E35	(RIGHT) FLT CONT CMPTR PWR (R)
11E20	(CENTER) FLT CONT CMPTR PWR (C)	11E36	(RIGHT) FLT CONT CMPTR SERVO (R)

FMC–LNAV AND VNAV GUIDANCE – FAULT CODES

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 12 XA --	1. (01=Capt, 02=F/O) An electric altimeter problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-12-01, SSM 34-12-02
34 12 XB 00	1. A TAS, SAT, Or TAT problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-12-01, SSM 34-12-02
34 12 XC --	1. (01=Capt, 02=F/O) A mach, airspeed problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-12-01, SSM 34-12-02
34 12 XD --	1. (01=Capt, 02=F/O) An air data computer test problem was encountered by the flight crew which is not covered in the fault code diagrams (Ref fault code diagram for flight crew actions.) 2. SSM 34-12-01, SSM 34-12-02
34 12 XE --	1. (01=Capt, 02=F/O) An air data computer test problem was encountered by the flight crew which is not covered in the fault code diagrams (Ref fault code diagram for flight crew actions.) 2. SSM 34-12-01, SSM 34-12-02
34 12 XF --	1. (01=Capt, 02=F/O) A mach, airspeed, ALTN AIR DATA problem was encountered by the flight crew which is not covered in the fault code diagrams (Ref fault code diagram for flight crew actions). 2. SSM 34-12-01, SSM 34-12-02
34 13 XA 00	1. A standby airspeed and altimeter problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-13-01
34 16 XA --	1. (01=Capt, 02=F/O, 03=Both) An altitude alert problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref Chapter 22 fault code diagram for flight crew actions.) 2. SSM 34-16-01

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 XA --	1. (01=Capt, 02=F/O) An RDMI heading problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-21-01, SSM 34-21-02, SSM 34-21-03
34 21 XA 00	1. An EICAS message was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. Refer to 34-EICAS MESSAGES list.
34 21 XB --	1. (01=Capt, 02=F/O) A vertical speed indicator problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-21-01, SSM 34-21-02, SSM 34-21-03
34 21 XC --	1. (01=Capt, 02=F/O) An EHSI track and wind problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-21-01, SSM 34-21-02, SSM 34-21-03
34 21 XD --	1. (01=Capt, 02=F/O) An EHSI heading, trend vector, and Altn IRS problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-21-01, SSM 34-21-02, SSM 34-21-03
34 21 XE --	1. (01=Capt, 02=F/O, 03=L, 04=C, 05=R) An EADI attitude and ground speed problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-21-01, SSM 34-21-02, SSM 34-21-03
34 21 XF 00	1. An IRS accuracy problem was encountered by the flight crew that was not covered in the fault code diagram. (Ref fault code diagram for flight crew actions.) 2. AMM 34-21-00/501.
34 21 XF --	1. (01=L, 02=C, 03=R, 07=ALL) An IRS ALIGN FAULT panel problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-21-01, SSM 34-21-02, SSM 34-21-03

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 XG --	1. (01=L, 02=C, 03=R, 04=ALL) An IRS data entry and display problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-21-01, SSM 34-21-02, SSM 34-21-03
34 22 XA --	1. (01=Capt, 02=F/O) An EADI problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-22-08
34 22 XB --	1. (01=Capt, 02=F/O) An EHSI problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-22-07
34 22 XC --	1. (01=Capt, 02=F/O) An EHSI and EADI problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-22-07, SSM 34-22-08
34 22 XD --	1. (01=Capt, 02=F/O) An EHSI traffic, range, map and mode select problem encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-22-07
34 22 XE --	Not used.
34 22 XF --	Not used.
34 22 XG --	1. A heading reference problem was encountered by the flight crew which was not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-22-07

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 23 XA 00	1. A standby magnetic compass problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. Perform standby compass swing operation (AMM 34-23-00/201)
34 24 XA 00	1. A standby attitude reference system problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-24-01
34 31 XA --	1. (01=Capt EHSI and EADI, 02=F/O EADI and EHSI, 03=STBY ATT IND) An ILS TEST problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-31-01, SSM 34-31-02, SSM 34-31-03
34 31 XB --	1. (01=L, 02=R, 03=C, 04=Capt, 05=F/O) An ILS ADI/HSI problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-31-01, SSM 34-31-02, SSM 34-31-03
34 31 XC --	1. (01=Capt, 02=F/O) An ILS/EHSI problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-31-01, SSM 34-31-02, SSM 34-31-03
34 31 XD 00	1. An ILS controls and STBY ATT IND problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-31-01, SSM 34-41-02, SSM 34-41-03

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 32 XA --	1. A marker beacon problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-32-01
34 33 XA --	1. (01=Capt, 02=F/O) A radio altitude and DH (EADI) problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-33-01, SSM 34-33-02, SSM 34-33-03
34 43 XA --	1. (01=SYS L, 02=SYS R, 03=Capt, 04=F/O, 05=Both) A WXR display (HSI) problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-33-01 thru SSM 34-33-03

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 43 XB --	1. (01=SYS L, 02=SYS R) A WXR control problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-43-01

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 43 XC --	1. A (01=L, 02=R) system WXR display quality problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-43-01
34 46 XA 00	1. A ground proximity and windshear warning problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-46-01
34 46 XB 00	1. A ground proximity warning, inhibit and override problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-46-01
34 51 XA --	1. (01=Capt, 02=F/O) A VOR frequency select problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-51-01, SSM 34-51-02
34 51 XB --	1. (01=Capt, 02=F/O, 03=L, 04=R) A VOR display problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-51-01, SSM 34-51-02
34 51 XC --	1. (01=Capt, 02=F/O) A VOR course problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-51-01, SSM 34-51-02

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 53 XA --	1. (01=L, 02=R, 03=L & R) An ATC transponder problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-53-01, SSM 34-53-02
34 55 XA --	1. (01=Capt, 02=F/O, 03=L, 04=R) A DME problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-55-01, SSM 34-55-02
34 57 XA --	1. (01=Capt, 02=F/O, 03=L, 04=R) An ADF control panel/RDMI problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-57-01, SSM 34-57-02
34 57 XB --	1. An ADF (ADF, ANT mode) problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-57-01, SSM 34-57-02
34 61 XA --	1. (01=Capt, 02=F/O, 03=Both) An FMC CDU keys problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04
34 61 XB --	1. (01=Capt, 02=F/O) A CDU fail, FMC fail, or resync problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-61-02, SSM 34-61-01 thru SSM 34-61-04

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 61 XC --	1. (01=Capt, 02=F/O) A CDU brightness problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04
34 61 XD --	1. (01=Capt, 02=F/O, 03=Both) A CDU IDENT page problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04
34 61 XE --	1. (01=Capt, 02=F/O, 03=Both) A CDU POS INIT/REF page problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04
34 61 XF --	1. (01=Capt, 02=F/O, 03=Both) A CDU performance initialization page problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04 NOTE: RESERVES and TRANS ALT not applicable to FMCs with LNAV/VNAV configuration.
34 61 XG --	34 61 XG -- thru 34 61 XJ -- Not used.
34 61 XK --	1. (01=Capt, 02=F/O, 03=Both) A CDU FIX INFO page problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04 NOTE: ETA and ALT not applicable to FMCs with LNAV/VNAV configuration.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 61 XL --	34 61 XL -- thru 34 61 XP -- Not used.
34 61 XQ --	1. (01=Capt, 02=F/O, 03=Both) A CDU PROGRESS page problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions) 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04 <u>NOTE</u>: Forecast FUEL, forecast ETAs for intermediate waypoints, TO T/C predictions not applicable to FMCs with LNAV/VNAV configuration.
34 61 XR --	1. (01=Capt, 02=F/O, 03=Both) A CDU alert and advisory message problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04
34 61 XS --	1. (01=Capt, 02=F/O, 03=Both) An EHSI map general problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04
34 61 XT --	1. (01=Capt, 02=F/O, 03=Both) An EHSI map data problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04
34 61 XU --	Not used.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 61 XV --	1. (01=Capt, 02=F/O, 03=No. 1, 04=No. 2, 05=Both) A VNAV mode EPR and airspeed bug problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04
34 61 XW --	1. (01=Capt, 02=F/O, 03=No. 1, 04=No. 2, 05=Both) An FMC-V NAV Mode N1/EPR and airspeed bug problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions.) 2. SSM 34-60-01,SSM 34-60 -02, SSM 34-61-01 thru SSM 34-61-04
34 61 XX --	Not used.
34 61 XY --	1. (01=Capt, 02=F/O, 03=Both) An FMC LNAV and VNAV problem was encountered by the flight crew which is not covered in the fault code diagrams. (Ref fault code diagram for flight crew actions). 2. SSM 34-60-01, SSM 34-60-02, SSM 34-61-01 thru SSM 34-61-04
34 90 XA 00	1. A lightning strike occurred which was not covered in the fault code diagrams (Ref fault code diagrams for flight crew action). 2. Make an inspection of the airplane for lightning strike or severe static discharge (AMM 05-51-19/201).
34 11 04 00	1. Standby altimeter and standby airspeed (report the problem, low, high, fluctuates, etc.). 2. FIM 34-11-00/101, Fig. 105, Block 1
34 12 01 01	1. BARO SET INOP on captain's altimeter. 2. Replace the captain's altimeter, N8 (AMM 34-13-01/401).
34 12 02 01	1. Capt altimeter in error. It reads _____. F/O altimeter reads _____. Stby altimeter reads _____. Selecting ALTN AIR DATA corrects the fault. 2. FIM 34-12-00/101, Fig. 104, Block 1
34 12 03 01	1. Capt altimeter in error with both normal and ALTN AIR DATA selected. It reads _____. F/O altimeter reads _____. Stby altimeter reads _____. 2. Replace the captain's altimeter, N8 (AMM 34-13-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 12 04 02	1. BARO SET INOP on F/O's altimeter. 2. Replace the F/O's altimeter, N48 (AMM 34-13-01/401)
34 12 05 02	1. F/O altimeter in error. It reads _____. Capt altimeter reads _____. Stby altimeter reads _____. Selecting ALTN AIR DATA corrects the fault. 2. FIM 34-12-00/101, Fig. 104, Block 1
34 12 06 02	1. F/O altimeter in error with both normal and ALTN AIR DATA selected. It reads _____. Capt altimeter reads _____. Stby altimeter reads _____. 2. Replace the F/O's altimeter, N48 (AMM 34-13-01/401).
34 12 07 --	1. (01=Capt, 02=F/O) Altimeter sticking. 2. Replace the applicable altimeter, N8 (captain) or N48 (F/O) (AMM 34-13-01/401).
34 12 08 --	1. OFF flag in view on (01=Capt, 02=F/O) altimeter. Selecting ALTN air data corrects the fault. 2. FIM 34-12-00/101, Fig. 105, Block 1
34 12 09 --	1. Off flag in view on (01=Capt, 02=F/O) altimeter with both NORMAL and ALTN AIR DATA selected. 2. Replace the applicable altimeter, N8 (captain) or N48 (F/O) (AMM 34-13-01/401).
34 12 10 00	1. TAT indicator blank. TAS and SAT normal. 2. Replace the TAT probe (AMM 34-12-02/401).
34 12 11 00	34 12 11 00 thru 34 12 13 00 Not used.
34 12 14 00	1. TAS in error. Reads _____, should be _____. SAT normal. 2. FIM 34-12-00/101, Fig. 109, Block 1
34 12 15 00	1. TAS and SAT in error. TAS reads _____, should be _____. SAT reads _____, should be _____. Mach and TAT norm. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 16 00	1. TAS, SAT and Mach in error. TAS reads _____, SAT reads _____. Mach reads _____. TAT is normal. 2. FIM 34-12-00/101, Fig. 107, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 12 17 --	34 12 17 -- thru 34 12 20 -- Not used.
34 12 21 --	1. (O1=Capt, O2=F/O) AS in error. Capt's AS reads _____. F/O AS reads _____. Stby AS reads _____. ALTN AIR DATA selection corrects the fault. 2. FIM 34-12-00/101, Fig. 110, Block 1
34 12 22 --	1. (O1=Capt, O2=F/O) AS in error. Capt's AS reads _____. F/O's AS reads _____. Stby AS reads _____. ALTN AIR DATA selection fails to correct fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 12 23 --	1. (O1=Capt, O2=F/O) Mach indication in error. Capt's Mach reads _____. F/O Mach reads _____. ALTN AIR DATA selection corrects the fault. 2. FIM 34-12-00/101, Fig. 110, Block 1
34 12 24 --	1. (O1=Capt, O2=F/O) Mach indication in error. Capt's Mach reads _____. F/O Mach reads _____. ALTN AIR DATA selection fails to correct fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 12 25 --	34 12 25 -- thru 34 12 26 -- Not used.
34 12 27 --	1. (O1=Capt, O2=F/O) AS and Mach in error. Readings are: Capt AS _____, F/O AS _____, Stby AS _____, Capt Mach _____, F/O Mach _____. ALTN AIR DATA corrects the fault. 2. FIM 34-12-00/101, Fig. 110, Block 1
34 12 28 --	1. (O1=Capt, O2=F/O) AS and Mach in error. Readings are: Capt AS _____, F/O AS _____, Stby AS _____, Capt Mach _____, F/O Mach _____. ALTN AIR DATA fails to correct the fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 12 29 --	1. (O1=Capt, O2=F/O) SPD flag in view. ALTN AIR DATA selection corrects the fault. 2. FIM 34-12-00/101, Fig. 108, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 12 30 --	1. (O1=Capt, O2=F/O) SPD flag in view. ALTN AIR DATA selection fails to correct fault. 2. FIM 34-22-00/101, Fig. 108, Block 1
34 12 31 --	1. (O1=Capt, O2=F/O) MACH flag in view. ALTN AIR DATA selection corrects the fault. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 32 --	1. (O1=Capt, O2=F/O) MACH flag in view. ALTN AIR DATA selection fails to correct fault. 2. FIM 34-12-00/101, Fig. 109, Block 1
34 12 33 -- thru 34 12 37 --	Not used.
34 12 38 --	1. (O1=Capt, O2=F/O) Altm fails to read 10,000 ft during ADC test. Test OK with ALTN AIR DATA selected. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 39 --	1. (O1=Capt, O2=F/O) Altn fails to read 10,000 ft during ADC test with normal or ALTN AIR DATA selected. 2. Replace the applicable altimeter, N8 (captain) or N48 (F/O) (AMM 34-13-01/401).
34 12 40 --	1. (O1=Capt, O2=F/O) Altn OFF flag fails to appear during ADC test. Test OK with ALTN AIR DATA selected. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 41 --	1. (O1=Capt, O2=F/O) Altn OFF flag fails to appear during ADC computer test with normal or ALTN AIR DATA selected. 2. Replace the applicable altimeter, N8 (captain) or N48 (F/O) (AMM 34-13-01/401).
34 12 42 --	1. (O1=Capt, O2=F/O) Altn OFF flag fails to appear and altn fails to read 10,000 ft during test. Test OK with ALTN AIR DATA selected. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 12 43 --	1. (O1=Capt, O2=F/O) Altn OFF flag fails to appear and altn fails to read 10,000 ft during test with normal or ALTN AIR DATA selected. 2. Replace the applicable altimeter, N8 (captain) or N48 (F/O) (AMM 34-13-01/401).
34 12 44 --	1. (O1=Capt, O2=F/O) Airspeed fails to read 137 KIAS during ADC test. Test OK with ALTN AIR DATA selected. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 45 --	1. (O1=Capt, O2=F/O) Airspeed fails to read 137 KIAS during ADC test with normal or ALTN AIR DATA selected. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 12 46 --	34 12 46 -- thru 34 12 61 -- Not used.
34 12 62 00	1. No response received to ADC test. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 63 00	1. TAS, SAT and TAT indications are blank. 2. FIM 34-12-00/101, Fig. 109, Block 1
34 12 64 00	1. TAS, SAT, and TAT in error. TAS reads _____, SAT reads _____, TAT reads _____. 2. FIM 34-12-00/101, Fig. 109, Block 1
34 12 65 --	34 12 65 -- thru 34 12 67 -- Not used.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 12 68 00	1. ADC Test of TAT +35C on EICAS (did not display, was blank, etc). 2. FIM 34-12-00/101, Fig. 109, Block 1
34 12 69 00	Not used.
34 12 70 --	1. (01=Capt, 02=F/O) altimeter fluctuates. Altimeter normal with ALTN AIR DATA selected. 2. FIM 34-12-00/101, Fig. 104, Block 1
34 12 71 --	1. (01=Capt, 02=F/O) altimeter fluctuates with normal or ALTN AIR DATA selected. 2. Replace the applicable altimeter, N8 (captain) or N48 (F/O) (AMM 34-13-01/401).
34 12 72 --	1. (01=Capt, 02=F/O) Altimeter baro indicator has uncommanded movement. 2. Replace the applicable altimeter, N8 (captain) or N48 (F/O) (AMM 34-13-01/401).
34 12 73 00	1. SAT indication blank. TAS and TAT normal. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 74 00	1. TAS indication blank. SAT and TAT normal. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 75 00	1. EICAS msg OVERSPEED displayed and OVSP lgt illum. Air-speed below limit. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 76 --	1. Selecting (01=Capt, 02=F/O) ALTN AIR DATA not norm. (Describe) 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 12 77 --	1. (01=Capt, 02=F/O) EADI speed tape (fluctuates, inop, etc.) ALTN AIR DATA selection corrects the fault. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 78 --	1. (01=Capt, 02=F/O) EADI speed tape (fluctuates, inop, etc.) ALTN AIR DATA selection fails to correct the fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 12 79 --	Not used.
34 12 80 00	1. EICAS message AILERON LOCKOUT did not display and AIL LOCK light did not illum during ADC test. 2. FIM 27-09-00/101, Fig. 106, Block 1.
34 12 81 --	1. (01=Capt, 02=F/O, 03=Capt & F/O) VSI did not display flag(s) during ADC test. Test OK with ALTN AIR DATA selected. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 82 --	1. (01=Capt, 02=F/O, 03=Capt & F/O) VSI did not display flag(s) during ADC test with norm or ALTN AIR DATA selected. 2. Replace the applicable vertical speed indicator, N9 (captain) or N49 (F/O) (AMM 34-22-06/401).
34 12 82 --	1. (01=Capt, 02=F/O, 03=Capt & F/O) VSI did not display flag(s) during ADC test with norm or ALTN AIR DATA selected. 2. Replace the applicable vertical speed indicator, N9 (captain) or N49 (F/O) (AMM 34-22-09/401).
34 12 83 --	1. (01=Capt, 02=F/O) SPD and MACH flags fail to appear during ADC test. Test ok with ALTN AIR DATA selected. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).
34 12 84 --	1. (01=Capt, 02=F/O) SPD and MACH flags fail to appear during ADC test with normal or ALTN AIR DATA selected. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 12 85 --	1. (01=Capt, 02=F/O) SPD, MACH and ALTM off flags fail to appear during ADC test. 2. Replace the applicable air data computer, M100 (left) or M101 (right) (AMM 34-12-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 12 86 --	1. (01=Capt, 02=F/O) EADI speed tape faulty (describe) with normal or ALTN EFI selected. 2. FIM 34-12-00/101, Fig. 109, Block 1, if the problem continues, perform FIM 34-22-00/101, Fig. 108, Block 1
34 12 87 --	1. (01=Capt, 02=F/O) SPD flag and Altm OFF flag in view. ALTN AIR DATA selection corrects fault. 2. FIM 34-12-00/101, Fig. 108, Block 1
34 12 91 00	1. The EICAS message ALT DISAGREE (caution) is displayed. 2. FIM 34-12-00/101, Fig. 104
34 12 92 00	1. The EICAS message IAS DISAGREE (caution) is displayed. 2. FIM 34-12-00/101, Fig. 104
34 13 01 00	1. Standby Altimeter (Report the problem, low, high, sticks, fluctuates, vibrates, INOP, etc.). 2. Replace the standby altimeter, N23 (AMM 34-13-06/401).
34 13 02 00	1. Standby airspeed (Report the problem, low, high, sticks, fluctuates, etc.). 2. FIM 34-13-00/101, Fig. 103, Block 1
34 16 01 00	34 16 01 00 thru 34 16 06 00 Not used.
34 16 07 04	1. No master CAUTION Lgt on Capt's side when ALT ALERT lgt illum. Other alt alert indications norm (Ref Chapter 22 fault code diagrams). 2. Examine and repair the circuit from burndy terminal TB241, pin YC3 to the captain's master CAUTION switch, pin 16 (WDM 34-16-11).
34 16 07 05	1. No master CAUTION Lgt on F/O's side when ALT ALERT lgt illum. Other alt alert indications norm (Ref Chapter 22 fault code diagrams). 2. Examine and repair the circuit from burndy terminal TB241, pin YC3 to the F/O's master CAUTION switch, pin 16 (WDM 34-16-11).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 16 07 06	1. No master CAUTION Lgt on Capt's or F/O's side when ALT ALERT lgt illum. Other alt alert indications norm (Ref Chapter 22 fault code diagrams). 2. FIM 31-51-00/101, Fig. 104, Block 1
34 16 08 --	1. No caution aural warning from (04=Capt, 05=F/O, 06=both Capt & F/O) speakers when ALT ALERT lgt illum. Other alt alert indication norm (Ref Chapter 22 fault code diagrams). 2. Replace the left siren/owl aural warning module, M999 (AMM 31-51-04/401).
34 16 09 00	1. No master CAUTION lgts or aural warning when ALT ALERT lgt illum. Other alt alert indications norm (Ref Chapter 22 fault code diagrams). 2. Replace the altitude alert module, M617 (AMM 34-16-01/401).
34 16 10 00	1. No ALT ALERT lgt or ALTITUDE ALERT EICAS msg when apl deviates more than 300' from alt selected on MCP (Ref Chapter 22 fault code diagrams). 2. FIM 34-16-00/101, Fig. 103, Block 1
34 16 11 00	1. No ALTITUDE ALERT EICAS msg when airplane deviates more than 300' from selected alt on MCP. Other alt alert indications norm (Ref Chapter 22 fault code diagrams). 2. FIM 34-16-00/101, Fig. 103, Block 1
34 16 12 00	1. No ALT ALERT lgt when apl deviates more than 300' from selected alt on MCP. ALTITUDE ALERT EICAS msg displayed (Ref Chapter 22 fault code diagrams). 2. FIM 34-16-00/101, Fig. 103, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 16 13 00	1. Capt & F/O altimeters ALT alert lgt (illum, extin) at wrong alt (note alt) (Ref Chapter 22 fault code diagrams). 2. FIM 34-16-00/101, Fig. 103, Block 1
34 16 14 --	1. (04=Capt, 05=F/O, 06=Both Capt and F/O) altimeter ALT lgt failed to illum in alert range (Ref Chapter 22 fault code diagrams). 2. FIM 34-16-00/101, Fig. 103, Block 1
34 21 01 --	1. (01=Capt, 02=F/O) RDMI heading card sticks. 2. Replace the applicable RDMI, N3 (captain) or N43 (F/O) (AMM 34-22-05/401).
34 21 02 --	1. (01=Capt, 02=F/O) RDMI and opposite EHSI heading in error. Capt's RDMI reads _____, F/O's RDMI reads _____, standby compass reads _____. OK on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 03 --	1. (01=Capt, 02=F/O) RDMI heading in error. Capt reads _____, F/O reads _____, standby compass reads _____. ALTN IRS doesn't correct. 2. Replace the applicable RDMI, N3 (captain) or N43 (F/O) (AMM 34-22-05/401).
34 21 04 --	1. (01=Capt, 02=F/O) RDMI heading flag in view. No IRS fault indication. 2. Replace the applicable RDMI, N3 (captain) or N43 (F/O) (AMM 34-22-05/401).
34 21 05 --	1. (01=Capt, 02=F/O) RDMI VOR and HDG flags in view. DIST (DME) normal. (L, R) IRS fault is indicated. Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 06 --	1. (O1=Capt, O2=F/O) RDMI VOR and HDG flags in view. DIST (DME) normal. Ok on ALTN IRS. 2. FIM 34-21-00/101, Fig. 103, Block 1
34 21 07 --	1. (O1=Capt, O2=F/O) RDMI VOR and HDG flags in view. DIST (DME) is blank. 2. Replace the applicable RDMI, N3 (captain) or N43 (F/O) (AMM 34-22-05/401).
34 21 08 --	1. (O1=Capt, O2=F/O) Vertical speed sticks. 2. Replace the applicable vertical speed indicator, N9 (left) or N49 (right) (AMM 34-22-06/401).
34 21 08 --	1. (O1=Capt, O2=F/O) Vertical speed sticks. 2. Replace the applicable vertical speed indicator, N9 (left) or N49 (right) (AMM 34-22-09/401).
34 21 09 --	1. (O1=Capt, O2=F/O) Vertical speed incorrect. Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 10 --	1. (O1=Capt, O2=F/O) Vertical speed incorrect. ALTN IRS doesn't correct. ALTN AIR DATA corrects. 2. FIM 34-21-00/101, Fig. 104A, Block 1
34 21 11 --	1. (O1=Capt, O2=F/O) Vertical speed OFF flag (VSI FAIL) in view. (L, R) IRS fault indicated. Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 11 --	1. (O1=Capt, O2=F/O) Vertical speed OFF flag (VSI FAIL) displayed. (L, R) IRS fault indicated. Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 12 --	1. (O1=Capt, O2=F/O) Vertical speed OFF flag (VSI FAIL) displayed. ALTN AIR DATA corrects. 2. FIM 34-21-00/101, Fig. 104A, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 13 --	1. (O1=Capt, O2=F/O) EHSI track in error. Capt track _____, F/O track _____. Ok on ALTN IRS. 2. Replace the applicable IRU M159 (left) or M161 (right) (AMM 34-21-01/401). NOTE: Track error can be cause by marginal performance of the DME, FMC, or IRU systems.
34 21 14 --	1. (O1=Capt, O2=F/O) EHSI track in error. Capt track _____, F/O track _____. ALTN IRS doesn't correct. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401). NOTE: Track error can be cause by marginal performance of the DME, FMC, or IRU systems.
34 21 15 --	1. (O1=Capt, O2=F/O) EHSI track flag in view. IRS fault indicated. Ok on ALTN IRS. 2. Replace applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 16 --	1. (O1=Capt, O2=F/O) EHSI track flag in view. Ok on ALTN IRS. 2. Replace applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 17 --	1. (O1=Capt, O2=F/O) EHSI heading bug in error. Capt EHSI heading _____, F/O RDMI heading _____, standby compass heading _____. OK on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 18 --	1. (O1=Capt, O2=F/O) EHSI curved trend vector missing. IRS fault illum. OK on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 19 --	1. (O1=Capt, O2=F/O) EHSI curved trend vector missing. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 20 --	1. (O1=Capt, O2=F/O) EHSI heading bug missing. Opposite RDMI HDG normal. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 21 21 --	1. (O1=Capt, O2=F/O) EHSI heading bug missing. HDG and VOR flags in view on opposite RDMI. IRS fault illum. Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 22 --	1. (O1=Capt, O2=F/O) EHSI heading bug missing. HDG and VOR flags in view on opposite RDMI. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 23 --	1. (O1=Capt, O2=F/O) EADI ground speed in error. Capt ground speed reads _____, F/O ground speed reads _____. Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 24 --	1. (O1=Capt, O2=F/O) EADI ground speed in error. ALTN IRS doesn't correct. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 21 25 --	1. (O1=Capt, O2=F/O) EADI ground speed blank. (L,R) IRS fault indicated. Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 26 --	1. (O1=Capt, O2=F/O) EADI ground speed blank. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 21 27 --	1. (O1=Capt, O2=F/O) EADI pitch (describe problem: indicates excessive pitch, oscillates, drifts, etc). Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 28 --	1. (O1=Capt, O2=F/O) EADI pitch (describe problem: indicates excessive pitch, oscillates, drifts, etc). ALTN IRS doesn't correct. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 21 29 --	1. (O1=Capt, O2=F/O) EADI bank (describe problem: indicates excessive bank, oscillates, drifts, etc). Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 30 --	1. (O1=Capt, O2=F/O) EADI bank (describe problem: indicates excessive bank, oscillates, drifts, etc). ALTN IRS doesn't correct. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 21 31 --	1. (O1=Capt, O2=F/O) EADI ATT flag in view. (L, R) IRS fault indicated. Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 32 --	1. (O1=Capt, O2=F/O) EADI ATT flag in view. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 21 33 --	1. (O1=Capt, O2=F/O) EADI ATT flag in view and ground speed blank. (L, R) IRS fault indicated. Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 34 --	1. (O1=Capt, O2=F/O) EADI ATT flag in view and ground speed blank. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 21 35 --	1. (O1=Capt, O2=F/O) EADI ATT flag in view and ground speed blank. RDMI HDG flag, HSI TRK flag, and vert speed OFF flag also in view. (L, R) IRS fault indicated. Ok on ALTN IRS. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 36 --	Not Used.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 37 --	1. (01=L, 02=C, 03=R, 07=ALL) IRS indicate(s) IRS DC FAIL. 2. FIM 34-21-00/101, Fig. 105, Block 1.
34 21 38 --	1. (01=L, 02=C, 03=R, 07=ALL) IRS indicate(s) IRS ON DC. 2. FIM 34-21-00/101, Fig. 106, Block 1
34 21 39 --	1. During alignment (01=L, 02=C, 03=R) IRS indicated IRS FAULT. Selecting ATT extinguished FAULT. 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 40 --	1. During alignment (01=L, 02=C, 03=R) IRS indicated IRS FAULT. FAULT remained illum with ATT selected. 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 41 --	34 21 41 -- thru 34 21 42 -- Not used.
34 21 43 --	1. After alignment (01=L, 02=C, 03=R) IRS indicated IRS FAULT. Selecting ATT extinguished FAULT. 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 44 --	1. After alignment (01=L, 02=C, 03=R) IRS indicated IRS FAULT. FAULT remained illum with ATT selected. 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 45 --	1. (01=L, 02=C, 03=R, 04=L&C, 05=R&C, 06=L&R, 07=ALL) ALIGN flashed when pos entered and re-entered. 2. FIM 34-21-00/101, Fig. 105A, Block 1.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 46 --	1. (01=L, 02=C, 03=R, 04=L&C, 05=R&C, 06=L&R, 07=ALL) ALIGN flashed approx 10 min after align mode entered. IRS FAULT remained extin. 2. FIM 34-21-00/101, Fig. 105D, Block 1.
34 21 47 --	1. (01=L, 02=C, 03=R, 04=L&C, 05=R&C, 06=L&R, 07=ALL) ALIGN flashed approx 10 min after align entered. IRS FAULT illuminated when latitude was re-entered. 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 48 --	Not used.
34 21 49 --	1. ON DC failed to illum then extin on (01=L, 02=C, 03=R) IRS(s) when align initiated. 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 50 --	1. ALIGN failed to illum on (01=L, 02=R, 03=R) IRS(s) when align initiated. 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 51 --	1. ALIGN failed to extin on (01=L, 02=C, 03=R) IRS when NAV entered. NAV selected when turned on. 2. FIM 34-21-00/101, Fig. 105D, Block 1
34 21 52 --	1. ALIGN failed to illum then extin on (01=L, 02=C, 03=R) IRS when switched from NAV to ALIGN to NAV. 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 53 --	1. TK/GS display on IRS panel is inop from (01=L, 02=C, 03=R, 04=ALL) IRS system(s). 2. Replace the IRS panel, M59 (AMM 34-21-02/201).
34 21 54 --	1. PPOS display on IRS panel is inop from (01=L, 02=C, 03=R, 04=ALL) IRS system(s). 2. Replace the IRS panel, M59 (AMM 34-21-02/201).
34 21 55 --	1. WIND display on IRS panel is inop from (01=L, 02=C, 03=R, 04=ALL) IRS system(s). 2. Replace the IRS panel, M59 (AMM 34-21-02/201). 3. If Wind display(s) is blank on ground, then there is no fault.
34 21 56 --	1. HDG display on IRS panel is inop from (01=L, 02=C, 03=R, 04=ALL) IRS system(s). 2. Replace the IRS panel, M59 (AMM 34-21-02/201).
34 21 57 00	1. The number in (describe position) is (describe problem: segment missing, blank, cycling, etc) on IRS panel. 2. Replace the applicable incandescent display lamp(s) (AMM 34-21-02/201). If the problem continues, replace the IRS panel, M59 (AMM 34-21-02/201). If the problem is a floating decimal point, replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 57 --	1. (01=L, 02=R, 03=C) IRS residual position error excessive, (indicate NM error, time in nav & No. of flights). 2. Replace the L (C, R) IRU, M159 (M160, M161) (AMM 34-21-01/401).
34 21 58 --	1. All displays on IRS panel are inop from (01=L, 02=C, 03=R) IRS system(s). 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 58 04	1. All displays on IRS panel are inop from (04=ALL) IRS system(s). 2. Replace the IRS panel, M59 (AMM 34-21-02/201). 3. If the problem continues, examine and repair the interface circuit from the IRU (left: connector D367B, pins C10 and C11. center: connector D369B, pins C10 and C11. or right: connector D371B, pins C10 and C11) and the IRMP (left: connector D739, pins 24 and 25. center: connector D743, pins 24 and 25. or right: connector D741, pins 24 and 25) (WDM 34-21-11, (WDM 34-21-21, WDM 34-21-31).
34 21 59 00	1. (Describe key: 1, 2, 3, etc) key is inop on IRS panel. 2. Replace the IRS panel, M59 (AMM 34-21-02/201).
34 21 59 --	1. (01=L, 02=R, 03=C) IRS residual groundspeed error excessive, (indicate G.S. error, No. of flights). 2. Do the residual groundspeed error check (FIM 34-21-00/101). 3. Replace the L (C, R) IRU, M159 (M160, M161) (AMM 34-21-01/401).
34 21 60 00	1. All keys are inop on IRS panel. 2. Replace the IRS panel, M59 (AMM 34-21-02/201).
34 21 61 00	1. Align light flashes on all IRU annunciators, after second position was entered on IRS panel. 2. FIM 34-21-00/101, Fig. 105C, Block 1
34 21 62 --	1. (01=Capt, 02=F/O) RDMI, VOR and HDG flags in view. DIST normal. ALTN IRS doesn't correct. 2. Replace the applicable RDMI, N3 (captain) or N43 (F/O) (AMM 34-22-05/401).

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FAULT CODE	
	1. LOG BOOK REPORT
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34 21 63 --	1. (01=Capt, 02=F/0) EHSI heading bug in error. Capt EHSI heading _____, F/0 RDMI heading _____. Standby compass heading _____. ALTN IRS doesn't correct. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 21 64 --	1. (01=Capt, 02=F/0) EHSI track flag in view. ALTN IRS doesn't correct. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 21 65 --	1. Align light flashes on (01=L, 02=C, 03=R) IRS panel after second position entry from IRS panel. IRS pos entry from FMC-CDU ok. 2. FIM 34-21-00/101, Fig. 105B, Block 1
34 21 66 --	1. Align light flashes on (01=L, 02=C, 03=R) IRS panel after second position entry from IRS panel. IRS pos. entry from FMC-CDU unsuccessful. 2. FIM 34-21-00/101, Fig. 105A, Block 1
34 21 67 --	1. (01=Capt, 02=F/0) RDMI HDG flag in view. (L, R) IRS FAULT is indicated. 2. Replace the applicable IRU, M159 (left) or M161 (right) (AMM 34-21-01/401).
34 21 68 --	1. (01=Capt, 02=F/0) vertical speed incorrect. ALTN IRS doesn't correct. ALTN AIR DATA doesn't correct. 2. Replace the applicable vertical speed indicator, N9 (left) or N49 (right) (AMM 34-22-06/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 21 68 --	1. (01=Capt, 02=F/O) vertical speed incorrect. ALTN IRS doesn't correct. ALTN AIR DATA doesn't correct. 2. Replace the applicable vertical speed indicator, N9 (left) or N49 (right) (AMM 34-22-09/401).
34 21 69 --	1. (01=Capt, 02=F/O) Vertical speed OFF flag (VSI FAIL) displayed. ALTN AIR DATA doesn't correct. 2. FIM 34-21-00/101, Fig. 104, Block 1
34 21 70 --	1. After flight residual GS on (01=L, 02=C, 03=R) IRU is too high for two consecutive flights (record GS error per flight). 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 71 --	1. After flight PPOS on (01=L, 02=C, 03=R) IRU is in error, (record time IRS was in nav mode, actual and indicated latitude and longitude). Add note if IRS error was excessive for two consecutive flights. 2. FIM 34-21-00/101, Fig. 107A, Block 1
34 21 72 --	1. Selecting (01=Capt, 02=F/O) ALTN IRS not norm. (Describe). 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 73 --	34 21 73 -- thru 34 21 76 -- Not used.
34 21 77 --	1. (01=L, 02=C, 03=R) IRS inoperative. 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 21 78 00	1. ATT DISAGREE message displayed on EICAS. 2. FIM 34-21-00/101, Fig. 107, Block 1
34 21 79 --	1. RA off flag in view. 2. Replace the applicable vertical speed indicator, N9 (left) or N49 (right) (AMM 34-22-09/401).
34 22 01 --	1. (01=Capt, 02=F/O) EADI is blank. Selecting ALTN EFI corrects the fault. 2. FIM 34-22-00/101, Fig. 108, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 22 02 --	1. (01=Capt, 02=F/O) EADI is (blank, intermittent). Selecting ALTN EFI does not correct fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 03 --	1. (01=Capt, 02=F/O) EADI is out of focus. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 04 --	1. (01=Capt, 02=F/O) EADI sky/ground circle goes black intermittently. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 05 --	1. (01=Capt, 02=F/O) EADI sky/ground boundary is incorrect. Selecting ALTN EFI corrects the fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 06 --	1. (01=Capt, 02=F/O) EADI white horizon line is not aligned with the sky/ground line. Selecting ALTN EFI corrects the fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 07 --	1. (01=Capt, 02=F/O) EADI is distorted. Selecting ALTN EFI corrects the fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 08 --	1. (01=Capt, 02=F/O) EADI is distorted. Selecting ALTN EFI does not correct the fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 09 --	1. (01=Capt, 02=F/O) EADI sky and ground colors are offset. Selecting ALTN EFI corrects the faults. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 10 --	1. (01=Capt, 02=F/O) EADI (width, height) is incorrect. Selecting ALTN EFI corrects fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 22 11 --	1. (O1=Capt, O2=F/O) EADI (width, height) is incorrect. Selecting ALTN EFI does not correct fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 12 --	1. (O1=Capt, O2=F/O) EADI size and (linearity, brightness) changed. Selecting ALTN EFI corrects the fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 13 --	1. (O1=Capt, O2=F/O) EADI size and (linearity, brightness) changed. Selecting ALTN EFI does not correct the fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 14 --	1. (O1=Capt, O2=F/O) EADI is only one color. Selecting ALTN EFI corrects fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 15 --	1. (O1=Capt, O2=F/O) EADI is only one color. Selecting ALTN EFI does not correct fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 16 --	1. (O1=Capt, O2=F/O) EADI is wrong (color, intensity). Selecting ALTN EFI corrects the fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 17 --	1. (O1=Capt, O2=F/O) EADI is wrong (color, intensity). Selecting ALTN EFI does not correct fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 18 --	1. (O1=Capt, O2=F/O) EADI has a colored fringe on the display. 2. Replace the applicable EADI, N4 (captain) or N44 (F/O) (AMM 34-22-03/401).
34 22 19 --	1. (O1=Capt, O2=F/O) EADI color shade is off. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 20 --	1. (O1=Capt, O2=F/O) EADI manual brightness adjust is inop. 2. FIM 34-22-00/101, Fig. 105, Block 1
34 22 21 --	1. (O1=Capt, O2=F/O) EADI manual and auto brightness adjust are inop. 2. FIM 34-22-00/101, Fig. 105, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 22 22 --	1. (O1=Capt, O2=F/O) EHSI is (blank, intermittent). Selecting ALTN EFI corrects the fault. 2. FIM 34-22-00/101, Fig. 108, Block 1
34 22 23 --	1. (O1=Capt, O2=F/O) EHSI is (blank, intermittent). Selecting ALTN EFI does not correct fault. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 22 24 --	1. (O1=Capt, O2=F/O) EHSI is out of focus. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 22 25 --	Not used.
34 22 26 --	1. (O1=Capt, O2=F/O) EHSI is distorted. Selecting ALTN EFI corrects the fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 27 --	1. (O1=Capt, O2=F/O) EHSI is distorted. Selecting ALTN EFI does not correct the fault. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 22 28 --	1. (O1=Capt, O2=F/O) EHSI (width, height) is incorrect. Selecting ALTN EFI corrects the fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 29 --	1. (O1=Capt, O2=F/O) EHSI (width, height) is incorrect. Selecting ALTN EFI does not correct fault. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 22 30 --	1. (O1=Capt, O2=F/O) EHSI size and (linearity, brightness) changed. Selecting ALTN EFI corrects the fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 31 --	1. (O1=Capt, O2=F/O) EHSI size and (linearity, brightness) changed. Selecting ALTN EFI does not correct the fault. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 22 32 --	1. (O1=Capt, O2=F/O) EHSI is only one color. Selecting ALTN EFI corrects fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 22 33 --	1. (O1=Capt, O2=F/O) EHSI is only one color. Selecting ALTN EFI does not correct fault. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 22 34 --	1. (O1=Capt, O2=F/O) EHSI is wrong (color, intensity). Selecting ALTN EFI corrects the faults. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 35 --	1. (O1=Capt, O2=F/O) EHSI is wrong (color, intensity). Selecting ALTN EFI does not correct the fault. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 22 36 --	1. (O1=Capt, O2=F/O) EHSI has a colored fringe on the display. 2. Replace the applicable EHSI, N5 (captain) or N45 (F/O) (AMM 34-22-04/401).
34 22 37 --	1. (O1=Capt, O2=F/O) EHSI color shade is off. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 22 38 --	1. (O1=Capt, O2=F/O) EHSI manual brightness adjust is inop. 2. FIM 34-22-00/101, Fig. 107, Block 1
34 22 39 --	1. (O1=Capt, O2=F/O) EHSI manual and auto brightness adjust are inop. 2. FIM 34-22-00/101, Fig. 107, Block 1
34 22 40 --	1. (O1=Capt, O2=F/O) EADI and EHSI are blank. Selecting ALTN EFI corrects fault. 2. FIM 34-22-00/101, Fig. 108, Block 1
34 22 41 --	1. (O1=Capt, O2=F/O) EADI and EHSI displays are unintelligable. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 42 --	1. (O1=Capt, O2=F/O) EADI and EHSI have no lines on the displays. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 43 --	1. (O1=Capt, O2=F/O) EADI and EHSI lines are offset. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 22 44 --	1. (O1=Capt, O2=F/O) EHSI mode selector position doesn't correspond to HSI display. ILS mode displayed. DH and WX RADAR FAIL displayed. 2. Replace the applicable EFIS control panel, M94 (left) or M93 (right) (AMM 34-22-02/201).
34 22 45 --	1. (O1=Capt, O2=F/O) EHSI (NAV AID, APRT, RTE DATA, WPT) MAP feature switch(es) (describe fault). 2. Replace the applicable EFIS control panel, M94 (left) or M93 (right) (AMM 34-22-02/201).
34 22 46 --	1. (O1=Capt, O2=F/O) HSI RANGE selector (describe fault). 2. Replace the applicable EFIS control panel, M94 (left) or M93 (right) (AMM 34-22-02/201).
34 22 47 --	1. (O1=Capt, O2=F/O) sky/ground circle on EADI and WXR on EHSI go black. 2. FIM 34-22-00/101, Fig. 108, Block 1
34 22 48 --	1. Command bug(s) on (O1=Capt, O2=F/O, O3=both) EADI speed tape(s) disagree(s) with (MCP, FMS CDU). Bugs normal using ALTN EFI. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 49 --	1. Command Airspeed bug(s) (not normal, missing, etc) on (O1=Capt, O2=F/O) EADI speed tape(s). ALTN EFI selection corrects fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 50 --	1. V1, VR bug(s) (not normal, missing, etc) on (O1=Capt, O2=F/O, O3=both) EADI speed tape(s). ALTN EFI selection corrects fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 51 --	1. (O1=Capt, O2=F/O) EADI speed tape faulty (describe) ALTN EFI selection corrects fault. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 52 --	34 22 52 -- thru 34 22 69 -- Not used.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 22 70 --	1. (01=Capt, 02=F/O) EADI sky/ground boundry is incorrect. Selecting ALTN EFI doesn't correct fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 71 --	1. (01=Capt, 02=F/O) EADI white horizon is off the sky ground line. Selecting ALTN EFI does not correct fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 72 --	1. (01=Capt, 02=F/O) EADI sky and ground colors are offset. Selecting ALTN EFI does not correct fault. 2. FIM 34-22-00/101, Fig. 104, Block 1
34 22 73 --	1. (01=Capt, 02=F/O) EADI and EHSI are blank. Selecting ALTN EFI does not correct fault. 2. FIM 34-22-00/101, Fig. 108, Block 1
34 22 74 --	1. (01=Capt, 02=F/O) EADI auto brightness inop 2. FIM 34-22-00/101, Fig. 105, Block 1
34 22 75 00	1. No F/D initialization indicators displayed on captain's EADI with F/D source selector positioned to L. Condition remains same with selector at C; however, operation normal with alternate EFI selected. 2. Replace the left EFIS symbol generator, N148 (AMM 34-22-01/401).
34 22 76 00	1. No F/D initialization indications displayed on first officer's EADI with F/D source selector positioned to R. Condition remains same with selector at C; however, operation normal with alternate EFI selected. 2. Replace the right EFIS symbol generator, N150 (AMM 34-22-01/401).
34 22 77 --	1. (01=Capt, 02=F/O) EHSI auto brightness inop. 2. FIM 34-22-00/101, Fig. 107, Block 1
34 22 78 --	34 22 78 -- thru 34 22 79 -- Not used.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 22 86 --	1. (01=Capt, 02=F/0) slip indicator not centered. 2. Adjust the EADI inclinometer (AMM 34-22-00/201).
34 22 87 --	1. (01=Capt, 02=F/0, 3=Capt & F/0) HSI and (opposite side, both) RDMI failed to indicate change to true heading when (above 73°N, below 60°S). System normal with HDG REF SW in TRUE. 2. Replace the applicable IRU, M159 (left), M160 (center) or M161 (right) (AMM 34-21-01/401).
34 22 88 --	1. (01=Capt, 02=F/0, 03=Capt and F/0) HSI and (opposite side, both) RDMI failed to indicate change to true heading with HDG REF SW in TRUE. 2. Examine and repair or replace the HDG REF SW and related circuits (WDM 34-61-24).
34 22 89 --	1. Selecting (01=Capt., 02=F/0) ALTN EFI not norm. (Describe). 2. Examine and repair the applicable ALTN EFI switch and related circuits (WDM 34-22-17, WDM 34-22-27). NOTE: If there is an intermittent delay when you push the ALTN EFI switch, replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 90 --	1. DH flag displayed on the (01=Capt, 02=F/0) EADI. 2. FIM 34-22-00/101, Fig. 108, Block 1
34 22 91 --	1. Selecting (01=Capt., 02=F/0) ALTN FMC not norm. (Describe). 2. Examine and repair the applicable ALTN FMC switch and related circuits (WDM 34-22-17, WDM 34-22-27).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 22 92 --	1. (01=Capt., 02=F/O) EADI and EHSI are blank with SG FAIL message displayed in both indicators. Selecting ALTN EFI corrects fault. 2. FIM 34-22-00/101, Fig. 108, Block 1. If the problem continues, replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 22 93 --	1. Selecting (01=Capt, 02=F/O) ALTN IRS not norm. 2. Examine and repair the applicable ALTN IRS switch and related circuits (WDM 34-22-17, WDM 34-22-27)
34 22 94 --	1. (01=Capt, 02=F/O) EADI and EHSI displays intermittent. Displays normal on ALTN EFI. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401). If the problem continues, examine and repair the circuit between the integrated drive generator G19, terminal N and ground (WDM 24-21-11, WDM 24-21-21).
34 22 95 --	1. (01=Capt, 02=F/O) EADI and EHSI displays intermittent. Condition same on ALTN EFI. 2. FIM 34-22-00/101, Fig. 108, Block 1
34 23 01 00	1. Standby compass light inoperative. 2. Replace the bulb.
34 23 02 00	1. Standby compass heading incorrect. Reads _____, should read _____. 2. Do the standby compass calibration procedure (AMM 34-23-00/201).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 24 01 00	1. Standby attitude indicator lights inoperative. 2. Replace the standby attitude indicator, M20(AMM 34-24-01/201).
34 24 02 00	1. Standby attitude indicator attitude display abnormal (pitch, roll, etc.) and GYRO flag is out of view. 2. FIM 34-24-00/101, Fig. 103, Block 1
34 24 03 00	1. Standby attitude indicator GYRO flag is in view. 2. FIM 34-24-00/101, Fig. 103, Block 1
34 24 04 00	Not used.
34 24 05 00	1. Selection of ILS OFF does not retract ILS pointers. 2. FIM 34-31-00/101, Fig. 103, Block 1
34 25 01 00	1. COMPARATOR BITE message is displayed on EICAS. 2. FIM 34-22-00/101, Fig. 109, Block 1
34 31 01 --	1. ILS test response abnormal on (01=Capt EADI & EHSI, 02=F/O EADI & EHSI, 03=STBY ATT IND). Identify those test indications which were abnormal. 2. FIM 34-31-00/101, Fig. 104, Block 1
34 31 02 --	34 31 02 -- thru 34 31 31 -- Not used.
34 31 32 --	1. (L, R, C) ILS ident not received at (04=Capt, 05=F/O, 06=1st Obs) crew position. Deviation pointer display normal. 2. Replace the applicable audio selector panel, M70 (captain), M71 (F/O) or M98 (1st obs) (AMM 23-51-01/401).
34 31 33 --	1. (01=L, 02=R, 03=C) ILS ident not received at any crew position. Deviation pointer normal. 2. Replace the applicable ILS receiver, M156 (left), M157 (center) or M158 (right) (AMM 34-31-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 31 34 --	1. G/S flag in view on the (04=Capt, 05=F/0) EADI & EHSI. 2. Replace the applicable ILS receiver, M156 (left) or M158 (right) (AMM 34-31-01/401).
34 31 35 --	1. LOC flag in view on the (04=Capt, 05=F/0) EADI and EHSI. 2. Replace the applicable ILS receiver, M156 (left) or M158 (right) (AMM 34-31-01/401).
34 31 36 --	1. G/S and LOC flags in view on the (04=Capt, 05=F/0) EADI and EHSI. 2. FIM 34-31-00/101, Fig. 105, Block 1
34 31 37 --	1. Loc pointer or COURSE indicator not displayed on the (04=Capt, 05=F/0) EADI & EHSI. ILS ident not received. 2. FIM 34-31-00/101, Fig. 110, Block 1
34 31 38 --	1. G/S pointer not displayed on the (04=Capt, 05=F/0) EADI & EHSI. 2. FIM 34-31-00/101, Fig. 111, Block 1
34 31 39 --	1. G/S & Loc pointers or COURSE indicator not displayed on the (04=Capt, 05=F/0) EADI and EHSI. ILS ident not received. 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 40 07	1. G/S and LOC pointers not displayed on Capt or F/0's EADI and EHSI. 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 41 --	1. The deviation scales and COURSE bar(s) are missing on (04=Capt's, 05=F/0's, 07=Capt & F/0) EADI's. The pointers are not displayed on the corresponding EHSI. ILS ident received. 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 42 --	1. The deviation scales and COURSE bar(s) are missing on (04=Capt, 05=F/0, 07=Capt & F/0) EADI. The pointers are not displayed on the corresponding HSI. ILS ident not received. 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 43 --	1. (04=CAPT, 05=F/0) EADI and EHSI LOC pointer and COURSE indicator (Intermittent has reverse HDG, etc). 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 44 --	1. (01=L, 02=R, 03=C) ILS reception is weak. 2. Replace the applicable ILS receiver, M156 (left), M158 (center) or M157 (right) (AMM 34-31-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 31 45 --	1. LOC pointer or COURSE ind not displayed on the (O4=Capt, O5=F/O) EADI and EHSI. Displays were norm with ALTN EFI selected. 2. FIM 34-31-00/101, Fig. 103, Block 1
34 31 46 --	Not used.
34 31 47 --	1. ILS frequency displayed on the (O1=Capt, O2=F/O) EHSI disagrees with the frequency indicator. HSI reads _____. Control reads _____. 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 48 --	1. Selected course pointer display on the (O1=Capt, O2=F/O) EHSI disagrees with the course indicator. 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 49 00	1. F. CRS indicator does not respond to selector movement. 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 50 00	1. ILS FREQ indicator does not respond to selector movement. 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 51 00	1. G/S flag in view in the standby attitude indicator. 2. FIM 34-31-00/101, Fig. 107, Block 1
34 31 52 00	1. LOC flag in view in the standby attitude indicator. 2. FIM 34-31-00/101, Fig. 107, Block 1
34 31 53 00	1. G/S & LOC flags in view in the standby attitude indicator. 2. FIM 34-31-00/101, Fig. 107, Block 1
34 31 54 00	1. Localizer deviation pointer not displayed in the standby attitude indicator. ILS ident not received on center receiver. 2. Replace the right/center dual localizer antenna, M249 (AMM 34-31-04/401).
34 31 55 00	1. Glideslope deviation pointer never displayed in the standby attitude indicator. 2. FIM 34-31-00/101, Fig. 109, Block 1
34 31 56 00	1. Neither G/S nor LOC pointers displayed in the standby attitude indicator. 2. FIM 34-31-00/101, Fig. 108, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 31 57 00	1. The (glideslope, localizer) deviation pointer of the standby attitude indicator (fluctuates, sticks, etc). 2. Replace the standby attitude indicator, M20 (AMM 34-24-01/201).
34 31 58 00	1. ILS front CRS indicator has missing segment. 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 59 00	1. ILS FREQ. indicator has missing segment. 2. Replace the ILS control panel, M87 (AMM 34-31-02/401).
34 31 60 00	1. G/S has (false, late) capture. 2. FIM 34-31-00/101, FIG. 111A, Block 1.
34 32 01 00	34 32 01 00 thru 34 32 03 00 Not used.
34 32 04 00	1. Both MIDDLE marker lights fail to illuminate. 2. FIM 34-32-00/101, Fig. 103, Block 1
34 32 05 00	1. Both OUTER marker lights fail to illuminate. 2. FIM 34-32-00/101, Fig. 103, Block 1
34 32 06 00	1. All marker beacon lights fail to illuminate. Ident received. 2. FIM 34-32-00/101, Fig. 103, Block 1
34 32 07 00	1. All marker beacon lights fail to illuminate. Ident not received. 2. FIM 34-32-00/101, Fig. 103, Block 1
34 32 08 --	1. Marker beacon ident not received at (01=Capt, 02=F/O, 03=1st Obs) station. All other crew stations OK. Marker lgts OK. 2. Replace the applicable audio selector panel, M70 (captain), M71 (F/O) or M98 (1st observer) (AMM 23-51-01/401).
34 32 09 00	1. Marker beacon ident not received at any crew station. Marker lights are OK. 2. FIM 34-32-00/101, Fig. 103, Block 1
34 32 10 00	1. Both INNER/AIRWAYS marker lights fail to illuminate. 2. FIM 34-32-00/101, Fig. 103, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 32 11 00	1. All marker beacon lgts illum intermittently. Ident not received. 2. FIM 34-32-00/101, Fig. 103, Block 1
34 33 01 --	1. (01=Capt, 02=F/O) Decision height reference indicator does not respond to selector movement. 2. Replace the applicable EFIS control panel, M94 (left), or M93 (right) (AMM 34-22-02/201).
34 33 02 --	1. (01=Capt, 02=F/O) DH reset SW does not reset decision height on the display. Operation normal with ALTN EFI selected. 2. Replace the applicable EFIS control panel, M94 (left), or M93 (right) (AMM 34-22-02/201).
34 33 03 --	1. (01=Capt, 02=F/O) DH reset SW does not reset decision height on the display. Condition remains the same with ALTN EFI selected. 2. Replace the applicable EFIS control panel, M94 (left), or M93 (right) (AMM 34-22-02/201).
34 33 04 --	Not used.
34 33 05 --	Not used.
34 33 06 --	1. Decision height alert altitude on (01=Capt, 02=F/O) EADI disagrees with decision height reference indicator. Operation normal with alternate EFI selected. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401, EFIS).
34 33 07 --	1. Decision height alert altitude on (01=Capt, 02=F/O) EADI disagrees with decision height reference indicator. Condition remains the same with alternate EFI selected. 2. Replace the applicable EFIS control panel, M94 (left) or M93 (right) (AMM 34-22-02/201).
34 33 08 --	1. Rad alt on the (01=Capt, 02=F/O) EADI is blank below 2500 feet AGL. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 33 09 --	1. (Selected decision height not displayed, "DH" not displayed, display color incorrect, etc) on (01=Capt, 02=F/O) EADI for radio alt between DH and 999 ft. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 33 10 --	1. Display did not (flash/change color, etc) on (01=Capt, 02=F/O) EADI at decision height. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 33 11 --	1. Radio altitude height on the (01=Capt, 02=F/O) EADI is inaccurate. (State amount of inaccuracy, if known.) 2. FIM 34-33-00/101, Fig. 103, Block 1
34 33 12 --	1. Decision height display on the (01=Capt, 02=F/O) ADI did not reset (automatically, etc). 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 33 13 --	1. RA flag displayed (steady, intermittent) on the (01=Capt, 02=F/O) EADI. 2. FIM 34-33-00/101, Fig. 104, Block 1
34 33 14 --	34 33 14 -- thru 34 33 25 -- Not used.
34 33 22 --	1. Radio alt display incorrect on (01=Capt, 02=F/O) EADI for rad alt above 999 ft. (Describe problem). 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 33 23 --	1. Radio alt display on (01=Capt, 02=F/O) EADI did not change at 999 ft. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 33 24 00	1. DH alert tone sounded 1 beep at DH +50. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 33 25 --	1. Radio alt display on (01=Capt, 02=F/0) EADI incorrect for rad alt below 999 ft. (Describe problem). 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 33 26 --	1. (01=Capt, 02=F/0) radio alt intermittent on the EADI. Cond normal with ALTN EFI selected. 2. Replace the applicable EFIS symbol generator, M148 (left) or M150 (right) (AMM 34-22-01/401).
34 33 27 --	1. (01=Capt, 02=F/0) radio alt intermittent on the EADI. Cond same with ALTN EFI selected. 2. FIM 34-33-00/101, Fig. 103, Block
34 43 01 --	1. WXR FAIL displayed on HSI with (01= L, 02= R, 05= BOTH) system(s) selected. WXR test displays WXR FAIL WEAK on HSI. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 02 --	1. WXR FAIL displayed on HSI with (01= L, 02= R, 05=BOTH) system(s) selected. WXR test displays WXR FAIL STAB on HSI. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 03 --	1. WXR FAIL displayed on HSI with (01= L, 02= R) system selected. WXR test not attempted. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 04 00	Not used.
34 43 05 --	1. WXR FAIL displayed on HSIs with (01=L, 02=R) system selected. WXR test displays WXR FAIL RT on HSI. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 06 --	1. WXR FAIL displayed on HSI with (01=L, 02=R, 05=Both) system(s) selected. WXR test displays WXR FAIL ANT on HSI. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 07 --	1. WXR FAIL displayed on HSI with (01= L, 02= R, 05=BOTH) system(s) selected. WXR test displays WXR FAIL CONT on HSI. 2. FIM 34-43-00/101, Fig. 103, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 43 08 --	1. WXR RANGE DISAGREE displayed on (03=CAPT, 04=F/O, 05=BOTH) HSI(s). 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 09 --	1. WXR/MAP RANGE DISAGREE displayed on (03=CAPT, 04=F/O, 05=BOTH) HSI(s). 2. Replace the applicable EFIS control panel, M94 (captain) or M93 (F/O) (AMM 34-22-02/201).
34 43 10 --	1. WXR DSPY displayed on (03=CAPT, 04=F/O, 05=BOTH) HSI(s). 2. FIM 34-22-00/101, Fig. 106, Block 1 (EFIS).
34 43 11 --	1. (03=CAPT, 04=F/O, 05=BOTH) weather radar switch does not (activate, deactivate) radar. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 12 00	1. WXR ON switch does not (activate, deactivate) radar with either system selected. 2. Examine and repair the circuit from the captain's EFIS control panel M94, connector D469, pins 14 and 16; F/O's EFIS control panel M93, connector D471, pins 14 and 16; to the WXR control panel M75, connectors D395, pin G and D495, pin G (WDM 34-43-11, WDM 34-43-12, WDM 34-43-21, WDM 34-43-22).
34 43 13 --	1. Antenna tilt (describe Fault: inoperative, etc) with (01=L, 02=R, 03=Both) system(s) selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 14 00	1. Antenna tilt operation is (Describe fault; inop, etc.) with either system selected. 2. Replace the weather radar control panel, M75 (AMM 34-43-02/401).
34 43 15 00	Not used.
34 43 16 00	Not used.
34 43 17 --	1. WX radar mode switch (describe fault: inoperative, etc.) with (01=L, 02=R, 03=Both) system(s) selected. 2. FIM 34-43-00/101, Fig. 103, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 43 18 00	1. WXR mode switch (describe fault: INOP, etc) with either system selected. 2. Replace the weather radar control panel, M75 (AMM 34-43-02/401).
34 43 19 --	1. WXR gain control inoperative in _____ mode with (01=L, 02=R, 03=Both) system(s) selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 20 00	1. GAIN control (describe fault: INOP, etc) with either system selected. 2. Replace the weather radar control panel, M75 (AMM 34-43-02/401).
34 43 21 --	1. WXR ATT displayed on EHSI with (01=SYS L, 02=SYS R) selected. WXR test displays WXR FAIL ATT. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 22 --	34 43 22 -- thru 34 43 35 -- Not used.
34 43 25 00	1. WXR indicator range control (Describe fault: inop, etc). 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 26 00	1. WXR indicator brightness control (describe fault: inop, etc). 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 36 00	1. Weather radar system select switch (describe fault: INOP, etc). 2. Replace the weather radar control panel, M75 (AMM 34-43-02/401). If the problem continues, replace the RF relay (switch) assembly, S36 (WDM 34-43-22).
34 43 37 00	Not used.
34 43 38 00	1. Fault msg COOL displayed on WXR indicator. 2. FIM 34-43-00/101, Fig. 103, Block 5

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 43 39 --	1. WXR FAIL displayed on HSI with (O1= L, O2= R) system selected. WXR test inoperative. 2. Replace the weather radar control panel, M75 (AMM 34-43-02/401).
34 43 40 00	34 43 40 00 thru 34 43 44 00 Not used.
34 43 46 00	1. WXR FAIL displayed on EHSI with either system selected. WXR test INOP on both systems. 2. Replace the weather radar control panel, M75 (AMM 34-43-02/401).
34 43 47 --	1. Spoking present on HSI WXR display with (O1= L, O2= R, O3=BOTH) system(s) selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 48 00	1. Spoking present on EHSI WXR display with either system selected. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 43 49 --	1. Sweep (describe fault: missing, sticks, etc) on HSI WXR display with (O1= L, O2= R, O3=BOTH) system(s) selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 50 00	1. Sweep (describe fault: missing, sticks, etc) on EHSI WXR display with either system selected. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 43 51 --	1. Returns (describe fault: fixed, noisy, false, etc) on HSI WXR display with (O1= L, O2= R, O3=BOTH) system(s) selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 52 00	1. Returns (describe fault: fixed, noisy, false, etc) on EHSI WXR display with either system selected. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 43 53 --	1. Precip intensity too (strong, weak) on HSI WXR display with (O1= L, O2= R, O3=BOTH) system(s) selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 54 00	1. Precip intensity too (strong, weak) on EHSI WXR display with either system selected. 2. FIM 34-22-00/101, Fig. 106, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 43 55 --	1. WXR display on HSI is missing with (01= L, 02= R,03=BOTH) system(s) selected. 2. FIM 34-22-00/101, Fig. 106, Block 1
34 43 56 00	1. WXR display on EHSI is missing with either system selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 57 00	34 43 57 00 thru 34 43 64 00 Not used.
34 43 65 --	1. (01=L, 02=R) WXR system failed to test. WXR TEST did not display on HSI. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 66 --	1. WXR FAIL displayed on HSI with (01=L, 02=R, 05=both) system(s) selected. WXR test displays WXR FAIL ATT on HSI. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 67 --	1. WXR WEAK displayed on HSI with (01=L, 02=R) system selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 71 --	1. WXR STAB displayed on HSI with (01=L, 02=R) system selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 74 --	1. WXR ATT displayed on HSI with (01=L, 02=R) system selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 76 --	1. (03=Capt, 04=F/O, 05=Both) weather radar switch doesn't activate radar. WXR DSPY message is on HSI. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 77 00	1. L or R WXR system failed to test. WXR TEST did not display on HSI. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 78 00	1. WXR WEAK displayed on EHSI with either system selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 79 00	1. WXR STAB displayed on EHSI with either system selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 80 00	1. WXR ATT displayed on EHSI with either system selected. 2. FIM 34-43-00/101, Fig. 103, Block 1
34 43 87 00	1. R/T FAULT displayed on wxr indicator during test. 2. Replace the applicable weather radar transceiver, M213 (left) or M214 (right) (AMM 34-43-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 43 88 00	1. ANT FAULT displayed on wxr indicator during test. 2. Replace the applicable weather radar transceiver, M213 (left) or M214 (right) (AMM 34-43-01/401).
34 43 89 00	1. CON FAULT displayed on wxr indicator during test. 2. Replace the WXR control panel, M75 (AMM 34-43-02/401).
34 43 90 00	1. ATT FAULT displayed on wxr indicator during test. 2. Replace the applicable weather radar transceiver, M213 (left) or M214 (right) (AMM 34-43-01/401).
34 43 91 00	1. IND FAULT displayed on wxr indicator during test. 2. Replace the weather radar indicator, N110 (AMM 34-43-06/201).
34 43 92 00	1. COOL FAULT displayed on wxr indicator during test. 2. FIM 34-22-00/101.
34 45 07 --	1. (01=Capt, 02=F/O) resolution advisories abnormal. 2. FIM 34-45-00/101, Fig. 103, Block 1
34 45 08 --	1. (01=Capt, 02=F/O) TA FAIL displayed. 2. FIM 34-45-00/101, Fig. 103, Block 1
34 45 09 --	1. (01=Capt, 02=F/O) RA FAIL displayed. 2. FIM 34-45-00/101, Fig. 103, Block 1
34 46 01 00	34 46 01 00 thru 34 46 20 00 Not used.
34 46 21 00	1. GND PROX BITE status message displayed on EICAS. 2. FIM 34-46-00/101, Fig. 103, Block 1
34 46 22 00	1. The (PULL UP, GND PROX, WINDSHEAR) light did not illuminate when (specify alert condition) existed. 2. FIM 34-46-00/101, Fig. 104, Block 1
34 46 23 00	1. The aural message for (specify alert condition) was not announced. 2. FIM 34-46-00/101, Fig. 104, Block 1
34 46 24 00	1. A GND PROX alert was received with no alert condition (state sink rate, radio altitude, landing or ascending, gear and flap state if known). 2. FIM 34-46-00/101, Fig. 103, Block 1
34 46 25 00	1. A PULL UP alert was received with no alert condition (state sink rate, radio altitude, landing or ascending, gear and flap state, if known). Radio Altimeter indication was normal. 2. FIM 34-46-00/101, Fig. 103, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 46 26 00	1. A WINDSHEAR alert was received with no alert condition. 2. If the windshear light stays on, examine and repair the circuit from the GPWC M147, connector D4358, pin A12 to the windshear light L890, pin 2. If the light does not stay on, the alert was a nuisance indication.
34 46 27 00	1. GND PROX BITE was not displayed on EICAS status page during GND PROX test. 2. FIM 34-46-00/101, Fig. 104, Block 1
34 46 28 00	1. PULL UP light did not illuminate during GND PROX test. 2. FIM 34-46-00/101, Fig. 104, Block 1
34 46 29 00	1. GND PROX light did not illuminate during GND PROX test. 2. FIM 34-46-00/101, Fig. 104, Block 1
34 46 30 00	1. The (sink rate, whoop-whoop pull up, terrain, don't sink, too low gear, too low flaps, too low terrain, glideslope, minimum, windshear) aural message(s) was not announced during test. (State whether test switch was momentarily positioned to GND PROX or held there for more than 5 seconds.) 2. FIM 34-46-00/101, Fig. 104, Block 1
34 46 31 00	1. The ground proximity warning system failed to test. 2. FIM 34-46-00/101, Fig. 103, Block 1
34 46 32 00	1. The GND PROX/CONFIG GEAR OVRD SW didn't inhibit (TOO LOW TERRAIN, TOO LOW GEAR) ground prox alert. 2. FIM 34-46-00/101, Fig. 103, Block 1. If the problem continues, examine the circuit from the terminal block TB119, pin G17, through the GND PROX/CONFIG GEAR OVRD switch, S604, to ground (WDM 34-46-12).
34 46 33 00	1. The GND PROX FLAP OVRD SW did not inhibit (TOO LOW TERRAIN, TOO LOW FLAP) ground prox alert. 2. FIM 34-46-00/101, Fig. 103, Block 1 If the problem continues, examine the circuit from the terminal block TB119, pin G19, through the GND PROX/CONFIG GEAR OVRD switch, S604, to ground (WDM 34-46-12).
34 46 34 00	1. The G/S INHB sw did not inhibit G/S alert. 2. FIM 34-46-00/101, Fig. 103, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 46 35 00	34 46 35 00 thru 34 46 36 00 Not used.
34 46 37 00	1. EICAS msg GND PROX BITE displayed (Ref Chapter 31 for Fault Code Diagram). 2. FIM 34-46-00/101, Fig. 103, Block 1
34 46 38 00	1. A (GND PROX, PULL UP) alert was not received when (specify alert condition) existed. 2. FIM 34-46-00/101, Fig. 103, Block 1
34 46 39 00	1. WINDSHEAR lgt did not illum or ADI msg display during gnd prox test. 2. FIM 34-46-00/101, Fig. 104, Block 1
34 46 40 00	1. Voice altitude callouts too loud. 2. FIM 34-46-00/101, Fig. 104, Block 1
34 51 01 --	34 51 01 -- thru 34 51 20 -- Not used.
34 51 21 --	1. (03=L, 04=R) VOR course indicator on glareshield does not respond properly to selector operation. 2. Replace the applicable VOR control panel, M91 (left) or M92 (right) (AMM 34-51-02/201).
34 51 22 --	1. (03=L, 04=R) VOR FREQ display does not respond properly to selector operation. 2. FIM 34-51-00/101, Fig. 108, Block 1
34 51 23 --	1. (01=Capt, 02=F/O) EHSI has VOR flag in view. RDMI VOR bearing needles are normal. 2. FIM 34-51-00/101, Fig. 106, Block 1
34 51 24 --	1. (01=Capt, 02=F/O) EHSI has course pointer, line and dev bar missing. RDMI VOR bearing needles are normal. 2. Replace the applicable VOR control panel, M91 (left) or M92 (right) (AMM 34-51-02/201).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 51 25 --	1. Unable to select (L, R) VOR with VOR/ADF selector on (01=Capt, 02=F/O) RDMI. 2. Replace the applicable RDMI, N3 (left) or N43 (right) (AMM 34-22-05/401).
34 51 26 --	1. (L, R) Brg flag in view on (01=Capt, 02=F/O) RDMI. The associated HSI VOR indications are normal. HSI is in VOR mode. 2. Replace the applicable RDMI, N3 (left) or N43 (right) (AMM 34-22-05/401).
34 51 27 --	1. (03=L, 04=R) Brg flag in view on both RDMI's. The associated EHSI has VOR flag in view when the EHSI is in VOR mode. 2. FIM 34-51-00/101, Fig. 107, Block 1
34 51 28 --	1. (03=L, 04=R) Brg flag in view on both RDMI's. The associated EHSI has the lateral dev bar missing when the EHSI is in VOR mode. The freq display on the VOR is normal. 2. FIM 34-51-00/101, Fig. 109, Block 1
34 51 29 --	1. (03=L, 04=R) Brg flag in view on both RDMI's. The associated EHSI has the lateral dev bar missing when the EHSI is in VOR mode. The freq display on the VOR is inop. 2. FIM 34-51-00/101, Fig. 104, Block 1
34 51 30 --	1. (03=L, 04=R) Brg flag in view on both RDMI's. The associated EHSI has course pointer, line and dev bar missing. 2. Replace the applicable VOR control panel, M91 (left) or M92 (right) (AMM 34-51-02/201).
34 51 31 --	1. VOR radial not displayed on (01=Capt, 02=F/O, 05=Both) EHSI's with EHSI in map and manual turning selected. 2. Replace the applicable VOR control panel, M91 (left) or M92 (right) (AMM 34-51-02/201).
34 51 32 --	1. (01=Capt, 02=F/O) VOR AUTO/MAN select sw (stuck in (Auto,Man) position, will not stay in, etc). 2. Replace the applicable VOR control panel, M91 (left) or M92 (right) (AMM 34-51-02/201).
34 51 33 --	1. (03=L, 04=R, 05=Both) Brg flags in view on both RDMI's with EHSI's in MAP. VOR's are normal with HSI's in VOR mode. 2. FIM 34-51-00/101, Fig. 105, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 51 34 --	1. (L, R) VOR ident not received at (01=Capt, 02=F/O, 03=1st Obs) station. Other crew stations OK. 2. Replace the applicable audio selector panel, M70 (captain), M71 (F/O) or M98 (1st observer) (AMM 23-51-01/401).
34 51 35 --	1. (04=L, 05=R) VOR ident not received at any crew station. 2. Replace the applicable VOR receiver, M186 (left) or M187 (right) (AMM 34-51-01/401).
34 51 36 --	1. (L, R) VOR bearing points on (01=Capt, 02=F/O) RDMI (describe fault, sticks, inop, etc.) 2. Replace the applicable RDMI, N3 (left) or N43 (right) (AMM 34-22-05/401).
34 51 37 --	1. (01=Capt, 02=F/O) VOR Auto/Man select sw light (inop, always dim, etc). 2. Replace the applicable VOR Auto/Man select switch lamps (AMM 34-51-02/201). If the problem continues, replace the applicable VOR control panel, M91 (left) or M92 (right) (AMM 34-51-02/201).
34 51 38 --	34 51 38 -- thru 34 51 39 -- Not used.
34 51 40 --	1. (03=L, 04=R, 05=Both) VOR(S) will not autotune. 2. Replace the applicable VOR control panel, M91 (left) or M92 (right) (AMM 34-51-02/201).
34 51 41 --	1. (03=L, 04=R) VOR CRS indicator on glareshield has missing segment. 2. Replace the applicable VOR control panel, M91 (left) or M92 (right) (AMM 34-51-02/201).
34 51 42 --	1. (03=L, 04=R) VOR FREQ indicator on glareshield has missing segment. 2. Replace the applicable VOR control panel, M91 (left) or M92 (right) (AMM 34-51-02/201).
34 53 01 00	1. ATC code indicator does not respond to selector movement. 2. Replace the dual ATC control panel, M81 (AMM 34-53-02/401).
34 53 02 --	1. ATC altitude reporting inop with the (01=L, 02=R, 03=either L or R) transponder selected. 2. FIM 34-53-00/101, Fig. 104, Block 1.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 53 03 --	1. ATC transmission (weak, intermittent, etc) with the (01=L, 02=R, 03=either L or R) transponder selected. 2. FIM 34-53-00/101, Fig. 105, Block 1.
34 53 04 --	1. Reported no ATC transmission with the (01=L, 02=R, 03=either L or R) transponder selected. 2. FIM 34-53-00/101, Fig. 105, Block 1.
34 53 05 00	1. Reported no ATC transmission with either transponder selected. 2. Replace the dual ATC control panel, M81 (AMM 34-53-02/401).
34 53 06 00	1. Reported transmitted code disagrees with the ATC code indicator with either transponder selected. 2. Replace the dual ATC control panel, M81 (AMM 34-53-02/401).
34 53 07 --	1. EICAS msg ATC FAULT displayed and ATC FAIL light illuminated (steady, intermittent) with the (01=L, 02=R, 03=either L or R) transponder selected. Transponder reported inop. 2. FIM 34-53-00/101, Fig. 103, Block 1
34 53 07 --	1. EICAS msg ATC FAULT displayed and (ATC FAIL, XPDR FAULT light illuminated) with the (01=L or 1, 02=R or 2, 03=both L and R) transponder selected. Transponder reported inop. 2. FIM 34-53-00/101, Fig. 103, Block 1
34 53 08 --	1. ATC identification inop with (01=L, 02=R, 03=either L or R) transponder selected. 2. Replace the dual ATC control panel, M81 (AMM 34-53-02/401).
34 53 09 --	1. EICAS msg ATC FAULT displayed and ATC FAULT lgt illuminated with (01=L, 02=R, 03=either L or R) transponder selected. Transponder reported normal. 2. FIM 34-53-00/101, Fig. 103
34 53 10 00	1. ATC code indicator has missing segment. 2. Replace the dual ATC control panel, M81 (AMM 34-53-02/401).
34 53 11 --	1. (01=L, 02=R) ATC code indicator is blank and was reported as inop. 2. Replace the dual ATC control panel, M81 (AMM 34-53-02/401).
34 55 01 --	34 55 01 -- thru 34 55 10 -- Not used.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 55 11 --	1. DME ident not received on the (03=L, 04=R) receiver. The corresponding DME displays are normal. (VOR, ILS) ident is also normal. 2. FIM 34-55-00/101, Fig. 109, Block 1
34 55 12 --	1. (01=Capt, 02=F/O) (L, R) RDMI DME display is blank. The EHSI DME display is OK. 2. Replace the applicable RDMI, N3 (left) or N43 (right) (AMM 34-22-05/401).
34 55 13 --	1. (01=Capt, 02=F/O) (L, R) EHSI DME display is blank. The RDMI DME display is OK. 2. FIM 34-55-00/101, Fig. 106, Block 1.
34 55 14 --	1. The RDMI and EHSI DME displays are blank for the (03=L, 04=R) DME. 2. FIM 34-55-00/101, Fig. 107, Block 1
34 55 15 --	1. The RDMI and EHSI DME displays are dashes for the (03=L, 04=R) DME. VOR ident is OK. 2. FIM 34-55-00/101, Fig. 104, Block 1
34 55 16 --	1. The RDMI and EHSI DME displays are dashes for the (03=L, 04=R) DME. ILS ident received. A usable DME signal is present. 2. FIM 34-55-00/101, Fig. 105, Block 1
34 55 17 --	1. The RDMI and EHSI DME displays are dashes for the (03=L, 04=R) DME. (ILS, VOR) ident not received. A usable DME signal is present. 2. FIM 34-55-00/101, Fig. 103, Block 1
34 55 18 --	1. The RDMI DME display for the (03=L, 04=R, 05=Both) DME(s) is dashes with the EHSI in MAP or PLAN mode. 2. FIM 34-55-00/101, Fig. 108, Block 1
34 55 19 --	1. The RDMI and EHSI DME distance is incorrect on the (01=Capt, 02=F/O) side with the HSI in the ILS mode. 2. FIM 34-55-00/101, Fig. 103, Block 1
34 55 20 --	1. (01=Capt, 02=F/O) (L,R) RDMI DME has missing (number segment). 2. Replace the applicable RDMI, N3 (left) or N43 (right) (AMM 34-22-05/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 57 01 --	1. Unable to select ADF with the (L, R) RDMI ADF/VOR selector on the (01=Capt, 02=F/O) RMDI. Warning flags are retracted. VOR operation normal. 2. Replace the applicable RDMI, N3 (left) or N43 (right) (AMM 34-22-05/401).
34 57 02 00	Not used.
34 57 03 --	1. ADF tone SW inoperative in (03=L, 04=R) position. 2. FIM 34-57-00/101, Fig. 103, Block 1
34 57 04 --	Not used.
34 57 05 --	1. (03=L, 04=R) ADF frequency indicator does not respond properly to selector operation. (Identify digits) 2. Replace the ADF control panel, M1046 (AMM 34-57-02/401).
34 57 06 --	1. ADF audio (describe fault) at either station using (04=L, 05=R) receiver with mode selector positioned to ADF. RDMI bearing pointer operation normal. 2. FIM 34-57-00/101, Fig. 103, Block 1
34 57 07 --	1. During ADF operation, (L, R) bearing pointer failure flag in view in the (01=Capt, 02=F/O) RDMI with mode selector positioned to ADF. Operation of the other RDMI is normal. Identification signal reception also normal. 2. Replace the applicable RDMI, N3 (left) or N43 (right) (AMM 34-22-05/401).
34 57 08 --	1. During ADF operation both (04=L, 05=R) bearing pointer failure flags continuously in view with mode selector positioned to ADF. 2. FIM 34-57-00/101, Fig. 104, Block 1
34 57 09 --	1. ADF audio (describe fault) at either crew station using (04=L, 05=R) receiver with mode selector positioned to ANT. RDMI bearing pointer operation normal. 2. FIM 34-57-00/101, Fig. 103, Block 1
34 57 10 --	1. During ADF operation, (L, R) bearing pointer failure flag retracted in the (01=Capt, 02=F/O) RDMI with mode selector positioned to ANT. Operation of the other RDMI is normal. Identification signal reception also normal. 2. Replace the applicable RDMI, N3 (left) or N43 (right) (AMM 34-22-05/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 57 11 --	1. During ADF operation both (04=L, 05=R) bearing pointer failure flags retracted with mode selector positioned to ANT. Identification signal reception normal. 2. Replace the ADF control panel, M85 (AMM 34-57-02/401).
34 57 12 --	1. (L, R) ADF audio (describe fault) at (01=Capt, 02=F/O, 03-1st Obs) crew station with mode selector positioned to ADF. 2. FIM 34-57-00/101, Fig. 103, Block 1
34 57 13 --	1. (L, R) ADF audio (describe fault) at (01=Capt, 02=F/O, 03=1st Obs) crew station with mode selector positioned to ANT. 2. FIM 34-57-00/101, Fig. 103, Block 1
34 57 14 00	34 57 14 00 thru 34 57 15 00 Not Used.
34 57 16 --	1. (03=L, 04=R) ADF frequency indicator has segment missing. 2. Replace the ADF control panel, M1046 (AMM 34-57-02/401).
34 57 17 --	1. (03=L, 04=R) ADF fails test. (Describe) 2. Replace the ADF control panel, M1046 (AMM 34-57-02/401).
34 57 18 --	1. (04=L, 05=R) ADF pointer (erratic, does not point properly, inop, etc). Audio is normal. 2. Replace the applicable RDMI, N3 (left) or N43 (right) (AMM 34-22-05/401).
34 57 19 --	1. (04=L, 05=R) ADF pointer (erratic, does not point properly, inop, etc). Audio is (describe fault). 2. FIM 34-57-00/101, Fig. 103, Block 1 for an audio problem. FIM 34-57-00/101, Fig. 104, Block 1 for an ADF pointer problem.
34 57 20 00	Not used.
34 57 21 --	1. (01=Capt, 02=F/O) (wide, narrow) RDMI pointer is (inop, stuck, etc) in ADF and VOR position. 2. Replace the applicable RDMI, N3 (left) or N43 (right) (AMM 34-22-05/401).
34 58 01 00	1. The EICAS message GPS (advisory) is displayed. 2. Replace the L MMR, M11249, and R MMR, M11250, (AMM 34-31-01/401).
34 58 02 00	1. The EICAS message L GPS (advisory) is displayed. 2. Replace the L MMR, M11249, (AMM 34-31-01/401).
34 58 03 00	1. The EICAS message R GPS (advisory) is displayed. 2. Replace the R MMR, M11250, (AMM 34-31-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 61 01 --	34 61 01 -- thru 34 61 14 -- Not used.
34 61 15 --	1. (01=Capt, 02=F/O) CDU display is (describe fault, e.g., out of focus, blinking, small, etc). 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 61 16 --	1. (01=Capt, 02=F/O) CDU display blank. Selecting alternate FMC source did not correct the fault. 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 61 17 --	1. EICAS msg (03=L, 04=R) FMC FAIL displayed. 2. FIM 34-61-00/101, Fig. 108A
34 61 18 --	1. EICAS msg (03=L 04=R) FMC FAIL displayed. Other CDU displays RESYNCING SINGLE FMC msg. 2. FIM 34-61-00/101, Fig. 108A
34 61 19 --	34 61 19 -- thru 34 61 20 Not used.
34 61 21 --	1. Manual brightness control is INOP on (01=Capt, 02=F/O) CDU. 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 61 22 --	1. Automatic brightness control is INOP on (01=Capt, 02=F/O) CDU. 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 61 23 --	1. Manual and automatic brightness control are INOP on (01=Capt, 02=F/O) CDU. 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 61 24 --	34 61 24 -- thru 34 61 26 -- Not used.
34 61 27 --	1. Nav data incorrect on (01=Capt, 02=F/O, 03=both) CDU IDENT page(s). 2. FIM 34-61-00/101, Fig. 107, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 61 28 --	1. (State data, e.g., drag factor, F-F factor, op program, etc) is incorrect on (01=Capt, 02=F/0, 03=both) CDU IDENT page(s). 2. FIM 34-61-00/101, Fig. 107, Block 1
34 61 29 --	34 61 29 -- thru 34 61 31 -- Not used.
34 61 32 --	1. IRS position entry from (01=Capt, 02=F/0) CDU results in REENTER IRS POS on scratch pad. Message would not clear after POS re-entered. 2. FIM 34-61-00/101, Fig. 105, Block 1
34 61 33 --	34 61 33 -- thru 34 61 36 -- Not used.
34 61 37 --	1. FMC MESSAGE on EICAS and PERF/VNAV UNAVAILABLE displayed on (01=Capt, 02=F/0, 03=Both) CDU(s) when VNAV button pressed. Data was entered in all boxes on perf init page. 2. FIM 34-61-00/101, Fig. 104, Block 1
34 61 38 --	34 61 38 -- thru 34 61 71 -- Not used.
34 61 72 --	1. BRG/DIS FR incorrect on (01=Capt, 02=F/0, 03=both) FIX INFO page(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 61 73 --	1. PL/BRG/DIS incorrect on (01=Capt, 02=F/0, 03=both) FIX INFO page(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 61 74 --	1. ABEAM incorrect on (01=Capt, 02=F/0, 03=both) FIX INFO page(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 61 75 --	1. DTG incorrect on (01=Capt, 02=F/0, 03=both) FIX INFO page(s). 2. FIM 34-61-00/101, Fig. 105, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 61 76 --	1. ETA incorrect on (01=Capt, 02=F/O, 03=both) FIX INFO page(s). 2. FIM 34-61-00/101, Fig. 105, Block 1 NOTE: Code not applicable to FMCs with LNAV/VNAV configuration.
34 61 77 --	1. ETA and DTG incorrect on (01=Capt, 02=F/O, 03=both) FIX INFO page(s). 2. FIM 34-61-00/101, Fig. 105, Block 1 (*[1] go to the last page of the index)
34 61 78 --	1. GS field blank on (01=Capt, 02=F/O, 03=Both) CDU POS REF page. 2. Close the applicable IRU circuit breaker. Open and then close the FMC circuit breaker. If the problem continues, FIM 34-21-00/101, Fig. 107, Block 1
34 61 79 --	34 61 79 -- thru 34 61 99 -- Not used.
34 62 01 --	34 62 01 -- thru 34 62 11 -- Not used.
34 62 12 --	1. Wind components in error on PROGRESS page 2 on (01=Capt, 02=F/O, 03=both) CDU(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 62 13 --	1. FUEL USED (in error, blank) on PROGRESS page 2 on (01=Capt, 02=F/O, 03=both) CDU(s). 2. FIM 34-61-00/101, Fig. 106, Block 1
34 62 14 --	1. FUEL (QTY ERROR, DISAGREE)-PROG 2/2 alert message is displayed on CDU. TOTALIZER differs from CALCULATED on progress page 2 of (01=Capt, 02=F/O, 03=both) CDU(s). 2. FIM 34-61-00/101, Fig. 106, Block 1
34 62 15 --	1. FMC will not enter the IRS (3) DME DME mode. PROGRESS page 2 indicates (IRS (2) DME DME, IRS (3) DME VOR, etc) on the (01=Capt, 02=F/O, 03=both) CDU(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 62 16 --	1. DTG in error on PROGRESS page 1 of (01=Capt, 02=F/O, 03=both) CDU(s). 2. FIM 34-61-00/101, Fig. 105, Block 1

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 62 17 --	1. ETA in error on PROGRESS page 1 of (01=Capt, 02=F/O, 03=both) CDU(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 62 18 --	1. Waypoint FUEL in error on PROGRESS page 1 of (01=Capt, 02=F/O, 03=Both) CDU(s). 2. FIM 34-61-00/101, Fig. 106, Block 1 NOTE: Code not applicable to FMCs with LNAV/VNAV configuration.
34 62 19 --	1. Wind in error on PROGRESS page 1 of (01=Capt, 02=F/O, 03=both) CDU(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 62 20 --	Not used.
34 62 21 --	1. MSG light fails to illuminate with CDU advisory on (01=Capt, 02=F/O, 03=both) CDU(s). 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 62 22 00	1. (NOT IN DATA BASE, REENTER IRS POSITION, MAX ALT FLXXX, etc) advisory message displayed when the advisory condition does not exist. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 62 23 00	1. The following advisory condition exists and no advisory message was received (describe advisory condition). 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 62 24 --	1. The FMC light fails to illuminate with CDU alert on (01=Capt, 02=F/O, 03=both) CDU. 2. FIM 34-61-00/101, Fig. 108, Block 1
34 62 25 --	1. The FMC light and MSG light fail to illuminate with CDU alerts on (01=Capt, 02=F/O, 03=both) CDU(s). 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 62 26 00	1. (END OF ROUTE, DISCONTINUITY, NO ACTIVE ROUTE, etc) alert messages displayed when the alert condition does not exist. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 62 27 00	1. The following alert condition exists and no alert message was received: (describe alert condition). 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 62 28 --	1. VTK flag is in view on (01=Capt, 02=F/O) HSI. Selecting ALTN FMC corrects the fault. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401) or the applicable CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 62 29 --	Not used.
34 62 30 --	1. Map display is offset on (01=Capt, 02=F/O) HSI. Selecting ALTN FMC corrects the fault. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401) or the applicable CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 62 31 --	1. Map is missing on (01=Capt, 02=F/O) HSI. Selecting ALTN FMC corrects the fault. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401) or the applicable CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 62 32 --	1. (01=Capt, 02=F/O) HSI displays MAP RANGE DISAGREE. Selecting ALTN FMC corrects the fault. 2. FIM 34-61-00/101, Fig. 109, Block 1.
34 62 33 --	1. (01=Capt, 02=F/O) HSI(s) display (MAP, MAP FAIL). Selecting ALTN FMC corrects the fault. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401) or the applicable CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 62 34 --	34 62 34 -- thru 34 62 37 -- Not used.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 62 38 --	1. Distance to go and ETA are missing from (01=Capt, 02=F/O) HSI. Selecting ALTN FMC corrects the fault. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401) or the applicable CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 62 39 --	34 62 39 -- thru 34 62 42 -- Not used.
34 62 43 --	1. The airplane (describe problem: EPR, speed or path in error, loses fuel weight) in VNAV DESCENT mode. Fault occurs with (01=L, 02=C, 03=R, 04=any) A/P engaged. 2. For EPR, speed or path in error; FIM 34-61-00/101, Fig. 109A Block A. 3. For loses fuel weight; FIM 34-61-00/101, Fig. 106, Block 1.
34 62 44 --	Not Used.
34 62 45 --	Not used.
34 62 46 --	1. The airplane (describe problem: EPR, speed or path in error, loses fuel weight) in VNAV CRUISE mode. Fault occurs with (01=Left, 02=Center, 03=Right, 04=Any) A/P engaged. 2. For EPR, speed or path in error; FIM 34-61-00/101, Fig. 109A Block A. 3. For loses fuel weight; FIM 34-61-00/101, Fig. 106, Block 1.
34 62 47 --	Not used.
34 62 48 --	Not Used.
34 62 49 --	1. The airplane (describe problem: EPR, speed or path in error, loses fuel weight) in VNAV CLIMB mode. Fault occurs with (01=Left, 02=Center, 03=Right, 04=Any) A/P engaged. 2. For EPR, speed or path in error; FIM 34-61-00/101, Fig. 109A Block A. 3. For loses fuel weight; FIM 34-61-00/101, Fig. 106, Block 1.
34 62 50 --	34 62 50 -- thru 34 62 59 -- Not used.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 62 60 --	1. VTK flag is in view on (01=Capt, 02=F/O, 03=Both) HSI(s). Selecting ALTN FMC does not correct the fault. 2. Replace the applicable EFIS symbol generator, M148 (left), M149 (center) or M150 (right) (AMM 34-22-01/401).
34 62 61 --	Not used.
34 62 62 --	1. Map display is offset on (01=Capt, 02=F/O, 03=Both) HSI(s). Selecting ALTN FMC does not correct the fault. 2. Replace the applicable EFIS symbol generator, M148 (left), M149 (center) or M150 (right) (AMM 34-22-01/401).
34 62 63 --	1. Map is missing on (01=Capt, 02=F/O, 03=Both) HSI(s). Selecting ALTN FMC does not correct the fault. 2. Replace the applicable EFIS symbol generator, M148 (left), M149 (center) or M150 (right) (AMM 34-22-01/401).
34 62 64 --	1. (01=Capt, 02=F/O, 03=Both) HSI(s) display MAP RANGE DISAGREE. Selecting ALTN FMC does not correct the fault. 2. FIM 34-61-00/101, Fig. 109, Block 1
34 62 65 --	1. (01=Capt, 02=F/O, 03=Both) HSI(s) display (MAP, MAP FAIL). Selecting ALTN FMC does not correct the fault. 2. Replace the applicable EFIS symbol generator, M148 (left), M149 (center) or M150 (right) (AMM 34-22-01/401).
34 62 66 --	34 62 66 -- thru 34 62 68 -- Not used.
34 62 69 --	1. Wind vector and speed are missing from (01=Capt, 02=F/O, 03=Both) HSI(s). Selecting ALTN FMC does not correct the fault. 2. Replace the applicable EFIS symbol generator, M148 (left), M149 (center) or M150 (right) (AMM 34-22-01/401).
34 62 70 --	1. Distance to go and ETA are missing from (01=Capt, 02=F/O, 03=Both) HSI(s). Selecting ALTN FMC does not correct the fault. 2. Replace the applicable EFIS symbol generator, M148 (left), M149 (center) or M150 (right) (AMM 34-22-01/401).
34 62 71 --	34 62 71 -- thru 34 62 74 -- Not used.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 62 75 --	1. (Specify key) Key on (01=Capt, 02=F/O) CDU gives multiple response. 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 62 76 --	1. (Specify key) Key on (01=Capt, 02=F/O) CDU feel is abnormal. 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 62 77 --	1. All keys on (01=Capt, 02=F/O) CDU inop. Switching FMC source corrects the fault. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 62 78 --	1. All keys on (01=Capt, 02=F/O) CDU inop on with normal and ALTN FMC selected. 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-01/401).
34 62 79 --	34 62 79 -- thru 34 62 82 -- Not used.
34 62 83 --	1. EICAS msg (03=L, 04=R) FMC FAIL displayed. Other CDU displays SINGLE FMC OPERATION msg. 2. FIM 34-61-00/101, Fig. 108A
34 62 84 03	1. Both CDUs are locked up on IDENT page. 2. Open the L and R FMCS CMPTR circuit breakers. Stop for 15 seconds. Close the L and R FMC CMPTR circuit breakers. If the problem continues, replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 62 85 --	1. IRS NAV ONLY alert message is displayed on (01=Capt, 02=F/O, 03=both) CDU(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 62 86 --	1. (01=Capt, 02=F/O) CDU display is (describe fault, e.g., partially complete or containing garbage characters). 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 62 87 --	1. (Record number of resyncs) resyncs experienced in (record time period) in (01=Capt, 02=F/O) CDU. 2. Open the applicable FMCS CMPTR circuit breaker. Stop for 15 seconds. Close the applicable FMCS CMPTR circuit breaker. If the problem continues, replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 62 88 --	1. (01=Capt, 02=F/O) CDU display blank. Selecting alternate FMC source corrects the fault. 2. FIM 34-61-00/101, Fig. 111, Block 1
34 62 89 --	1. (Specify key) key on (01=Capt, 02=F/O) CDU gives incorrect response. Switching FMC source corrects the fault. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 62 90 --	1. (Specify key) key on (01=Capt, 02=F/O) CDU gives incorrect response with normal and alternate FMC selected. 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 62 91 --	1. (Specify key) on (01=Capt, 02=F/O) CDU inop on all pages. Switching FMC source corrects the fault. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 62 92 --	1. (Specify key) on (01=Capt, 02=F/O) CDU inop on all pages with normal and alternate FMC selected. 2. Replace the applicable FMC CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 62 93 --	1. EXEC key on (01=Capt, 02=F/O, 03=Both) CDU(s) fails to illum. 2. FIM 34-61-00/101, Fig. 104, Block 1
34 62 94 --	1. FMC resync takes longer than 30 seconds in (01=Capt, 02=F/O) CDU. 2. Open the applicable FMCS CMPTR circuit breaker. Stop for 15 seconds. Close the applicable FMCS CMPTR circuit breaker. If the problem continues, replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 62 95 --	1. Incorrect engine type displayed on (01=Capt, 02=F/O, 03=Both) CDU IDENT page(s). 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 62 96 00	1. FMC POS on CDU POS REF page 2/2 is in error (record error). 2. FIM 34-21-00/101, Fig. 107, Block 1
34 62 97 --	1. (04=L, 05=C, 06=R) IRS position on CDU POS REF page 2/2 is in error. (Record time IRS was in operation, actual and indicated latitude and longitude). Add note if IRS error was excessive for two consecutive flights. 2. FIM 34-21-00/101, Fig. 107A, Block 1
34 62 98 --	1. No boxes are displayed for position initialization on (01=Capt, 02=F/O, 03-Both) CDU(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 62 99 --	1. The fuel weight is (incorrect, missing) from the performance initialization page on the (01=Capt, 02=F/O, 03=Both) CDU(s). 2. FIM 34-61-00/101, Fig. 106, Block 1
34 63 01 --	1. Tuned navaid data blank on PROGRESS page of (01=Capt, 02=F/O, 03=Both) CDU(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 63 02 --	1. Tuned nav aid data constantly changing on PROGRESS page of (01=Capt, 02=F/O, 03=Both) CDU(s). 2. FIM 34-61-00/101, Fig. 105, Block 1
34 63 03 00	1. Wind vector on Capt HSI differs from F/O HSI. Selecting ALTN FMC corrects the fault. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401).
34 63 04 00	1. Wind vector on Capt HSI differs from F/O HSI with both normal and ALTN FMC selected. 2. Replace the applicable EFIS symbol generator, M148 (left), M149 (center) or M150 (right) (AMM 34-22-01/401).
34 63 05 --	1. Distance to go and ETA display dashes on (01=Capt, 02=F/O, 03=Both) HSI(s). Selecting ALTN FMC corrects the fault. 2. Replace the applicable FMC, M134 (left) or M135 (right) (AMM 34-61-01/401) or the applicable CDU, M76 (left) or M77 (right) (AMM 34-61-02/201).
34 63 06 --	1. Distance to go and ETA display dashes on (01=Capt, 02=F/O, 03=Both) HSI(s) with normal and ALTN FMC. 2. Replace the applicable EFIS symbol generator, M148 (left), M149 (center) or M150 (right) (AMM 34-22-01/401).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 63 07 --	1. LNAV remains white (armed) on ADI with (01=L, 02=C, 03=R, 04=Any) A/P engaged. 2. FIM 34-61-00/101, Fig. 110, Block 1
34 63 08 --	1. LNAV annunciation on ADI has a line through it with (01=L, 02=C, 03=R, 04=Any) A/P engaged. 2. FIM 34-61-00/101, Fig. 110, Block 1
34 63 09 --	1. Airplane (describe error in path: track, heading, transition, etc) with (01=L, 02=C, 03=R, 04-Any) A/P engaged. 2. FIM 34-61-00/101, Fig. 110, Block 1
34 63 10 --	1. VNAV will not engage with (01=L, 02=C, 03=R, 04=Any) A/P engaged. 2. FIM 34-61-00/101, Fig. 110, Block 1
34 63 11 --	1. VNAV annunciation on ADI has a line through it with (01=L, 02=C, 03=R, 04=Any) A/P engaged. 2. FIM 34-61-00/101, Fig. 110, Block 1
34 63 12 --	1. FAIL is illum and screen displays FMC on (01=CAPT, 02=F/0) CDU. No FMC FAIL message is displayed on EICAS. 2. FIM 34-61-00/101, Fig. 111, Block 1
34 63 14 --	1. FAIL is illum and screen displays FMC on (01=Capt, 02=F/0) CDU. Selecting ALTN FMC corrects the fault. 2. FIM 34-61-00/101, Fig. 111, Block 1
34 63 15 --	1. FAIL is illum and screen displays FMC on (01=Capt, 02=F/0) CDU. Selecting ALTN FMC doesn't correct the fault. 2. FIM 34-61-00/101, Fig. 111, Block 1
34 63 16 --	1. FUEL USED and CALCULATED FUEL display blank on (01=Capt, 02=F/0, 03=Both) CDU(S). 2. FIM 34-61-00/101, Fig. 106, Block 1
34 63 17 --	1. Waypoint display (moves, wavers, etc.) on (01=Capt, 02=F/0, 03=Both) HSI(s). Selecting ALTN FMC does not correct fault. 2. FIM 34-61-00/101, Fig. 111, Block 5

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 63 18 --	1. (01=Capt, 02=F/O) Leg sequencing is incorrect in CDU. 2. Do these steps with the CDU IDENT page shown on the CDU (AMM 34-61-00/201): 1) Push the third line select key on the right side. 2) Push the second line select key on the right side. 3) Push the third line select key on the right side again. 4) Push the second line select key on the right side again. NOTE: These steps will make the data base with the current date active.
34 63 19 --	1. (01=Capt, 02=F/O) HSI displays leg sequencing incorrectly. 2. Do these steps with the CDU IDENT page shown on the CDU (AMM 34-61-00/201): 1) Push the third line select key on the right side. 2) Push the second line select key on the right side. 3) Push the third line select key on the right side again. 4) Push the second line select key on the right side again. NOTE: These steps will make the data base with the current date active.
34 63 20 --	1. Total fuel differs from (12=CAPT, 13=F/O, 14=CAPT & F/O) FMCS calculated fuel qty. Fuel qty ERROR-PROG 2/2 alert message displayed on CDU and EICAS message FMC MESSAGE displayed. Fuel flow was normal. Total fuel_____, FMC calculated fuel _____. No Evidence of fuel leak. (Ref Chapter 28 fault code diagram). 2. Do these steps with the CDU IDENT page shown on the CDU (AMM 34-61-00/201): NOTE: These steps will make the data base with the current date active. A. Push the third line select key on the right side. B. Push the second line select key on the right side. C. Push the third line select key on the right side again. D. Push the second line select key on the right side again.

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 63 21 00	1. CDU's do not drop waypoints. 2. Do these steps with the CDU IDENT page shown on the CDU (AMM 34-61-00/201): 1) Push the third line select key on the right side. 2) Push the second line select key on the right side. 3) Push the third line select key on the right side again. 4) Push the second line select key on the right side again. NOTE: These steps will make the data base with the current date active.
34 63 22 --	1. V1 INOP displayed on (01=Capt, 02=F/O) ADI. 2. Make sure the V1 speed was put in at the TAKEOFF REF page on the CDU before the airplane left the gate. If the problem continues, FIM 34-61-00/101, Fig. 111, Block 1.
34 63 23 --	1. V1, VR bug(s) (not normal, missing etc) on (01=Capt, 02=F/O, 03=both) ADI speed tape(s) with normal or ALTN EFI selected. 2. FIM 34-61-00/101, Fig. 111, Block 1
34 63 24 --	1. Command airspeed on (01=Capt, 02=F/O, 03=both) ADI speed tape(s) read(s) 100 Kts with VNAV selected, speed mode active. 2. FIM 34-61-00/101, Fig. 111, Block 1
34 63 36 00	1. The EICAS message UNABLE RNP displayed. 2. This message is not a failure. This is a response to navigation processing when actual nav performance (ANP) does not meet required nav performance (RNP).
34 90 01 00	1. Lightning strike occurred on the nose radome. 2. Inspect the airplane for a lightning strike or static discharge (AMM 05-51-19/201).
34 90 02 00	1. Lightning strike occurred on the nacelle(s). 2. Inspect the airplane for a lightning strike or static discharge (AMM 05-51-19/201).
34 90 03 00	1. Lightning strike occurred on the wingtip(s). 2. Inspect the airplane for a lightning strike or static discharge (AMM 05-51-19/201).
34 90 04 00	1. Lightning strike occurred on leading edge flaps. 2. Inspect the airplane for a lightning strike or static discharge (AMM 05-51-19/201).

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FAULT CODE	1. LOG BOOK REPORT 2. FAULT ISOLATION REFERENCE
34 90 05 00	1. Lightning strike occurred on an unknown area. 2. Inspect the airplane for a lightning strike or static discharge (AMM 05-51-19/201).

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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)

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

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 Systen 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)

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

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)

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PITOT-STATIC SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ALTIMETER - (FIM 34-13-00/101)				
STANDBY, N23				
INDICATOR - (FIM 34-13-00/101)				
STANDBY AIRSPEED, N22				
PORT - ALTERNATE STATIC	--	2	FORWARD FUSELAGE	34-11-03
PROBE - CAPTAIN'S PITOT STATIC, B26	--	1	NOSE SECT, LEFT UPPER PROBE	34-11-01
PROBE - FIRST OFFICER'S PITOT STATIC, B28	--	1	NOSE SECT, RIGHT UPPER PROBE	34-11-01
PROBE - LEFT AUXILIARY PITOT STATIC, B29	--	1	NOSE SECT, LEFT LOWER PROBE	34-11-01
PROBE - RIGHT AUXILIARY PITOT STATIC, B27	--	1	NOSE SECT, RIGHT LOWER PROBE	34-11-01
SENSOR - (FIM 21-30-00/101)				
DIFFERENTIAL PRESSURE, TS5072				
SWITCH - (FIM 29-21-00/101)				
RAT AIRSPEED, S614				

Pitot-Static System - Component Index
Figure 101

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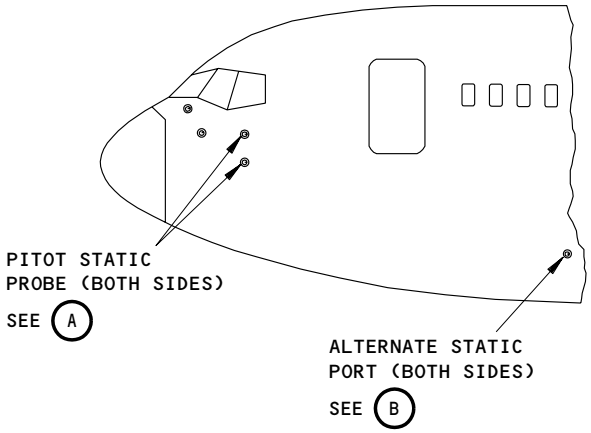
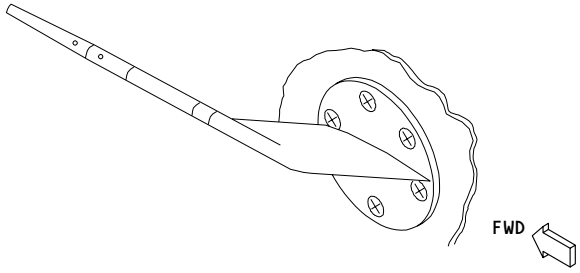
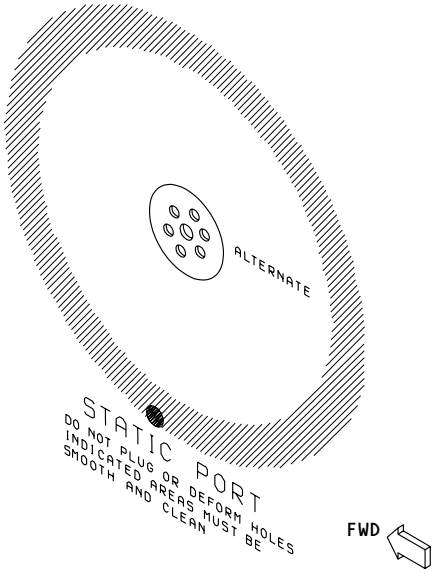




PITOT STATIC PROBE, B26, B27, B28, B29
(EXAMPLE)
A



ALTERNATE STATIC PORT
(EXAMPLE)
B

Pitot-Static System - Component Location
Figure 102

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Not Used
Figure 103

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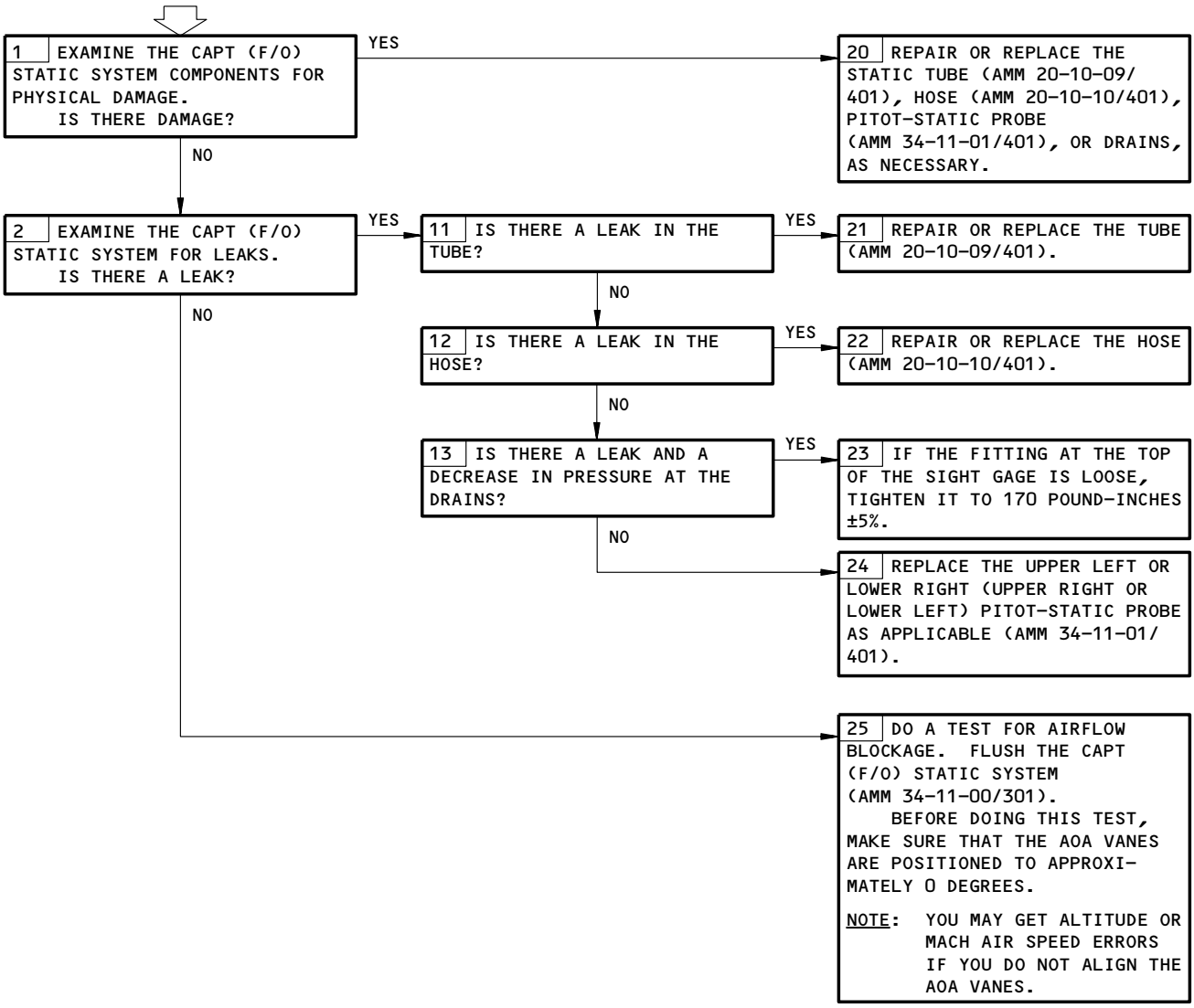
CAPT (F/O) STATIC SYSTEM PROBLEM

PREREQUISITES
NONE



Capt (F/O) Static System Problem
Figure 104

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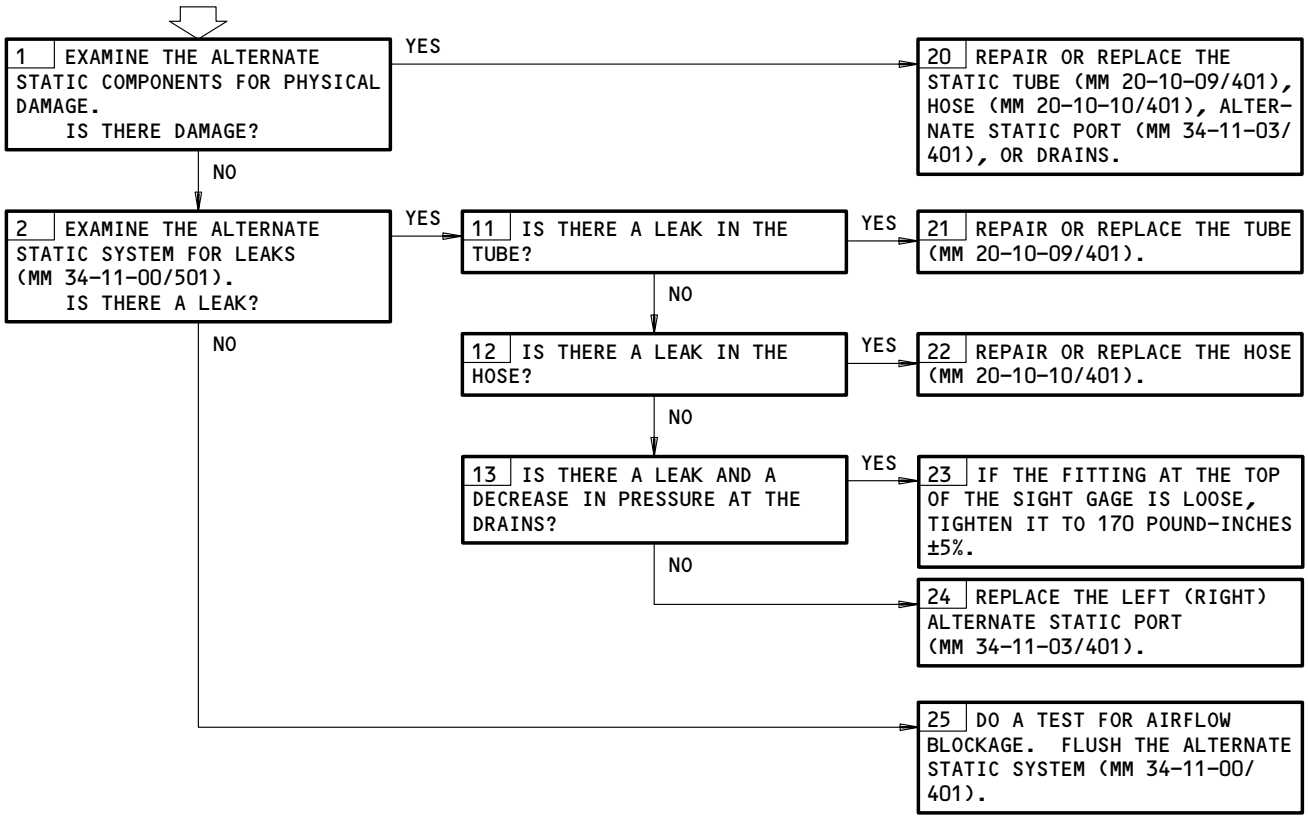
ALTERNATE STATIC SYSTEM PROBLEM

PREREQUISITES
NONE



Alternate Static System Problem
Figure 105

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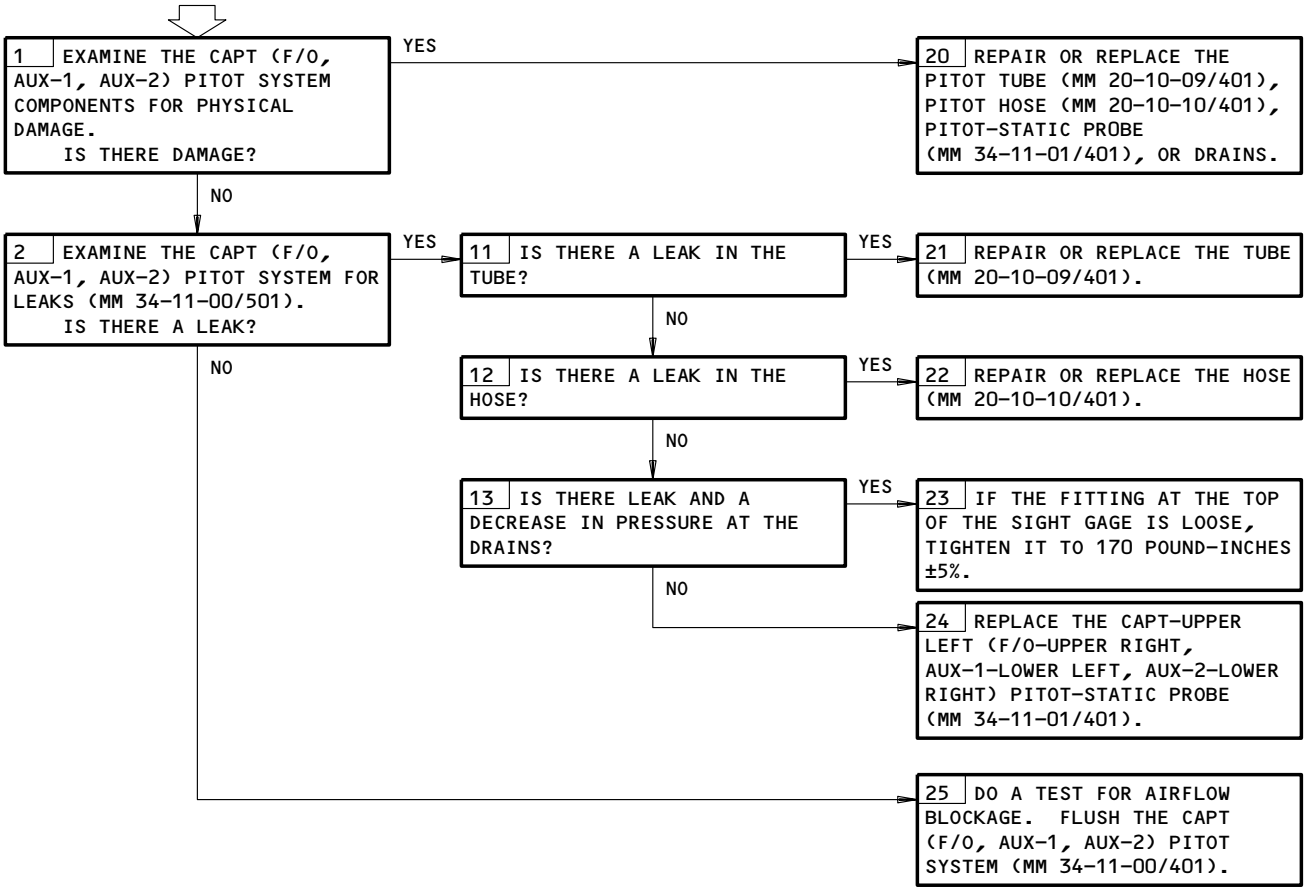
CAPT (F/O, AUX-1, AUX-2) PITOT SYSTEM PROBLEM

PREREQUISITES
NONE



Capt (F/O, Aux-1, Aux-2) Pitot System Problem
Figure 106

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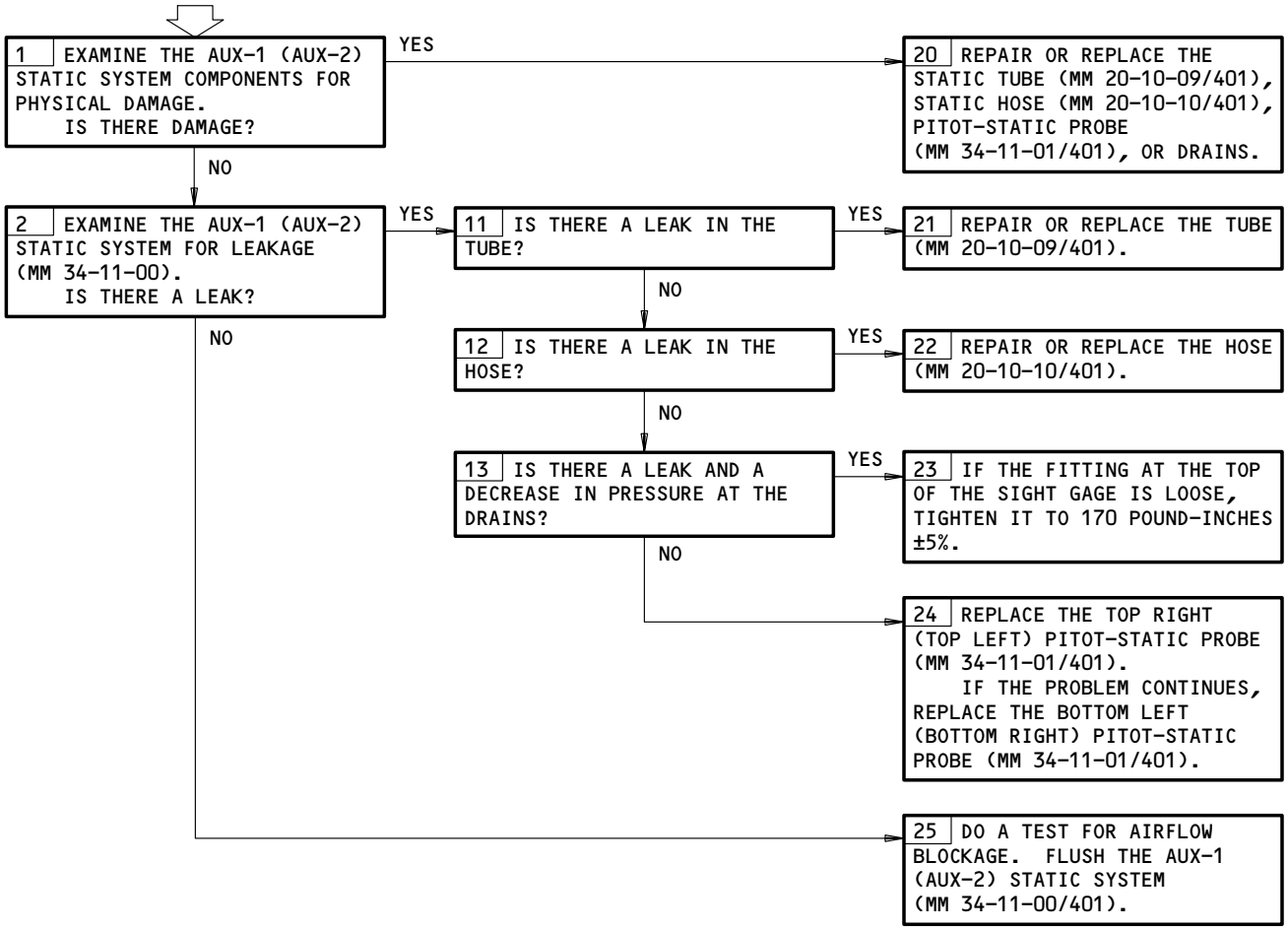
AUX-1 (AUX-2) STATIC SYSTEM PROBLEM

PREREQUISITES
NONE



Aux-1 (Aux-2) Static System Problem
Figure 107

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AIR DATA COMPUTING (ADC) SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ALTIMETER - (REF 34-13-00, FIG. 101)				
CAPT, N8				
F/O, N48				
CIRCUIT BREAKERS	1		FLIGHT COMPARTMENT, P11	
AIR DATA AOA SENSOR LEFT, C1		1	11A11	*
AIR DATA AOA SENSOR RIGHT, C3		1	11F31	*
AIR DATA BARO CORRECT LEFT, C2		1	11A12	*
AIR DATA BARO CORRECT RIGHT, C4		1	11F32	*
AIR DATA COMPTR LEFT, C625		1	11A10	*
AIR DATA COMPTR RIGHT, C626		1	11F30	*
COMPUTER - AIR DATA LEFT, M100	2	1	119AL, MAIN EQUIP CENTER, E1-3	34-12-01
COMPUTER - AIR DATA RIGHT, M101	2	1	119AL, MAIN EQUIP CENTER, E2-3	34-12-01
COMPUTER - (REF 31-41-00, FIG. 101)				
EICAS LEFT, M10181				
EICAS RIGHT, M10182				
INDICATOR - (REF 34-22-00, FIG. 101)				
ELEX ATTITUDE DIRECTION LEFT, N4				
ELEX ATTITUDE DIRECTION RIGHT, N44				
MODULE - DISCRETE WARNING DISPLAY, M779	1	1	FLIGHT COMPARTMENT, P1-3	*
PANEL - (REF 28-43-00, FIG. 101)				
MISC TEST, M10398				
PROBE - TOTAL AIR TEMPERATURE, TS161	2	1	LEFT SIDE FORWARD FUSELAGE	34-12-02
RELAY - (REF 31-01-33, FIG. 101)				
AOA PROBE CURRENT SENSING LEFT, K400				
AOA PROBE CURRENT SENSING RIGHT, K401				
AUX PITOT STATIC CURRENT SENSING LEFT, K312				
AUX PITOT STATIC CURRENT SENSING RIGHT, K243				
PITOT STATIC CURRENT SENSING CAPT, K241				
PITOT STATIC CURRENT SENSING F/O, K310				
TAT PROBE CURRENT SENSING LEFT, K411				
RELAY - (REF 31-01-36, FIG. 101)				
SYS 1 AIR/GND, K149				
RELAY - (REF 31-01-37, FIG. 101)				
SYS 2 AIR/GND, K207				
SENSOR - ANGLE OF ATTACK LEFT, TS12	2	1	LEFT SIDE FUSELAGE NOSE	34-12-03
SENSOR - ANGLE OF ATTACK RIGHT, TS13	2	1	RIGHT SIDE FUSELAGE NOSE	34-12-03
SWITCH - ALTERNATE VMO/MMO SELECT, S591 [1]	2	1	119AL, MAIN EQUIP CENTER	*
SWITCH - CAPT ADC INSTR SOURCE SELECT, S482	1	1	FLIGHT COMPARTMENT, P1-1	*
SWITCH - F/O ADC INSTR SOURCE SELECT, S483	1	1	FLIGHT COMPARTMENT, P3-3	*
TRANSFORMER - (REF 31-01-36, FIG. 101)				
AIR DATA COMPUTER LEFT, T139				
TRANSFORMER - (REF 31-01-37, FIG. 101)				
AIR DATA COMPUTER RIGHT, T140				

* SEE THE WDM EQUIPMENT LIST

[1] ALL MTH AIRPLANES

Air Data Computing (ADC) System - Component Index
Figure 101

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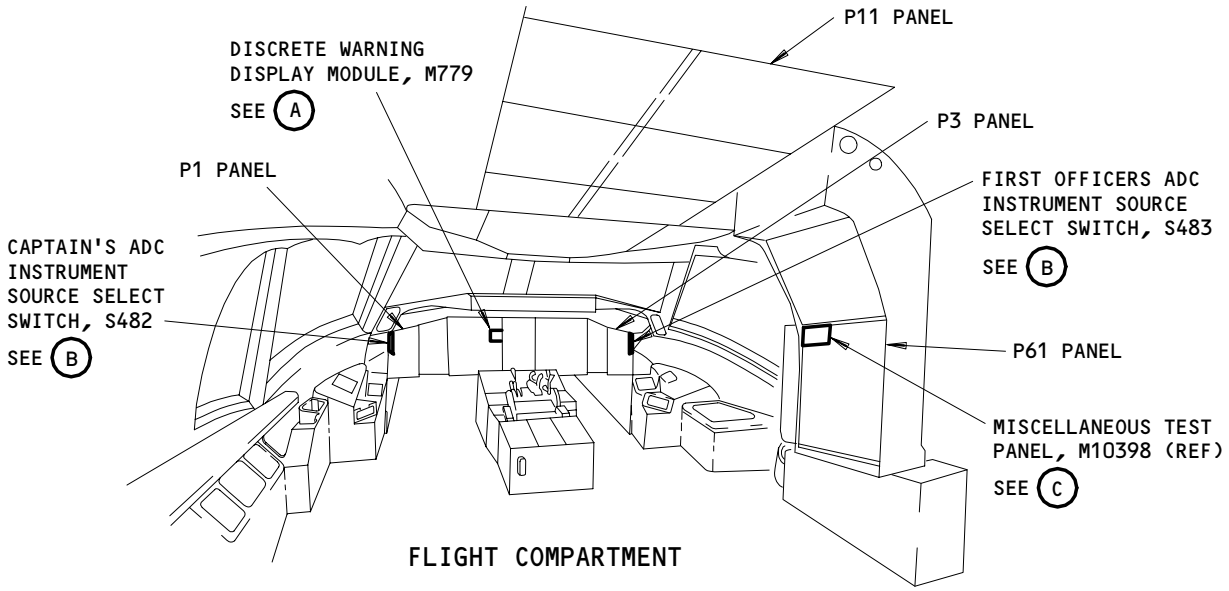
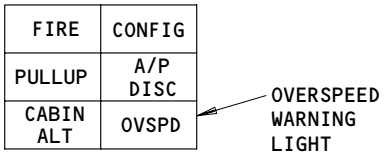
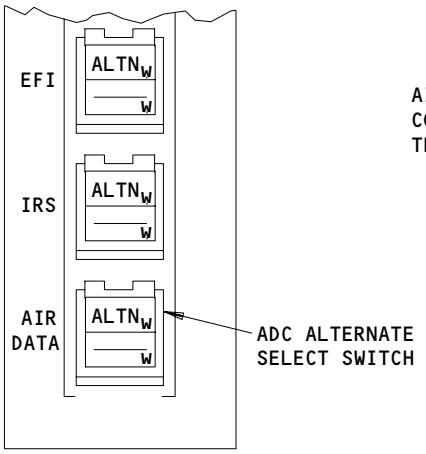


FLIGHT COMPARTMENT



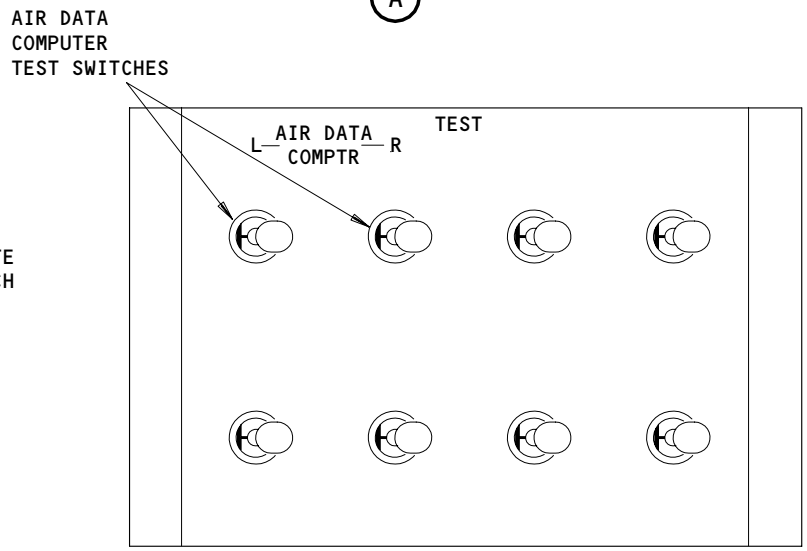
DISCRETE WARNING DISPLAY MODULE, M779

A



CAPTAIN'S OR FIRST OFFICERS INSTRUMENT SOURCE SELECT SWITCH, S482 OR S483

B



MISCELLANEOUS TEST PANEL, M10398 (REF)

C

Air Data Computing (ADC) System - Component Location
Figure 102 (Sheet 1)

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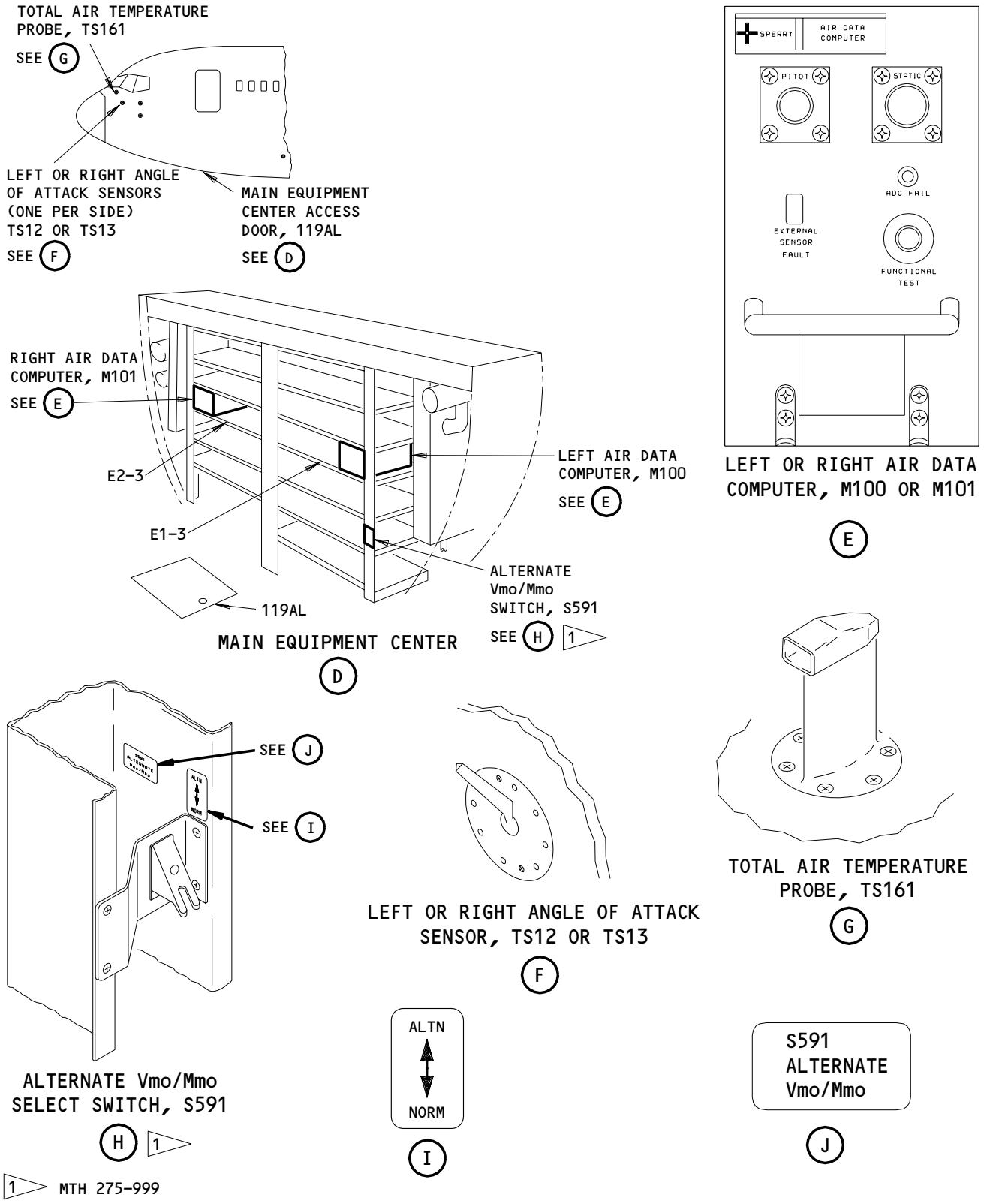

1 MTH 275-999

Air Data Computing (ADC) System - Component Location
Figure 102 (Sheet 2)

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Not Used
Figure 103

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CAPT (F/O) ALTIMETER ERROR IS CORRECTED WITH ALTN AIR DATA SELECTED, OR EICAS MSG "ALT DISAGREE" OR "IAS DISAGREE"

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A10, 11A11, 11A12, 11E2, 11E25, 11F30, 11F31, 11F32

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)
PITOT-STATIC SYSTEM AT AMBIENT (AMM 34-11-00/501)

1 PUSH THE LEFT (RIGHT) FUNCTIONAL TEST BUTTON FOR THE ADC.
DID THE FAULTBALL SHOW YELLOW?

YES → 21 REPLACE THE LEFT (RIGHT) ADC, M100 (M101) (AMM 34-12-01/401).

NO → 22 DO THIS PROCEDURE: "STATIC SYSTEM PROBLEM" FOR THE CAPT (F/O) STATIC SYSTEM (FIM 34-11-00/101, FIG. 104).
IF THE PROBLEM CONTINUES, DO THIS PROCEDURE: "PITOT SYSTEM PROBLEM" FOR THE CAPT (F/O) PITOT SYSTEM (FIM 34-11-00/101, FIG. 106).
IF THE PROBLEM CONTINUES, USE A DATA BUS READER TO DO A CHECK OF THE AOA SENSOR FOR ITS 0° POSITION (AMM 34-12-00/501).

NOTE: YOU MAY GET AN ALTITUDE OR MACH AIRSPEED ERROR IF YOU DO NOT ALIGN THE AOA SENSOR.

IF THE PROBLEM CONTINUES, DO A TEST OF THE AOA SENSOR (FIM 34-12-00/101, FIG. 109).
IF THE PROBLEM CONTINUES, DO THIS CORRECTIVE ACTION: "SYSTEM TEST - AIR DATA COMPUTING SYSTEM" (AMM 34-12-00/501). REPAIR THE PROBLEMS THAT YOU FIND.

Capt (F/O) Altimeter is Corrected with ALTN Air Data Selected, or EICAS Msg "ALT DISAGREE" Or "IAS DISAGREE"
Figure 104

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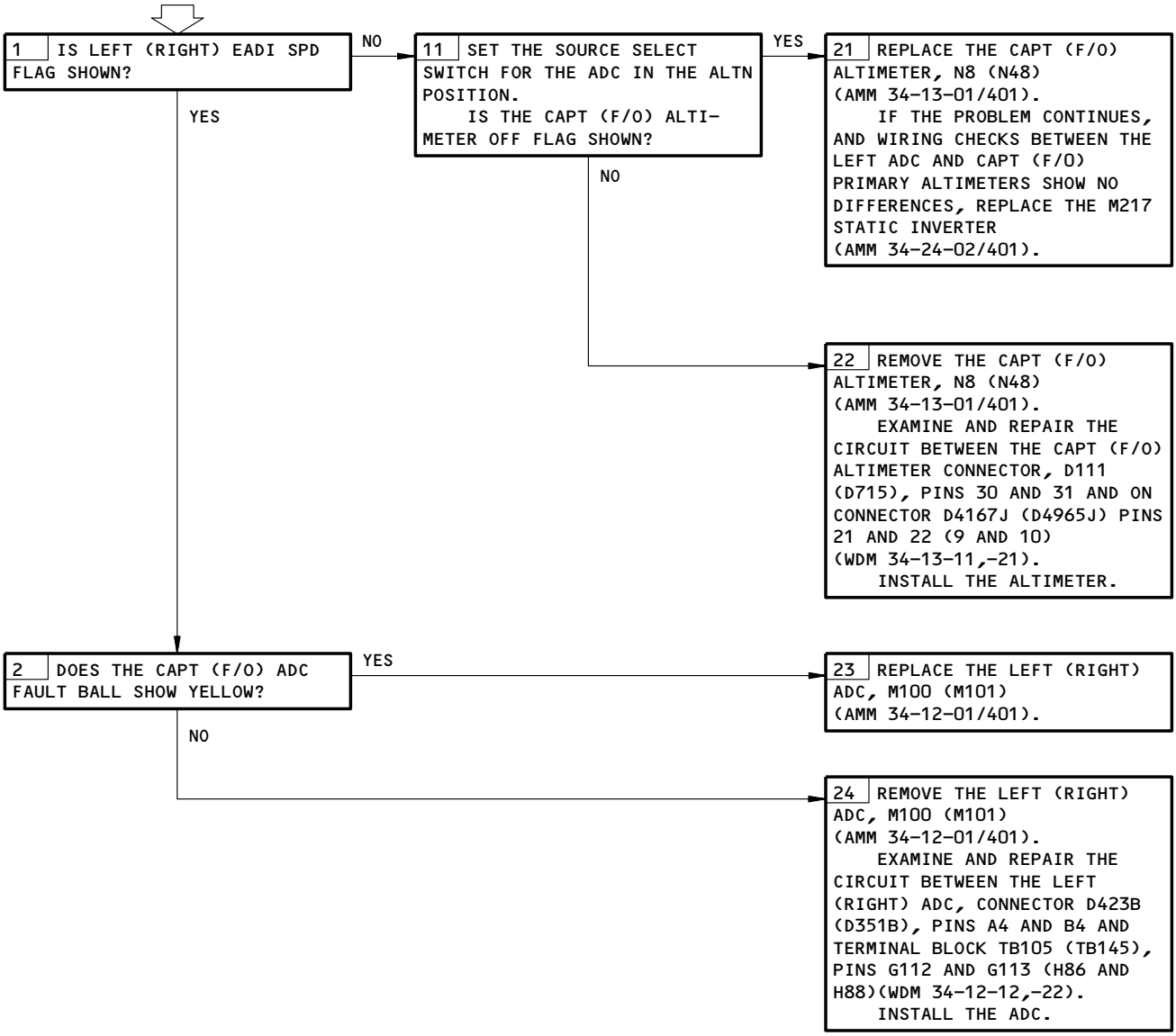
PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7, 11A10, 11A11, 11A12, 11E2, 11E3, 11E4, 11E23, 11E24, 11E25, 11F8, 11F9, 11F24, 11F29, 11F30, 11F31, 11F32

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)
PITOT - STATIC SYSTEM AT AMBIENT (AMM 34-11-00/501)

OFF FLAG IN VIEW ON CAPT'S (F/O'S) ALTIMETER



Off Flag in View on Capt's (F/O's) Altimeter
Figure 105

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Not Used
Figure 106

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CAPT (F/O) TAS/SAT AND MACH ARE IN ERROR

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7,11A10,11A11,11A12,11E2,11E3,11E4,11E8,11E9,
11E23,11E24,11E25,11E29,11E30,11F8,11F9,11F24,
11F29,11F30,11F31,11F32

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)
PITOT-STATIC SYSTEM AT AMBIENT (AMM 34-11-00/501)

1 SET THE LEFT (RIGHT) ADC TEST SWITCH, ON THE P61 TEST PANEL, TO THE "AIR DATA COMPT" POSITION.
DOES THE LEFT (RIGHT) EADI AIRSPEED TAPE SHOW 137 KTS AFTER 7 SECONDS?

NO → 11 REPLACE THE LEFT (RIGHT) ADC, M100 (M101)(AMM 34-12-01/401).

YES → 13 DO THIS PROCEDURE: CAPT (F/O) STATIC SYSTEM (FIM 34-11-00/101, FIG. 104).
IF THE PROBLEM CONTINUES, DO THIS PROCEDURE: CAPT (F/O), AUX-1, AUX-2) PITOT SYSTEM PROBLEM (FIM 34-11-00/101, FIG. 106).

TAS/SAT and Mach Are In Error
Figure 107

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PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (MM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7,11A10,11A11,11A12,11E2,11E3,11E4,11E23,
11E24,11E25,11F8,11F9,11F24,11F29,11F30,11F31,
11F32

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
PITOT-STATIC SYSTEM AT AMBIENT (MM 34-11-00/501)
ALL INSTRUMENT SOURCE SELECT SWITCHES IN THE NORM POSITION.

SPD FLAG IN VIEW ON L (R) EADI

1 DOES THE CAPT'S (F/O) ALTIMETER OFF FLAG SHOW?

NO → 11 SET THE SOURCE SELECT SWITCH FOR THE ADC IN THE ALTN POSITION.
DOES THE LEFT (RIGHT) EADI SPD FLAG STAY SHOWN?

NO → 21 REMOVE THE LEFT (RIGHT) EFIS SYMBOL GENERATOR M148 (M150)(MM 34-22-01/401).
EXAMINE AND REPAIR THE CIRCUIT BETWEEN THE LEFT (RIGHT) EFIS SYMBOL GENERATOR CONNECTOR D425A (D373D), PINS J1 AND K1 AND TERMINAL BLOCK TB105 (TB145) PINS H146 AND H148 (H86 AND H88) (WDM 34-22-19,-29).
INSTALL THE EFIS SYMBOL GENERATOR.

YES → 12 SET THE SOURCE SELECT SWITCH FOR THE EFIS TO THE ALTN POSITION.
DOES THE LEFT (RIGHT) EADI SPD FLAG STAY SHOWN?

NO → 22 REPLACE THE LEFT (RIGHT) EFIS SYMBOL GENERATOR M148 (M150)(MM 34-22-01/401).

YES → 23 DO THE EFIS BITE PROCEDURE (34-22-00, FIG. 108).

YES → 2 GO TO THE MAIN EQUIPMENT CENTER.
DOES THE CAPT (F/O) ADC FAULT BALL SHOW YELLOW?

YES → 24 REPLACE THE LEFT (RIGHT) ADC M100 (M101)(MM 34-12-01/401).

NO → 25 REMOVE THE LEFT (RIGHT) ADC M100 (M101)(MM 34-12-01/401).
EXAMINE AND REPAIR THE CIRCUIT BETWEEN THE LEFT (RIGHT) ADC CONNECTOR D423B (D351B) PINS A4 AND B4 AND TERMINAL BLOCK TB105 (TB145), PINS H146 AND H148 (H86 AND H88)(WDM 34-12-12,-22).
INSTALL THE ADC.

SPD Flag in View on L (R) EADI
Figure 108

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- EICAS (MM 31-41-00/501)
- WARNING SYSTEM (MM 31-51-00/501)
- INERTIAL REFERENCE SYSTEM (34-21-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7,11A10,11A11,11A12,11E2,11E3,11E4,11E23,11E24
11E25,11F8,11F9,11F24,11F29,11F30,11F31,11F32

MAKE SURE THESE CIRCUIT BREAKERS ARE OPEN AND ATTACH DO-NOT-CLOSE TAGS:
11A17,11F14,11F15,11F16

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
- ELECTRICAL POWER IS ON (MM 24-22-00/201)
- PITOT-STATIC SYSTEM AT AMBIENT (MM 34-11-00/501)

L (R) ADC BITE PROCEDURE

1 SET THE EICAS SELECT SWITCH, ON THE DISPLAY SELECT PANEL, TO THE LEFT OR RIGHT POSITION.
PUSH THE ADC FUNCTIONAL TEST SWITCH ON THE LEFT (RIGHT) ADC.
DOES THE ADC FAULT BALL SHOW YELLOW?

YES → **41** REPLACE THE LEFT (RIGHT) ADC, M100 (M101) (MM 34-12-01/401).

NO ↓

2 DOES THE EXTERNAL SENSOR FAULT DISPLAY SHOW A "1" OR "2" ON ONE OF THE TWO ADC?

YES → **42** FOR A "1" OR "2" ON THE LEFT ADC, REPLACE THE LEFT AOA SENSOR, TS12 (MM 34-12-03/401). FOR A "1" OR "2" ON THE RIGHT ADC, REPLACE THE RIGHT AOA SENSOR, TS13 (MM 34-12-03/401)

NO ↓

3 DOES THE EXTERNAL SENSOR FAULT DISPLAY SHOW A "3"?

YES → **43** REMOVE THE LEFT (RIGHT) ADC, M100 (M101) (MM 34-12-01/401).
EXAMINE AND REPAIR THE CIRCUIT BETWEEN THE LEFT (RIGHT) ADC, CONNECTOR D423B (D351B), PIN F15 AND PIN H15 (G15) (WDM 34-12-12,-22).
INSTALL THE ADC (MM 34-12-01/401).

NO ↓

SEE SHEET 2
(BLOCK 4)

L (R) ADC BITE Procedure
Figure 109 (Sheet 1)

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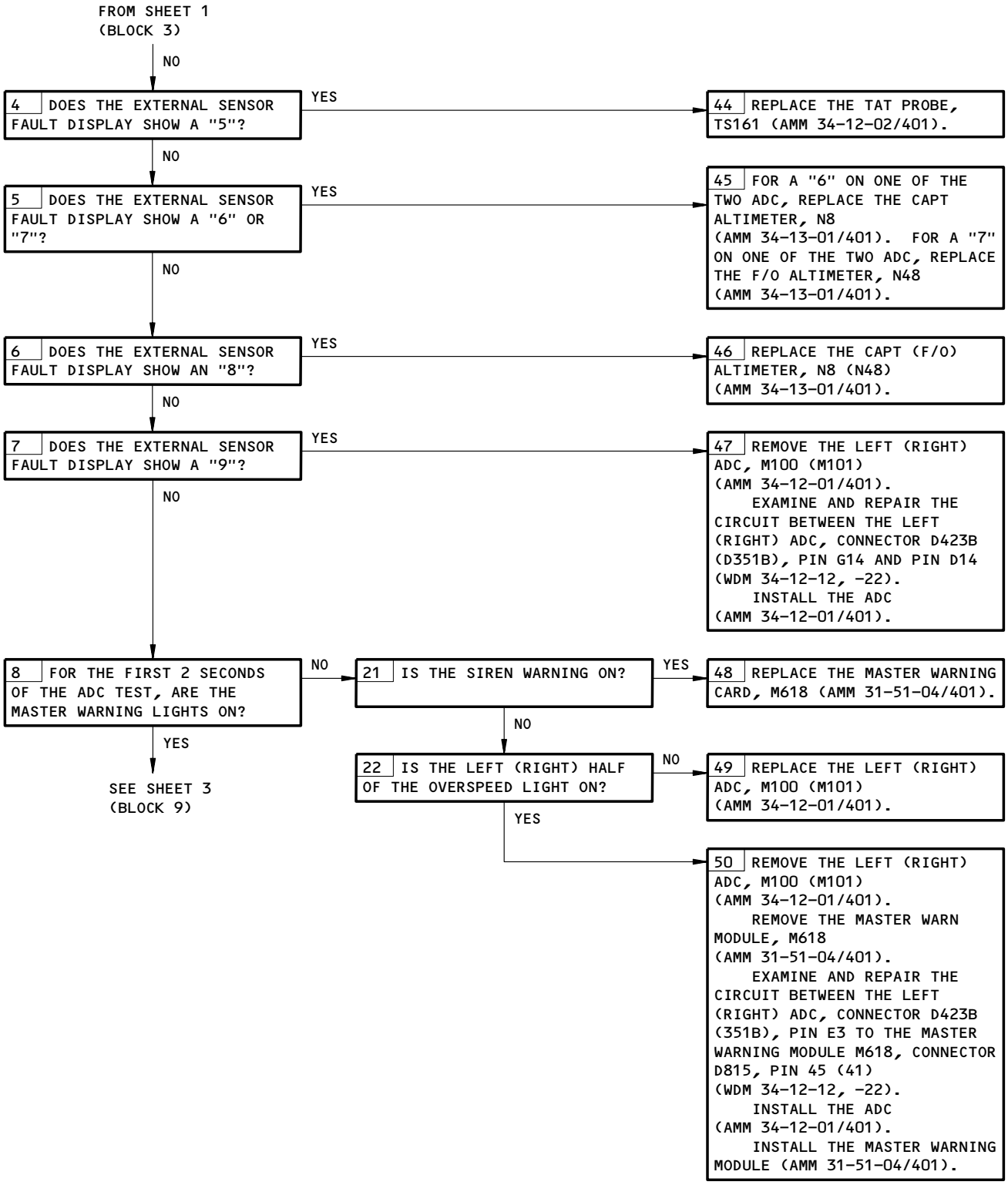

L (R) ADC BITE Procedure
Figure 109 (Sheet 2)

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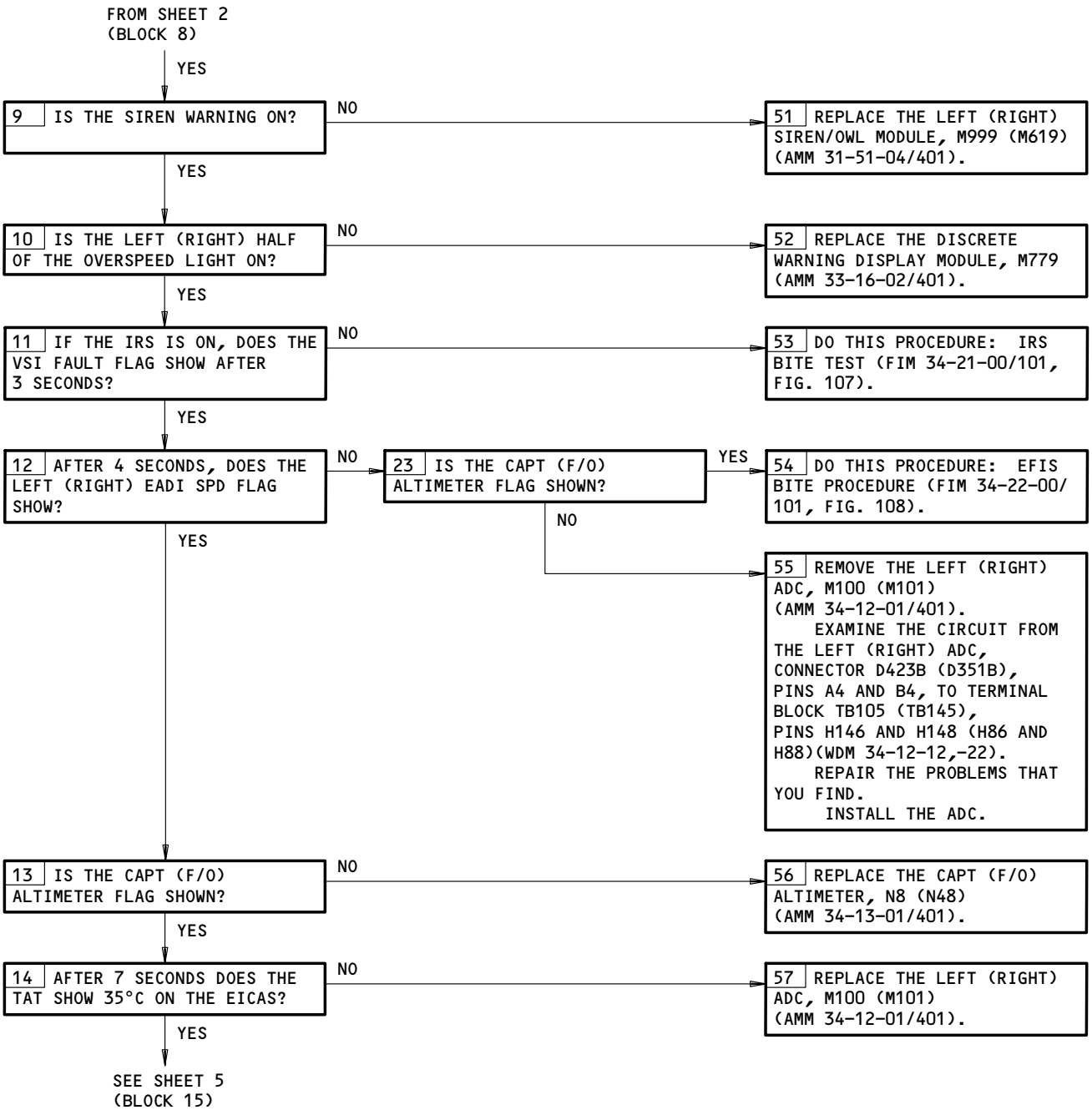

L (R) ADC BITE Procedure
Figure 109 (Sheet 3)

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L (R) ADC BITE Procedure
Figure 109 (Sheet 4)

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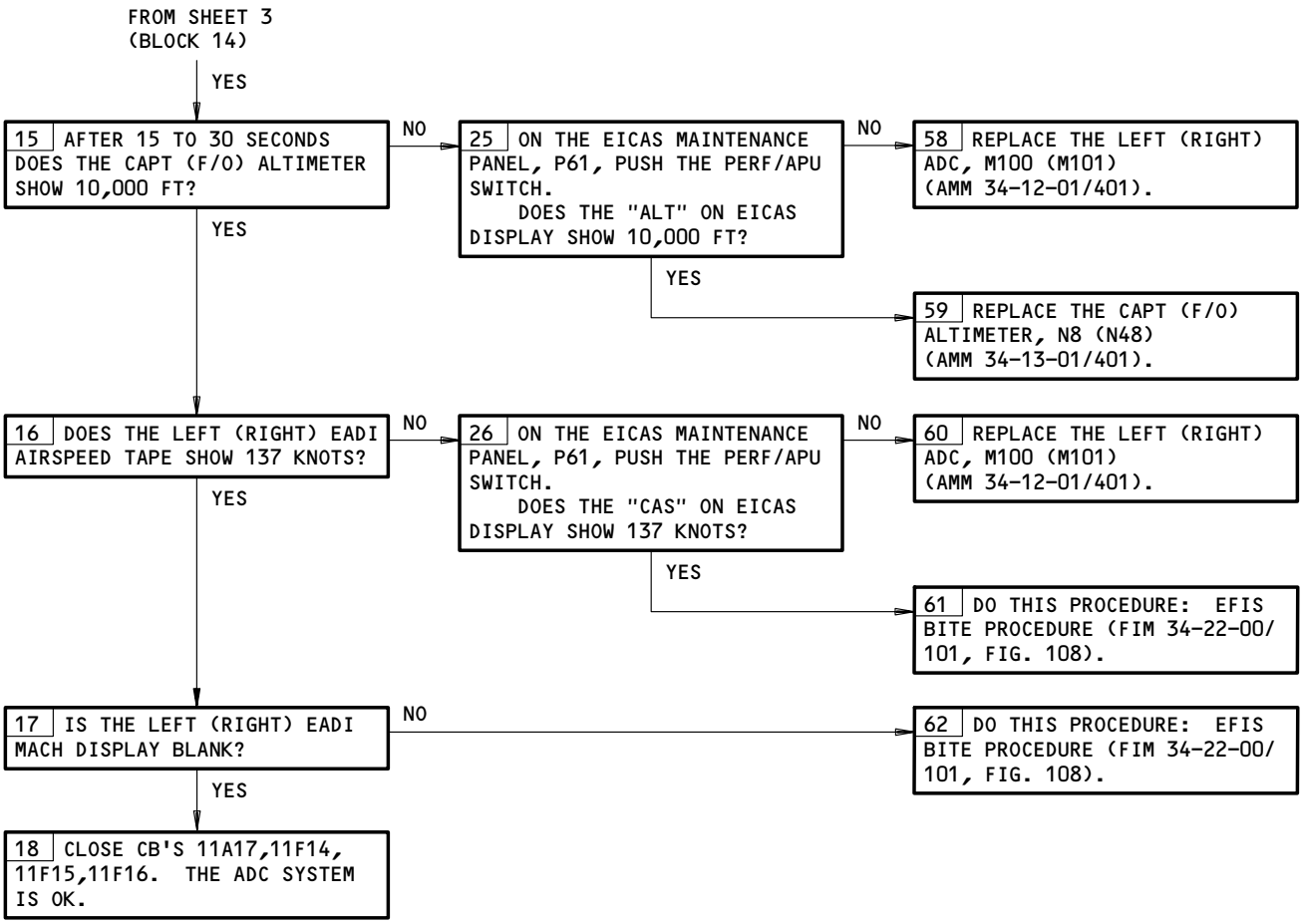

L (R) ADC BITE Procedure
Figure 109 (Sheet 5)

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L (R) EADI AIRSPEED AND/OR MACH INDICATIONS IN ERROR. SELECTING ALTN AIR DATA CORRECTS FAULT

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7,11A10,11A11,11A12,11E3,11E4,11E24,11E25,11F8,
11F9,11F24,11F29,11F30,11F31,11F32

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
ELECTRICAL POWER IS ON (MM 24-22-00/201)
PITOT-STATIC SYSTEM AT AMBIENT (MM 34-11-00/501)

1 SET THE LEFT (RIGHT) ADC TEST SWITCH, ON THE P61 TEST PANEL, TO THE "AIR DATA COMPTR" POSITION.
DOES THE LEFT (RIGHT) EADI AIRSPEED TAPE DISPLAY SHOW 137 KTS AFTER 7 SECONDS?

YES → 13 DO THE CAPT (F/O) STATIC SYSTEM PROCEDURE (34-11-00, FIG. 104, BLOCK 1).
IF THE PROBLEM CONTINUES, DO THE CAPT (F/O) PITOT SYSTEM PROCEDURE (34-11-00, FIG. 106, BLOCK 1).

NO ↓

2 DO THE MCDP GROUND TEST 30-CURRENT FAULT REPORT (22-00-03, FIG. 117, BLOCK 1).
IS THE MCDP MESSAGE "ADC L" ("ADC R") SHOWN?

YES → 14 REPLACE THE LEFT (RIGHT) ADC, M100 (M101) (MM 34-12-01/401).

NO → 15 DO THE EFIS BITE PROCEDURE (34-22-00, FIG. 108).

L (R) EADI Airspeed and/or Mach Indications in Error.
Selecting Altn Air Data Corrects Fault.
Figure 110

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1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR YOU CAN CAUSE DAMAGE TO THE CONNECTOR.

      (1) ARINC 429 data bus gives data necessary to make analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminals or at the LRU unit.

   B. Equipment
      (1) Standard multi-meter
      (2) 429EBP Data Bus Analyzer (recommended)
          JcAIR Instrumentation
          400 Industrial Parkway
          Industrial Airport, KS 66031

          429-2 Data Bus Analyzer (alternative)
          Interface Technology
          150 E. Arrow Highway
          San Dimas, CA 91773
      (3) A34011-1 Breakout Box (recommended)
          A34011-112 Breakout Box (alternative)

          NOTE: Octal labels 034, 035, 246, 251, and 252 are multiple function labels and will not display correctly in engineering units on the data bus analyzer unless the hex equipment ID = 06 is selected. For analyzers not capable of having ID selected, display the label in hexadecimal format and record the value. Set the data bus analyzer to transmit a label in hex format as listed below.

RECEIVED LABEL	TRANSMIT LABEL
034	234 or 236
035	235 or 237
251	204 or 220
252	204 or 220
-	246

          NOTE: Insert the hexadecimal value recorded for the received label. Then select engineering format to display the correct engineering value.

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ADC								
DIGITAL OUTPUT BUS CHART								
BUS NAME								
SOURCE		TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
ADC	(L C R)	A	1	B	A02 B02	429	LO	ADC APFDS BUS
ADC	(L C R)	A	2	B	A04 B04	429	LO	ADC INSTR BUS
ADC	(L C R)	A	3	B	A06 B06	429	LO	ADC ENG CONT BUS
ADC	(L C R)	A	4	B	A08 B08	429	LO	ADC GEN PRPS BUS

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ADC ID = 06

OCTAL LABELS CHART

SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI SDI	BINARY RANGE	POSITIVE SENSE	UNITS
BARO COR NO.3(MB)	A	034	BCD	8	XX	± 9999.9	ALWAYS POS	MB
BARO COR NO.3(IN)	A	035	BCD	8	XX	± 99.999	ALWAYS POS	IN HG
ALTITUDE (29.92)	A	203	BNR	16	XX	± 131,072	ABOVE SEA LEV	FEET
ALTITUDE (BARO #1)	A	204	BNR	16	XX	± 131,072	ABOVE SEA LEV	FEET
MACH	A	205	BNR	8	XX	± 4.096	ALWAYS POS	MACH
COMPUTED AIRSPEED	A	206	BNR	8	XX	± 1024	ALWAYS POS	KNOTS
MAX OPRTG SCHEDULE	A	207	BNR	8	XX	± 1024	ALWAYS POS	KNOTS
TRUE AIRSPEED	A	210	BNR	8	XX	± 2048	ALWAYS POS	KNOTS
TOTAL AIR TEMP	A	211	BNR	2	XX	± 512	ABOVE FREEZ	DEG C
ALTITUDE RATE	A	212	BNR	16	XX	± 32,768	CLIMB UP	FT/MIN
STATIC AIR TEMP	A	213	BNR	2	XX	± 512	ABOVE FREEZ	DEG C
IMPACT PRESSURE	A	215	BNR	8	XX	± 512	ALWAYS POS	MB
ALTITUDE (BARO #2)	A	220	BNR	16	XX	± 131,072	ABOVE SEA LEV	FEET
INDICATED AOA	A	221	BNR	16	XX	± 180	NOSE UP	DEG
ANGLE OF ATTACK-L	A	222	BNR	16	XX	± 180	NOSE UP	DEG
ANGLE OF ATTACK-R	A	223	BNR	16	XX	± 180	NOSE UP	DEG
TRUE AIRSPEED-D	A	230	BCD	2	XX	± 799	ALWAYS POS	KNOTS
TOTAL AIR TEMP-D	A	231	BCD	2	XX	± 99	ABOVE FREEZ	DEG C
STATIC AIR TEMP-D	A	233	BCD	2	XX	± 99	ABOVE FREEZ	DEG C
BARO COR NO.1(MB)	A	234	BCD	8	XX	± 9999.9	ALWAYS POS	MB

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ADC ID = 06								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI SDI	BINARY RANGE	POSITIVE SENSE	UNITS
BARO COR NO.1(IN)	A	235	BCD	8	XX	± 99.999	ALWAYS POS	INS HG
BARO COR NO.2(MB)	A	236	BCD	8	XX	± 9999.9	ALWAYS POS	MB
BARO COR NO.2(IN)	A	237	BCD	8	XX	± 99.999	ALWAYS POS	INS HG
CORRECTED AOA	A	241	BNR	16	XX	± 180	NOSE UP	DEG
TOTAL PRESSURE	A	242	BNR	8	XX	± 2048	ALWAYS POS	MB
STATIC PRESSURE	A	246	BNR	8	XX	± 2048	ALWAYS POS	MB
ALTITUDE (BARO #3)	A	251	BNR	16	XX	± 131,072	ABOVE SEA LEV	FEET
ALTITUDE (BARO #4)	A	252	BNR	16	XX	± 131,072	ABOVE SEA LEV	FEET
ADC DISCRETES #1	A	270	DIS	2	XX	N/A	N/A	N/A
ADC DISCRETES #2	A	271	DIS	2	XX	N/A	N/A	N/A
MAINTENANCE WD 1	A	350	DIS	2	XX	N/A	N/A	N/A
MAINTENANCE WD 2	A	351	DIS	2	XX	N/A	N/A	N/A
MAINTENANCE WD 3	A	352	DIS	2	XX	N/A	N/A	N/A
MAINTENANCE WD 4	A	353	BCD	2	XX	N/A	N/A	N/A
MAINTENANCE WD 5	A	354	BNR	2	XX	± 63.999	ALWAYS POS	INS HG

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ADC				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
SENSOR #1 HEAT ON	270	11	#1 HTR ON	#1 HTR OFF
SENSOR #2 HEAT ON	270	12	#2 HTR ON	#2 HTR OFF
ADC INVALID	270	13	ADC FAIL	ADC OK
PIT/STAT HEAT ON L	270	14	L P/S ON	L P/S OFF
PIT/STAT HEAT ON R	270	15	R P/S ON	R P/S OFF
TAT PROBE HEAT ON	270	16	TAT HTR ON	HTR OFF
L AOA HEAT ON	270	17	L AOA ON	L AOA OFF
R AOA HEAT ON	270	18	R AOA ON	R AOA OFF
OVERSPEED	270	19	OVERSPEED	NOT OVRSPD
ONSIDE AOA FAIL	270	20	ONSIDE FL	ONSIDE OK
AOA UNIQUE	270	21	UNIQUE	AVERAGE
VMO ALTERNATE #1	270	22	VMO=ALT #1	VMO NOT #1
VMO ALTERNATE #2	270	23	VMO=ALT #2	VMO NOT #2
VMO ALTERNATE #3	270	24	VMO=ALT #3	VMO NOT #3
VMO ALTERNATE #4	270	25	VMO=ALT #4	VMO NOT #4
SSEC ALTERNATE	270	26	ALTERNATE	NORMAL
AOAC ALTERNATE	270	27	ALTERNATE	NORMAL
BARO PORT "A"	270	28	BARO "A"	BARO "B"
ZERO SSEC (MACH)	270	29	NO MACH	MACH
ZERO SSEC (AOA)	271	11	NO AOA	AOA
EXT AOA MON (FAIL)	271	12	PRI AOA FL	PRI AOA OK

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ADC				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
#4 BARO ALT=#1	271	16	#4 ALT=#1	#4 NOT #1
#4 BARO ALT=#2	271	17	#4 ALT=#2	#4 NOT #2
#4 BARO ALT=#3	271	18	#4 ALT=#3	#4 NOT #3
AOA ROT REF	271	19	#1=#2	#1=-#2
SDI PAR SET	271	20	SET	NOT SET
L AOA VANE TEST	350	11	L AOA FAIL	L AOA OK
R AOA VANE TEST	350	12	R AOA FAIL	R AOA OK
TAT INPUT TEST	350	15	TAT FAIL	TAT OK
BARO #1 TEST	350	16	BARO #1 FL	BARO #1 OK
BARO #2 TEST	350	17	BARO #2 FL	BARO #2 OK
BARO #3 TEST	350	18	BARO #3 FL	BARO #3 OK
A/C TYPE PROG TEST	350	19	PROG FAIL	PROG OK
A/C TYPE CONST TST	350	20	CONST FAIL	CONST OK
OSPD HDWR TEST	350	21	OSPD FAIL	OSPD OK
A TO D TEST	350	22	A TO D FL	A TO D OK
PROCESSOR TEST	350	23	PROC FAIL	PROC OK
RAM TEST	350	24	RAM FAIL	RAM OK
PROG MEM TEST	350	25	PROM FAIL	PROM OK
PS SENS PER TEST	350	26	SENSOR FL	SENSOR OK
PS SENS TEMP TEST	350	27	SENSOR FL	SENSOR OK
PS CALIB TEST	350	28	CALIB FAIL	CALIB OK
F/D CONVERSION TST	350	29	CONV FAIL	CONV OK

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ADC				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
PT SENS PER TEST	351	11	SENSOR FL	SENSOR OK
PT SENS TEMP TEST	351	12	SENSOR FL	SENSOR OK
PT CALIB TEST	351	13	CALIB FAIL	CALIB OK
ARINC XMTR TEST	351	14	XMTR FAIL	XMTR OK
ARINC XMTR TEST	351	15	XMTR FAIL	XMTR OK
ARINC XMTR TEST	351	16	XMTR FAIL	XMTR OK
POWER SUPPLY TEST	351	17	PWR SUP FL	PWR SUP OK
AOA COMPARE TEST	351	18	COMP FAIL	COMP OK
PS=PT	351	19	PS NOT PT	PS=PT
AVERAGE AOA TEST	351	20	INVALID	AOA OK
TEMP PS=TEMP PT	351	21	PS NOT PT	PS=PT
PROG SEQ TEST	351	22	SEQ FAIL	SEQ OK
PS PLL	351	23	PS PLL FL	PS PLL OK
PT PLL	351	24	PT PLL FL	PT PLL OK
EAROM TEST	351	25	EAROM FL	EAROM OK
BARO #4 TEST	351	26	#4=NCD	#4=PRG PIN
VMO TEST	351	27	>1 VMO	<2 VMO
SDI PARITY	351	28	PAR FAIL	PAR OK
CKSUM CHIP1	352	11	#1 FAIL	#1 OK
CKSUM CHIP2	352	12	#2 FAIL	#2 OK
CKSUM CHIP3	352	13	#3 FAIL	#3 OK
CKSUM CHIP4	352	14	#4 FAIL	#4 OK

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ADC				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
PS MEM CHECK	352	15	PS MEM FL	PS MEM OK
PT MEM CHECK	352	16	PT MEM FL	PT MEM OK
A/C TYPE MEM CHECK	352	17	MEM FAIL	MEM OK
A/C TYPE LSB	352	24	LSB=0	LSB=1
A/C TYPE LSB+1	352	25	LSB+1=0	LSB+1=1
A/C TYPE LSB+2	352	26	LSB+2=0	LSB+2=1
A/C TYPE LSB+3	352	27	LSB+3=0	LSB+3=1
A/C TYPE MSB	352	28	MSB=0	MSB=1
A/C TYPE PARITY	352	29	PRTY ODD	PRTY EVEN

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AIR DATA INSTRUMENTS

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ALTIMETER - CAPTAIN, N8	--	1	FLT COMPT, P1	34-13-01
ALTIMETER - FIRST OFFICER, N48	--	1	FLT COMPT, P3	34-13-01
ALTIMETER - STANDBY, N23	--	1	FLT COMPT, P1	34-13-06
CIRCUIT BREAKERS -	--		FLT COMPT, P11	*
ALTM LEFT, C584		1	11E2	*
ALTM RIGHT, C585		1	11E23	*
STBY ALTM VIB, C591		1	11A8	*
COMPUTERS - (34-12-00/101)				
AIR DATA LEFT, M100				
AIR DATA RIGHT, M101				
INDICATOR - STANDBY AIRSPEED, N22	--	1		34-13-05
MODULE - (34-16-00/101)				
ALTITUDE ALERT, M617			FLT COMPT, P1	
PANEL - (22-11-00/101)				
AFCS MODE CONTROL, M90				
SWITCHES - (34-12-00/101)				
CAPTAIN ADC INSTRUMENT SOURCE SELECT, S482				
FIRST OFFICER ADC INSTRUMENT SOURCE SELECT, S483				

* SEE THE WDM EQUIPMENT LIST

Air Data Instruments - Component Index
Figure 101

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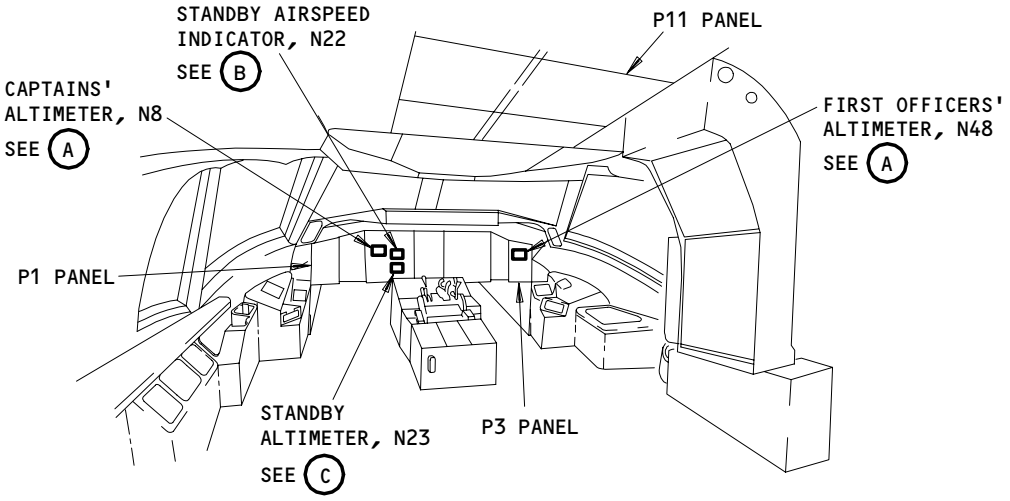
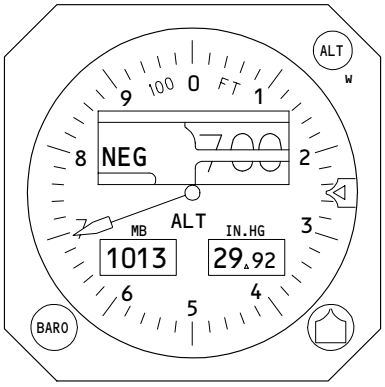
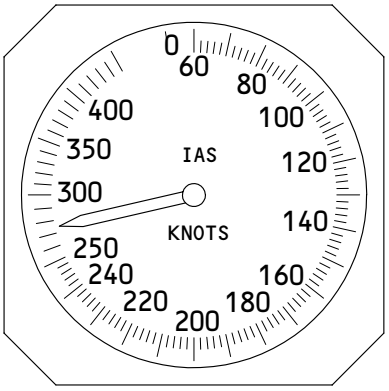


FLIGHT COMPARTMENT



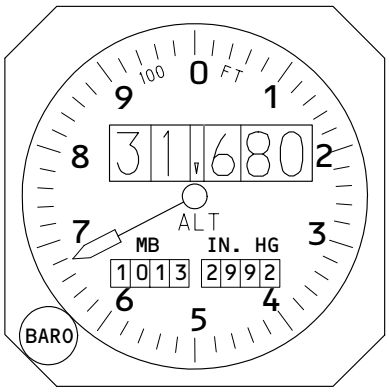
ALTIMETER (WITH OFF FLAG)

A



STANDBY AIRSPEED INDICATOR

B



STANDBY ALTIMETER

C

Air Data Instruments - Component Location
Figure 102

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STANDBY AIRSPEED INDICATOR ERROR

PREREQUISITES

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

MAKE SURE THIS CIRCUIT BREAKER IS CLOSED:
11A8

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

1 PUSH THE STATUS SWITCH ON THE EICAS DISPLAY SELECT PANEL.
DOES THE EICAS MESSAGE "ELEVATOR FEEL" SHOW ON THE BOTTOM DISPLAY UNIT?

NO → 20 REPLACE THE STANDBY AIR-SPEED INDICATOR, N22 (AMM 34-13-05/401).

YES → 21 DO THIS PROCEDURE: FOR (FIM 34-11-00/101, FIG. 106) FOR AUX PITOT SYSTEM.

Standby Airspeed Indicator Error
Figure 103

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ALTITUDE ALERT SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ALTIMETER - (FIM 34-13-00/101)				
CAPTAIN, N8				
FIRST OFFICER, N48				
CIRCUIT BREAKER -			FLT COMPT, P11	
AURAL WARN SPKR LEFT, C567	--	1	11B16	*
AURAL WARN SPKR RIGHT, C568	--	1	11H35	*
WARN ELEX A, C565	--	1	11J34	*
WARN ELEX B, C566	--	1	11B18	*
LIGHT - ALTITUDE ADVISORY	--	2	FLT COMPT, P1, P3, ALTIMETER N8, N48	*
LIGHT - ALTITUDE ALERT, L136	--	1	FLT COMPT, P1	*
MODULE - ALTITUDE ALERT, M617	--	1	119AL, MAIN EQUIP CTR, P51	34-16-01
MODULE - (FIM 32-09-03/101)				
PSEU, M162				
SWITCH - (FIM 34-12-00/101)				
ALTERNATE VMO/MMO SELECT, S591 1				
CAPTAIN ADC SOURCE SELECT, S482				
SWITCH - (FIM 32-44-00/101)				
PARKING BRAKE, S459				
UNIT (FIM 31-31-00/101)				
DIGITAL FLIGHT DATA ACQUISITION, M138				

* SEE THE WDM EQUIPMENT LIST

1 SAS 275-999

Altitude Alert System - Component Index
Figure 101

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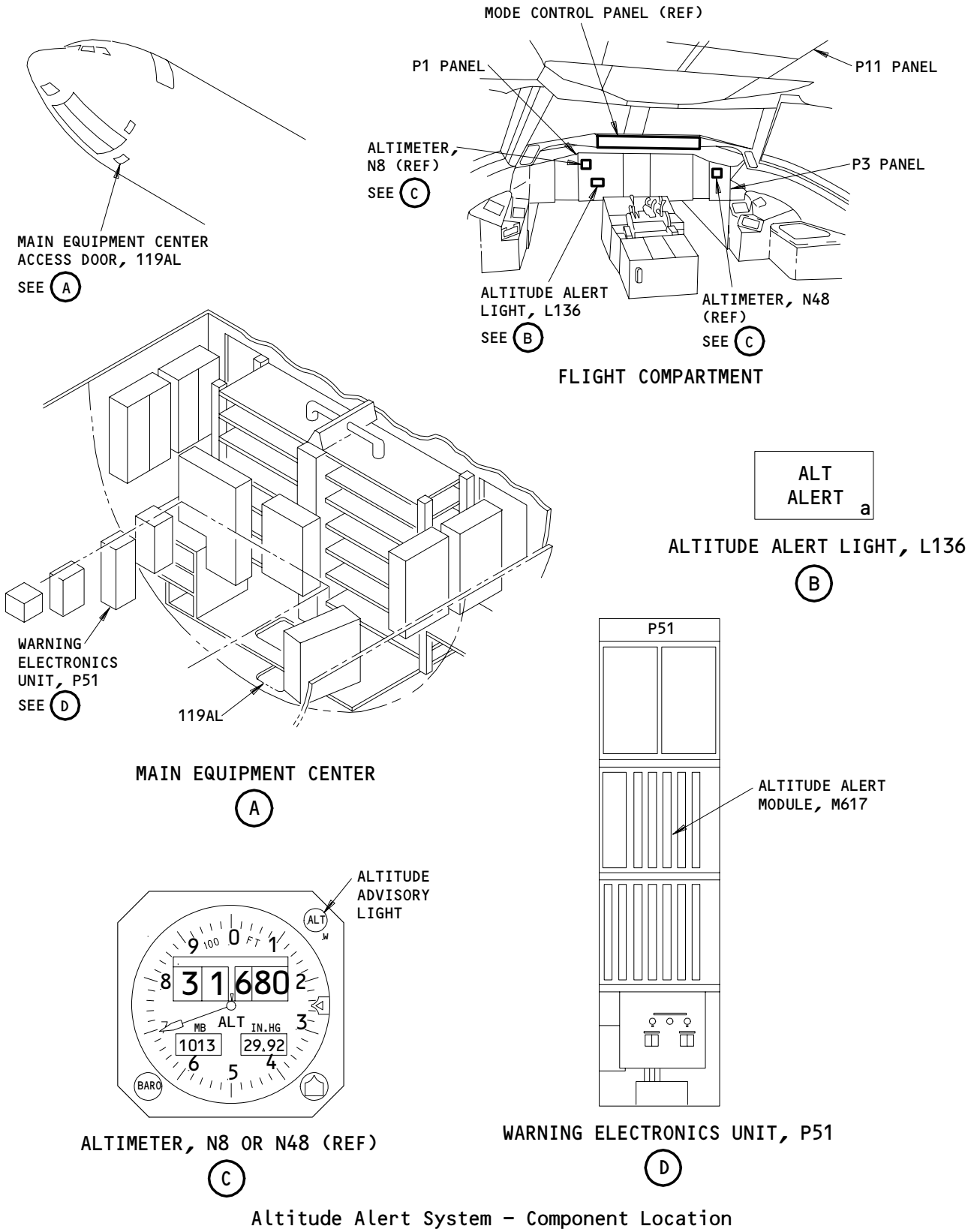

Altitude Alert System - Component Location
Figure 102

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
AUTOPILOT SYSTEM (AMM 22-10-00/501)
ADC SYSTEM (AMM 34-12-00/501)
EICAS (AMM 34-41-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11B16,11B18,11H35,11J34

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

EQUIPMENT: PROXIMITY SENSOR ACTUATOR/DEACTUATOR SET A27092-61 (TWO DEACTUATORS)

ALTITUDE ALERT SYSTEM FAULT ISOLATION

1 SET THE LEFT AND RIGHT ADC SOURCE SELECT SWITCHES TO THE "NORM" POSITION. SET THE PARKING BRAKE.
SAS 275-999;
SET THE VMO/MMO SELECT SWITCH TO THE "NORM" POSITION.
SET THE ALTITUDE ON THE MODE CONTROL PANEL (MCP) TO 10,000 FEET ABOVE THE AIRPORT ALTITUDE. ADJUST THE BARO SET SWITCH ON THE LEFT AND RIGHT ALTIMETER TO THE NEAREST THOUSAND ±40 FEET.
DECREASE THE ALTITUDE ON THE MCP TO 600 ±100 FEET ABOVE THE ALTIMETER ALTITUDE.
DO THE ALTITUDE LIGHTS ON THE LEFT AND RIGHT ALTIMETERS COME ON?

NO → **21** SET THE LEFT ADC SOURCE SELECT SWITCH TO THE "ALTN" POSITION.
DOES THE ALTITUDE ALERT LIGHT ON THE LEFT AND RIGHT ALTIMETERS COME ON?

NO → **51** REPLACE THE ALTITUDE ALERT MODULE, M617 (AMM 34-16-01/401).
IF THE PROBLEM CONTINUES, REMOVE THE ALTITUDE ALERT MODULE.
EXAMINE THE CIRCUIT FROM CONNECTOR D821, PIN 34, TO THE LEFT ALTIMETER N8, CONNECTOR D111, PIN 12 (WDM 34-16-11).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE ALTITUDE ALERT MODULE.

YES → **22** DO THIS PROCEDURE: AUTO-FLIGHT FLIGHT FAULTS BITE PROCEDURE (FIM 22-00-02/101, FIG. 101).
DO SOME OF THESE INDICATIONS SHOW?
MCP
MCP/FCC-L
MCP/FCC-C

YES → **52** REPLACE THE AFCS MODE CONTROL PANEL, M90 (AMM 22-11-02/401).

NO → **53** DO THIS PROCEDURE: L (R) ADC BITE PROCEDURE (FIM 34-12-00/101, FIG. 109).

YES → **2** SET THE ALTITUDE ON THE MCP TO THE ALTIMETER ALTITUDE.
DO THE ALTITUDE LIGHTS ON THE LEFT AND RIGHT ALTIMETERS GO OFF?

NO → **54** REPLACE THE ALTITUDE ALERT MODULE, M617 (AMM 34-16-01/401).

YES → SEE SHEET 2 (BLOCK 3)

Altitude Alert System Fault Isolation
Figure 103 (Sheet 1)

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FROM SHEET 1
(BLOCK 2)

YES

3 SET THE ALTITUDE ON THE MCP TO 600 ±100 FEET ABOVE THE ALTIMETER ALTITUDE.
DO THESE TEST INDICATIONS OCCUR?
- THE ALTITUDE ALERT LIGHTS COME ON
- THE EICAS MESSAGE "ALTITUDE ALERT" SHOWS ON THE TOP DISPLAY
- THE AURAL (OWL) SOUND IS HEARD FROM THE LEFT AND RIGHT AURAL WARNING SPEAKERS

YES → SEE SHEET 3 (BLOCK 4)

NO →

23 DOES THE YELLOW EICAS MESSAGE "PARKING BRAKE" SHOW ON THE TOP DISPLAY?

NO → **55** REPLACE THE PARKING BRAKE SWITCH, S591 (AMM 32-44-08/401).

YES →

24 DOES THE ALTITUDE ALERT LIGHT COME ON?

NO → **56** REPLACE THE ALTITUDE ALERT MODULE, M617 (AMM 34-16-01/401).
IF THE PROBLEM CONTINUES, REMOVE THE ALTITUDE ALERT MODULE.
EXAMINE THE CIRCUIT FROM CONNECTOR D821, PIN 66, TO THE ALTITUDE ALERT LIGHT, L136, PIN 32 (WDM 34-16-11).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE ALTITUDE ALERT MODULE.

YES →

25 DOES THE EICAS MESSAGE "ALTITUDE ALERT" SHOW ON THE TOP DISPLAY?

NO → **57** REPLACE THE ALTITUDE ALERT MODULE, M617 (AMM 34-16-01/401).
IF THE PROBLEM CONTINUES, REMOVE THE ALTITUDE ALERT MODULE AND THE LEFT EICAS COMPUTER, M10181 (AMM 31-41-02/401).
EXAMINE THE CIRCUIT FROM THE ALTITUDE ALERT MODULE, CONNECTOR D821, PIN 65, TO THE LEFT EICAS COMPUTER, CONNECTOR D881B, PIN E14 (WDM 34-16-11).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE ALTITUDE ALERT MODULE AND LEFT EICAS COMPUTER.

YES → SEE SHEET 3 (BLOCK 26)

Altitude Alert System Fault Isolation
Figure 103 (Sheet 2)

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FROM SHEET 2
(BLOCK 3)

YES

FROM SHEET 2
(BLOCK 25)

YES

26 IS THE AURAL (OWL) SOUND HEARD FROM THE LEFT OR RIGHT AURAL WARNING SPEAKER?

NO

58 REPLACE THE ALTITUDE ALERT MODULE, M617 (AMM 34-16-01/401).

YES

59 REPLACE THE LEFT (RIGHT) SIREN/OWL AURAL WARNING MODULE, M999 (M619) (AMM 31-51-04/401).

IF THE PROBLEM CONTINUES, REMOVE THE ALTITUDE ALERT MODULE, M617 (AMM 34-16-01/401) AND THE LEFT (RIGHT) SIREN/OWL AURAL WARNING MODULE. EXAMINE THE CIRCUIT FROM CONNECTOR D821, PIN 31, TO THE LEFT (RIGHT) SIREN/OWL AURAL WARNING MODULE, CONNECTOR D1487 (D817), PIN 51 (WDM 34-16-11). REPAIR THE PROBLEMS THAT YOU FIND.

INSTALL THE ALTITUDE ALERT MODULE, AND THE LEFT (RIGHT) SIREN/OWL AURAL WARNING MODULE.

4 DO THESE STEPS:

1. RELEASE THE PARKING BRAKE
2. PUT DEACTUATOR ON THE DOWN LOCKED SENSORS, S232 AND S254, ON THE NOSE LANDING GEAR.

DOES THE EICAS MESSAGE "ALTITUDE ALERT" SHOW ON THE TOP EICAS DISPLAY?

NO

60 DO THESE STEPS:

1. SET THE PARKING BRAKE
2. REMOVE THE DEACTUATOR FROM THE DOWN AND LOCKED SENSORS, S232 AND S254, ON THE NOSE LANDING GEAR
3. DO THE PSEU BITE PROCEDURE (FIM 32-09-03/101, FIG. 103, BLOCK 1).

YES

5 DO THESE STEPS:

1. SET THE PARKING BRAKE
2. REMOVE THE DEACTUATORS FROM THE DOWN AND LOCKED SENSORS, S232 AND S254, ON THE NOSE LANDING GEAR
3. SET THE ALTITUDE ON THE MCP TO 900 FEET GREATER THAN THE ALTIMETER ALTITUDE.

DOES THE ALTITUDE ALERT LIGHT GO OFF?

NO

61 REPLACE THE ALTITUDE ALERT MODULE, M617 (AMM 34-16-01/401).

YES

6 THE SYSTEM IS OK.

Altitude Alert System Fault Isolation
Figure 103 (Sheet 3)

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INERTIAL REFERENCE SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
CIRCUIT BREAKERS	--		FLIGHT COMPARTMENT, P11	*
IRS CENTER, C613			11F21	*
IRS LEFT, C611			11F1	*
IRS RIGHT, C612			11F22	*
CIRCUIT BREAKERS	--		FLIGHT COMPARTMENT, P6	*
IRS C, C621			6D4	*
IRS L, C614			6D3	*
IRS R, C620			6D5	*
COMPUTER - (REF 34-12-00, FIG. 101)				
AIR DATA L, M100				
AIR DATA R, M101				
PANEL - INERTIAL REFERENCE MODE, M59	--	1	FLIGHT COMPARTMENT, P5	34-21-02
RELAY - (REF 31-01-06, FIG. 101)				
CENTER BUS ISOLATION, K123				
IRS DC POWER DISCONNECT, K137				
SWITCH - (REF 34-12-00, FIG. 101)				
CAPT ADC INSTR SOURCE SELECT, S482				
F/O ADC INSTR SOURCE SELECT, S483				
SWITCH - (REF 34-22-00, FIG. 101)				
R IRS INSTR SOURCE SELECT, S12				
UNIT - CENTER INERTIAL REFERENCE, M160	--	1	119AL, MAIN EQUIP CTR, E1-6	34-21-01
UNIT - LEFT INERTIAL REFERENCE, M159	--	1	119AL, MAIN EQUIP CTR, E1-6	34-21-01
UNIT - RIGHT INERTIAL REFERENCE, M161	--	1	119AL, MAIN EQUIP CTR, E1-6	34-21-01

* SEE THE WDM EQUIPMENT LIST

Inertial Reference System - Component Index
Figure 101

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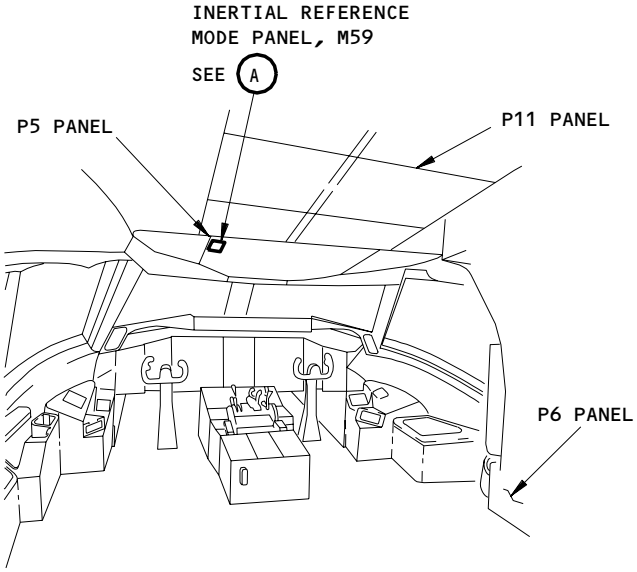
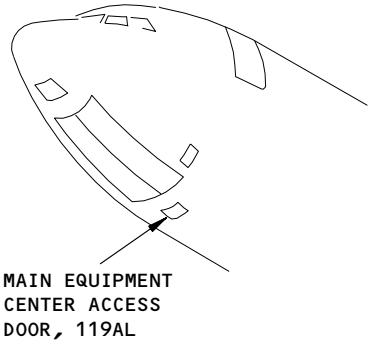
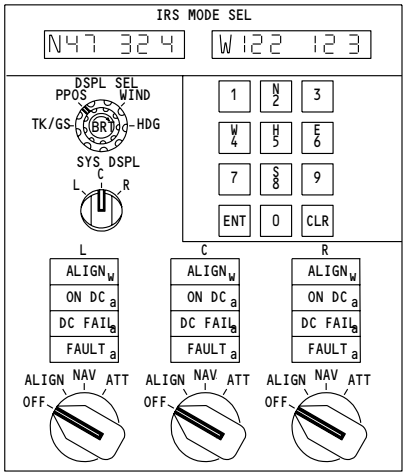


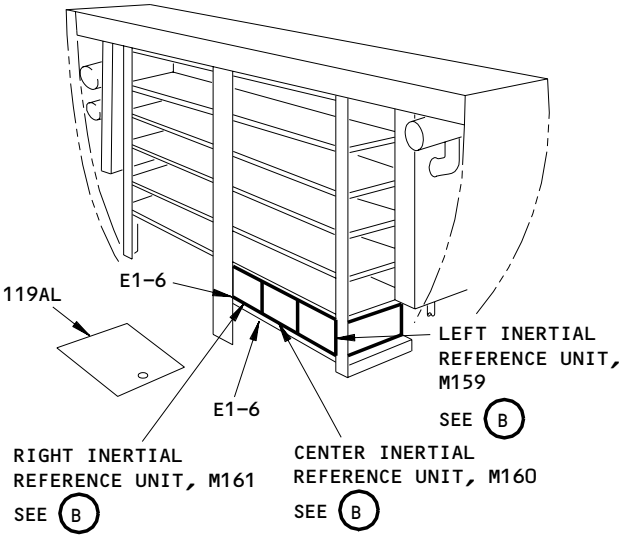
FLIGHT COMPARTMENT



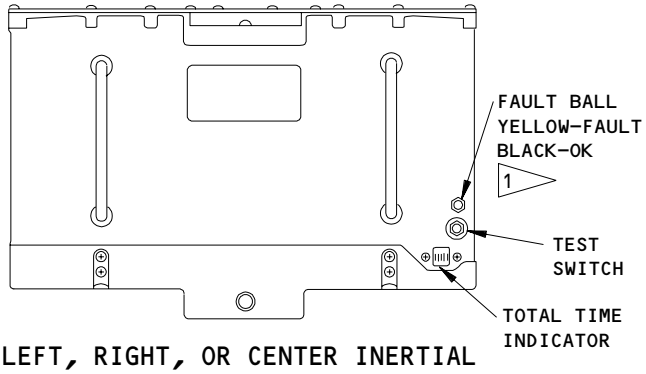


INERTIAL REFERENCE MODE PANEL, M59

A



MAIN EQUIPMENT CENTER



LEFT, RIGHT, OR CENTER INERTIAL
REFERENCE UNIT, M159, M161, M160

B

1 AIRPLANES WITH -110 IRU'S AND SUBSEQUENT;
NO FAULTBALL INTICATOR IS INSTALLED.
THE CHASSIS INDICATOR HOLE CONTAINS A PLUG.

Inertial Reference System - Component Location
Figure 102

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CAPT (F/O) RDMI
HDG FLAG IN VIEW.
ALTN IRS CORRECTS.

PREREQUISITES
ELECTRICAL POWER (MM 24-22-00/201)
F/O (CAPT) IRS INSTR SOURCE SELECT SW IN THE USUAL POSITION
CB'S: 11A6,11F25,11F1,11F21,11F22,6D3,6D4,6D5

1 REMOVE THE R (L) IRU M161 (M159) (MM 34-21-01/401). REMOVE THE L (R) RDMI N3 (N43)(MM 34-22-05/401). EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE R (L) IRU, M161 (M159), TO THE L (R) RDMI, N3 (N43); CONNECTOR D371B (D367B), PINS C10,C11, TO CONNECTOR D645 (D647), PINS 41,42 (WDM 34-21-21,-11; 34-22-81,-91).
INSTALL THE IRU AND THE RDMI.

Capt (F/O) RDMI HDG Flag In View. Altn IRS Corrects.
Figure 103

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CAPT (F/O) VSI OFF FLAG IN VIEW. ALTN AIR DATA DOESN'T CORRECT

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6D3,6D4,6D5,11A10,11A11,11A12,11E5,11E26,11F1,
11F21,11F22,11F30,11F31,11F32

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)
F/O (CAPT) IRS INSTR SOURCE SELECT SW IN THE USUAL POSITION

1 AIRPLANES WITH -110 IRUs AND SUBSEQUENT;
EXAMINE THE L (R) IRU FAULT LIGHT ON THE IRMP.
IS THE FAULT LIGHT ON?
AIRPLANES WITH -109 IRUs AND PREVIOUS;
EXAMINE THE L (R) IRU FAULT-BALL.
IS THE FAULTBALL YELLOW?

YES → 20 REPLACE THE L (R) IRU, M159 (M161)(AMM 34-21-01/401).

NO ↓

4 EXAMINE THE L (R) YAW DAMPER MODULE, M522 (M523), FAULT DISPLAY.
IS THE L IRU (R IRU) FAULT MESSAGE SHOWN?

NO → 24 REPLACE THE CAPT (F/O) VSI OR RA/VSI, N9 (N49) (AMM 34-22-06/401 [1] OR AMM 34-22-09/401 [2]).

YES → 25 REMOVE THE L (R) IRU, M159 (M161)(AMM 34-21-01/401).
REMOVE THE CAPT (F/O) VSI, N9 (N49)(AMM 34-22-06/401).
EXAMINE THE CIRCUIT FROM THE L (R) IRU, M159 (M161), TO THE CAPT (F/O) VSI, N9 (N49); CONNECTOR D367B (D371B), PINS G7,G8, TO CONNECTOR D113 (D717), PINS 30,31 (WDM 34-21-11,-21).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE IRU AND THE VSI.

[1] AIRPLANES WITH VSI
[2] AIRPLANES WITH RA/VSI

Capt (F/O) VSI Off Flag in View. Altn Air Data Doesn't Correct
Figure 104

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CAPT (F/O) VSI OFF FLAG IN VIEW. ALTN AIR DATA CORRECTS

PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
CAPT (F/O) IRS AND ADC INSTR SOURCE SELECT SWITCHES IN THE USUAL POSITIONS

CB'S: 11E5,11E26,11F1,11F21,11F22,6D3,6D4,6D5,11A10, 11A11,11A12,11F30,11F31,11F32

1 EXAMINE THE L (R) ADC FAULT BALL.
IS THE FAULT BALL YELLOW?

- YES → **31** REPLACE THE L (R) ADC M100 (M101) (MM 34-12-01/401).
- NO ↓

2 DO THE MCDP GROUND TEST -30 CURRENT FAULT REPORT (22-00-03, FIG. 117).
SHOW AND MAKE A RECORD OF ALL CURRENT OP FAULTS.
IS THE MCDP MESSAGE "ADC/IRU L", "ADC/IRU C", OR "ADC/IRU R" SHOWN?

- NO → SEE SHEET 2 (BLOCK 39)
- YES ↓

21 ARE THE TWO MCDP MESSAGES, "ADC/IRU R" AND "ADC/IRU C" BOTH SHOWN WITH THE CAPT AND F/O IRS AND ADC SOURCE SELECT SWITCHES IN THE USUAL POSITION ("ALTN" LEGEND NOT SHOWN)?

- YES → **32** REPLACE THE R AIR DATA COMPUTER M100 (MM 34-12-01/401).
- NO ↓

22 IS THE MCDP MESSAGE "ADC/IRU" SHOWN WITH THE F/O IRS SOURCE SELECT SWITCH IN THE USUAL POSITION?

- YES → SEE SHEET 2 (BLOCK 25)
- NO ↓

23 IS THE MCDP MESSAGE "ADC/IRU C" SHOWN WITH THE F/O ADC SOURCE SELECT SWITCH IN THE USUAL POSITION?

- YES → SEE SHEET 2 (BLOCK 26)
- NO ↓

24 SET THE CAPT IRS SOURCE SELECT SWITCH TO THE ALTN POSITION.
MAKE SURE THAT THE SYSTEMS THAT FOLLOW ARE ENERGIZED:
AIR DATA COMPUTING SYSTEM (MM 34-12-00/501)
INERTIAL REFERENCE SYSTEM (MM 34-21-00/501)
ALIGN THE INERTIAL REFERENCE UNITS IN THE NAV MODE.
DO THE MCDP GROUND TEST 30 - CURRENT FAULT REPORT (22-00-03, FIG. 117).
SHOW AND MAKE A REOCRD OF ALL CURRENT OP FAULTS.
IS THE MCDP MESSAGE "ADC/IRU L" SHOWN?

- YES → **33** REPLACE THE L INERTIAL REFERENCE UNIT M159 (MM 34-21-01/401).
- NO → **34** REPLACE THE L AIR DATA COMPUTER M100 (MM 34-12-01/401).

Capt (F/O) VSI Off Flag In View. Altn Air Data Corrects
Figure 104A (Sheet 1)

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FROM SHEET 1 (BLOCK 2)

FROM SHEET 1 (BLOCK 23)

FROM SHEET 1 (BLOCK 22)

25 SET THE F/O IRS INSTR SOURCE SELECT SWITCH TO THE ALTN POSITION.
MAKE SURE THAT THE SYSTEMS THAT FOLLOW ARE ENERGIZED:
AIR DATA COMPUTING SYSTEM (MM 34-12-00/501)
INERTIAL REFERENCE SYSTEM (MM 34-21-00/501)
ALIGN THE INERTIAL REFERENCE UNITS IN THE NAV MODE.
DO THE MCDP GROUND TEST 30 - CURRENT FAULT REPORT (22-00-03, FIG. 117).
SHOW AND MAKE A RECORD OF ALL CURRENT OP FAULTS.
IS THE MCDP MESSAGE "ADC/IRU R" SHOWN?

YES → 35 REPLACE THE R INERTIAL REFERENCE UNIT M161 (MM 34-21-01/401).

NO → 36 REPLACE THE R AIR DATA COMPUTER M101 (MM 34-12-01/401).

YES

26 SET THE F/O IRS INSTR SOURCE SELECT SWITCH TO THE ALTN POSITION.
MAKE SURE THAT THE SYSTEMS THAT FOLLOW ARE ENERGIZED:
AIR DATA COMPUTING SYSTEM (MM 34-12-00/501)
INERTIAL REFERENCE SYSTEM (MM 34-21-00/501)
ALIGN THE INERTIAL REFERENCE UNITS IN THE NAV MODE.
DO THE MCDP GROUND TEST 30 - CURRENT FAULT REPORT (22-00-03, FIG. 117).
SHOW AND MAKE A RECORD OF ALL CURRENT OP FAULTS.
IS THE MCDP MESSAGE "ADC/IRU C" SHOWN?

YES → 37 REPLACE THE C INERTIAL REFERENCE UNIT M160 (MM 34-21-01/401).

NO → 38 REPLACE THE R AIR DATA COMPUTER M101 (MM 34-12-01/401).

NO → 39 REPLACE THE L (C,R) IRU M159 (M161,M160) (MM 34-21-01/401).

Capt (F/O) VSI OFF Flag In View. Altn Air Data Corrects
Figure 104A (Sheet 2)

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PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11F1,11F21,11F22,6D3,6D4,6D5

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

IRS INDICATES IRS DC FAIL

1 REMOVE THE L, R, OR C IRU, M159,M161 OR M160 (AMM 34-21-01/401).
DO A CONTINUITY CHECK BETWEEN THE IRS L, R, OR C CIRCUIT BREAKERS (6D3,6D4, 6D5), AS APPLICABLE, AND THE L, R, OR C IRU CONNECTOR D367C,D371C, OR D369C, PIN 7.
IS THERE CONTINUITY?

NO → 10 WAS THE CONTINUITY CHECK BETWEEN THE IRS R CIRCUIT BREAKER (6D5) AND THE R IRU CONNECTOR D371C, PIN 7, DONE?

YES → 20 REPAIR THE CIRCUIT FROM THE IRS R CIRCUIT BREAKER (6D4) TO THE R IRU CONNECTOR D371C, PIN 7 (WDM 34-21-21).
INSTALL THE IRU (AMM 34-21-01/401).

NO → 21 REPLACE THE IRS DC POWER DISCONNECT RELAY, K137 (WDM 34-21-11,-31).
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT BETWEEN THE IRS L OR C CIRCUIT BREAKERS (6D3,6D5), AS APPLICABLE, AND THE L OR C IRU CONNECTOR D367C OR D369C, PIN 7 (WDM 34-21-11,-31).
INSTALL THE IRU (AMM 34-21-01/401).

YES → 22 DO A TEST ON THE IRU CONNECTOR D367C (LEFT), D371C (RIGHT), OR D369C (CENTER), PIN 8, FOR A GROUND. REPAIR THE CIRCUIT IF IT IS NECESSARY (WDM 34-21-11,-21,-31).
INSTALL THE IRU (AMM 34-21-01/401).

IRS Indicates IRS DC Fail
Figure 105

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ENTRY INOP TO SINGLE IRS (ALIGN FLASHES AFTER SECOND ENTRY). POSITION ENTRY FROM FMC-CDU UNSUCCESSFUL.

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6D3,6D4,6D5,11F1,11F21,11F22

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

1 SET THE APPLICABLE L, R, OR C IRMP MODE SELECT SWITCH TO OFF. AFTER 30 SECONDS, SET THE MODE SELECT SWITCH TO NAV. PUT IN THE ALIGNMENT DATA AGAIN.
DOES THE L, R, OR C ALIGN LIGHT FLASH?

YES → 20 REPLACE THE L (R, C) IRU, M159 (M161,M160)(AMM 34-21-01/401).

NO ↓

2 THE IRS SYSTEM IS OK.

Entry INOP to Single IRS (Align Flashes After Second Entry).
Position Entry from FMC-CDU Unsuccessful.
Figure 105A

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ENTRY INOP TO SINGLE IRS (ALIGN FLASHES AFTER SECOND ENTRY). POSITION ENTRY FROM FMC-CDU SUCCESSFUL.

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6D3,6D4,6D5,11F1,11F21,11F22

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

1 SET THE APPLICABLE L, R, OR C IRMP MODE SELECT SWITCH TO OFF. AFTER 30 SECONDS, SET THE IRMP MODE SELECT SWITCH TO NAV. PUT IN THE ALIGNMENT DATA AGAIN.
DOES THE L, R, OR C ALIGN LIGHT FLASH?

YES → 20 REPLACE THE IRMP, M59 (AMM 34-21-02/401).
IF THE PROBLEM CONTINUES, REMOVE THE IRMP AND THE L (R,C) IRU, M159 (M161,M160) (AMM 34-21-01/401).
EXAMINE THE CIRCUIT FROM THE L IRMP, CONNECTOR D739, PINS 26,27, TO THE L IRU, CONNECTOR D367C, PINS C5,C6 (R IRMP, CONNECTOR D741, PINS 26,27, TO THE R IRU, CONNECTOR D371C, PINS C5,C6) (C IRMP, CONNECTOR D743, PINS 26,27, TO THE C IRU, CONNECTOR D369C, PINS C5,C6).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE IRMP AND THE IRU.

NO ↓

2 THE IRS SYSTEM IS OK.

Entry INOP to Single IRS (Align Flashes After Second Entry).
Position Entry from FMC-CDU Successful.
Figure 105B

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ENTRY INOP TO ALL IRS'S ALIGN FLASHES AFTER SECOND ENTRY

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6D3,6D4,6D5,11F1,11F21,11F22

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

1 SET ALL THE MODE SELECT SWITCHES TO OFF. AFTER 30 SECONDS, SET ALL THE SWITCHES TO NAV. PUT IN THE ALIGNMENT DATA AGAIN.
DO ALL THE ALIGN LIGHTS FLASH?

YES → 20 REPLACE THE IRMP, M59 (AMM 34-21-02/401).

NO ↓

2 THE IRS SYSTEM IS OK.

Entry INOP to All IRS's (Align Flashes After Second Entry).
Figure 105C

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ALIGN FAILED TO EXTIN AFTER 10 MIN (NAV SEL)

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6D3,6D4,6D5,11E8,11E9,11E29,11E30,11F1,11F21,11F22

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

1 EXAMINE THE APPLICABLE L, R, OR C IRU FAULT LIGHT.
IS THE L, R, OR C IRU FAULT LIGHT ON?

YES → 20 REPLACE THE L (R,C) IRU, M159 (M161,M160)(AMM 34-21-01/401).

NO ↓

2 PUT IN THE ALIGNMENT DATA AGAIN.
IS THE ALIGN LIGHT ON?

YES → 11 ALIGN THE IRU FROM THE FMC-CDU.
IS THE DATA ACCEPTED BY THE IRU?

YES → 21 REPLACE THE IRMP, (M59) (AMM 34-21-02/401).
IF THE PROBLEM CONTINUES, REMOVE THE IRMP AND THE L (R,C) IRU, M159 (M161,M160) (AMM 34-21-01/401).
EXAMINE THE CIRCUIT FROM THE L IRMP, CONNECTOR D739, PINS 26,27, TO THE L IRU, CONNECTOR D367C, PINS C5,C6 (R IRMP, CONNECTOR D741, PINS 26,27, TO THE R IRU, CONNECTOR D371C, PINS C5,C6)(C IRMP, CONNECTOR D743, PINS 26,27, TO THE C IRU, CONNECTOR D369C, PINS C5,C6). REPAIR THE PROBLIMS THAT YOU FIND.
INSTALL THE IRMP AND THE IRU.

NO ↓

12 SET THE IRU TO OFF. AFTER 30 SECONDS, SET THE MODE SELECT SWITCH TO NAV. PUT IN THE ALIGNMENT DATA AGAIN.
IS THE ALIGN LIGHT ON?

YES → 22 REPLACE THE L (R,C) IRU, M159 (M161,M160)(AMM 34-21-01/401).

NO → 23 THE IRS SYSTEM IS OK.

NO ↓

3 THE IRS SYSTEM IS OK.

Align Failed to Extin after 10 Min (Nav Sel)
Figure 105D

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IRS INDICATES IRS ON DC

PREREQUISITES
ELECTRICAL POWER (MM 24-22-00/201)
CB'S: 11F1,11F21,11F22,6D3,6D4,6D5

1 REMOVE THE L, R, OR C IRU, M159,M161, OR M160 (MM 34-21-01/401). EXAMINE AND REPAIR THE APPLICABLE CIRCUIT FROM THE IRS L, R, OR C CIRCUIT BREAKERS (11F1,11F21,11F22) ON PANEL P11, TO THE L, R, OR C IRU CONNECTOR D367C,D371C, OR D369C.
IF THE PROBLEM CONTINUES, DO A TEST ON THE APPLICABLE IRU CONNECTOR D367C (L), D371C (R), OR D369C (C), PIN 5, FOR A GROUND. REPAIR THE CIRCUIT IF IT IS NECESSARY (WDM 34-21-11,-21,-31).
INSTALL THE IRU.

IRS Indicates IRS on DC
Figure 106

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PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6D3,6D4,6D5,11A6,11A7,11E4,11E5,11E6,11E8,11E9,
11E25,11E26,11E27,11E29,11E30,11F1,11F8,11F9,
11F21,11F22,11F24,11F25,11F29

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

IRS BITE TEST

1 PUT THE IRUs IN THE "ALIGN" OR "NAV" MODE (AMM 34-21-00/501).
SET THE IRS INSTR SOURCE SEL SWITCH TO THE USUAL (L OR R) OR "ALTN" (C) POSITION. 1
SET THE EFIS MODE SELECT SWITCH TO THE MAP POSITION.
SET THE SYS DSPL SWITCH ON THE IRMP TO THE APPLICABLE IRU.
AIRPLANES WITH -110 IRUs AND SUBSEQUENT;
IS THE APPLICABLE (LEFT, CENTER, RIGHT) IRU FAULT LIGHT ON THE IRMP OFF?
AIRPLANES WITH -109 IRUs AND PREVIOUS;
DOES THE APPLICABLE (LEFT, CENTER, RIGHT) IRU FAULTBALL SHOW BLACK?

NO → 21 REPLACE THE APPLICABLE LEFT, CENTER, OR RIGHT IRU, M159,M160, OR M161 (AMM 34-21-01/401).

YES ↓

2 PUSH AND HOLD THE APPLICABLE IRU TEST SWITCH. 2
DID LIGHTS ON THE IRMP COME ON?

NO → 22 REPLACE THE APPLICABLE LEFT, CENTER, OR RIGHT IRU, M159,M160, OR M161 (AMM 34-21-01/401).

YES ↓

3 DID ALL THE IRMP DISPLAY LIGHTS COME ON FOR 2 SECONDS?

NO → 23 REPLACE THE APPLICABLE INCANDESCENT DISPLAY LIGHTS (AMM 34-21-02/401).

YES ↓

4 AFTER 2 SECONDS, DID ALL THE IRMP DISPLAY LIGHTS GO OFF?

NO → 24 REPLACE THE APPLICABLE LEFT, CENTER, OR RIGHT IRU, M159,M160, OR M161 (AMM 34-21-01/401).

YES ↓

SEE SHEET 2
(BLOCK 5)

1 FOR THE CENTER IRU TEST, SET THE IRS SWITCHES ON THE CAPT AND F/O INSTRUMENT SOURCE SELECT PANELS TO THE "ALTN" POSITION. MAKE SURE THE RESULTS OCCUR ON THE CAPT AND F/O DISPLAYS.

2 YOU CAN ALSO USE THE LEFT OR RIGHT YAW DAMPER TEST SWITCH TO START THE SELF-TEST FOR ALL IRU'S SIMULTANEOUSLY. THE DATA WILL STAY ON THE DISPLAYS FOR ONLY 10 SECONDS. MAKE SURE THAT HYDRAULIC POWER IS OFF (OR OBEY THE APPLICABLE SAFETY PRECAUTIONS (AMM 29-11-00/501)).

IRS BITE Test
Figure 107 (Sheet 1)

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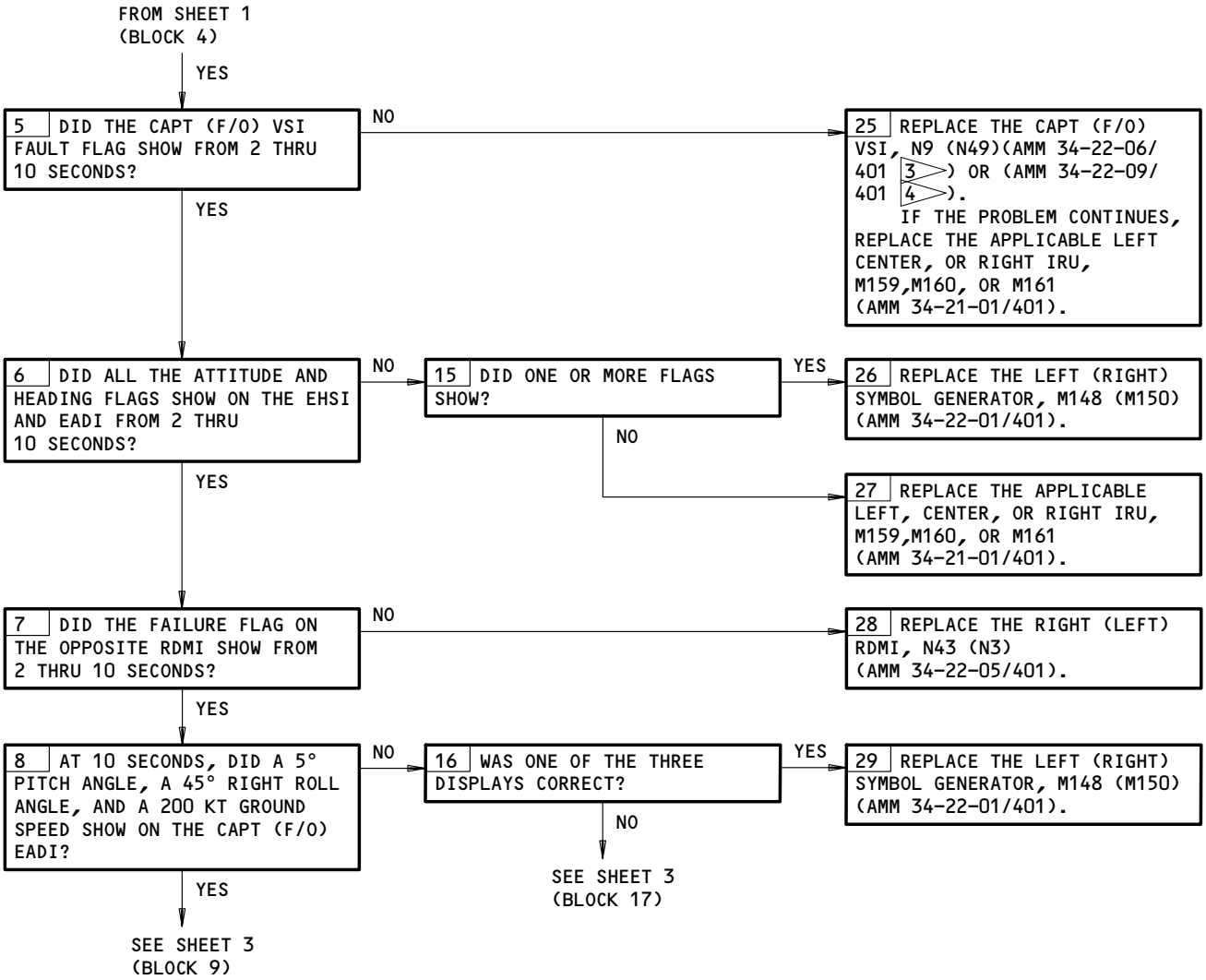

3 AIRPLANES WITH VSI

4 AIRPLANES WITH RA/VSI

IRS BITE Test
Figure 107 (Sheet 2)

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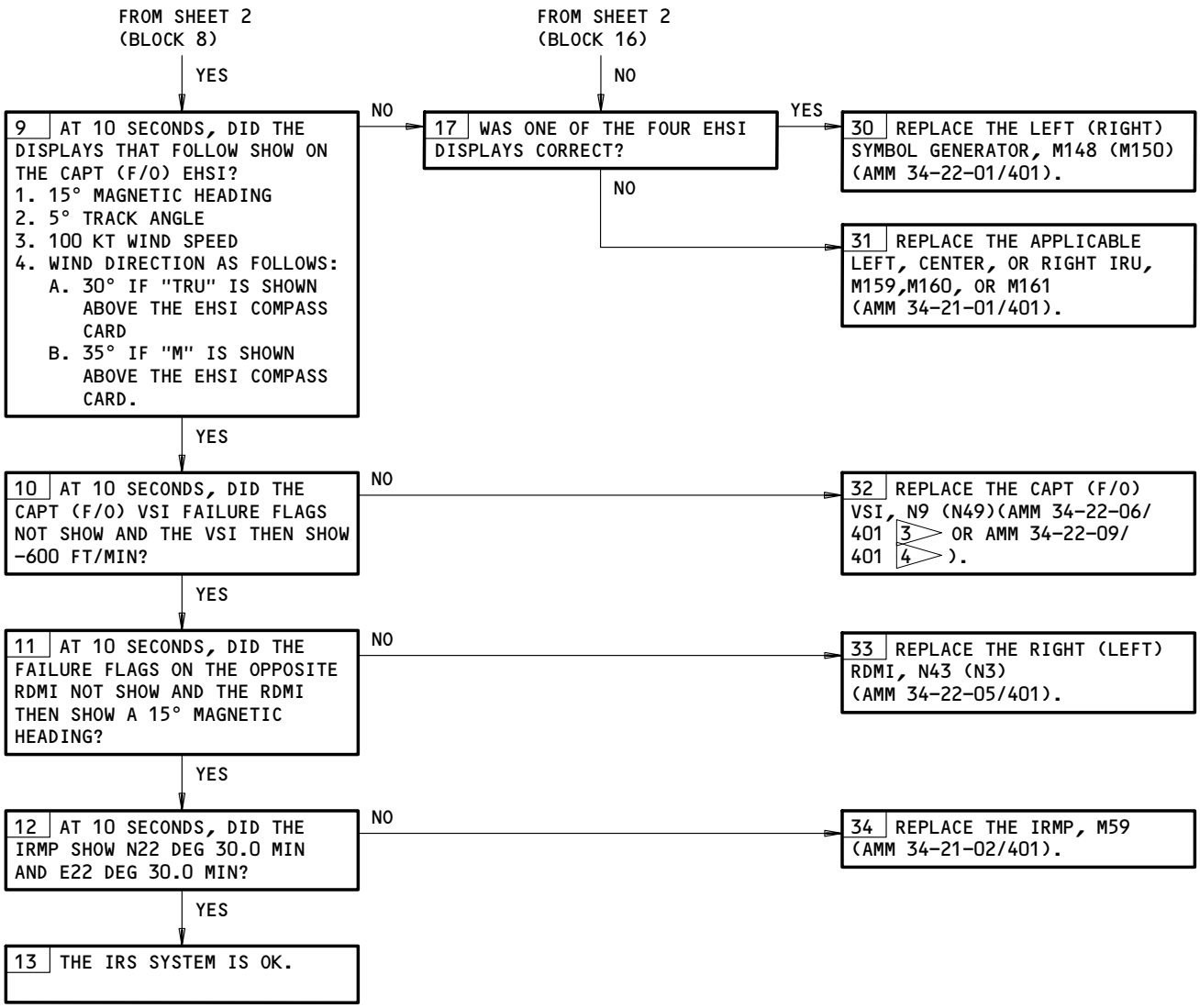

IRS BITE Test
Figure 107 (Sheet 3)

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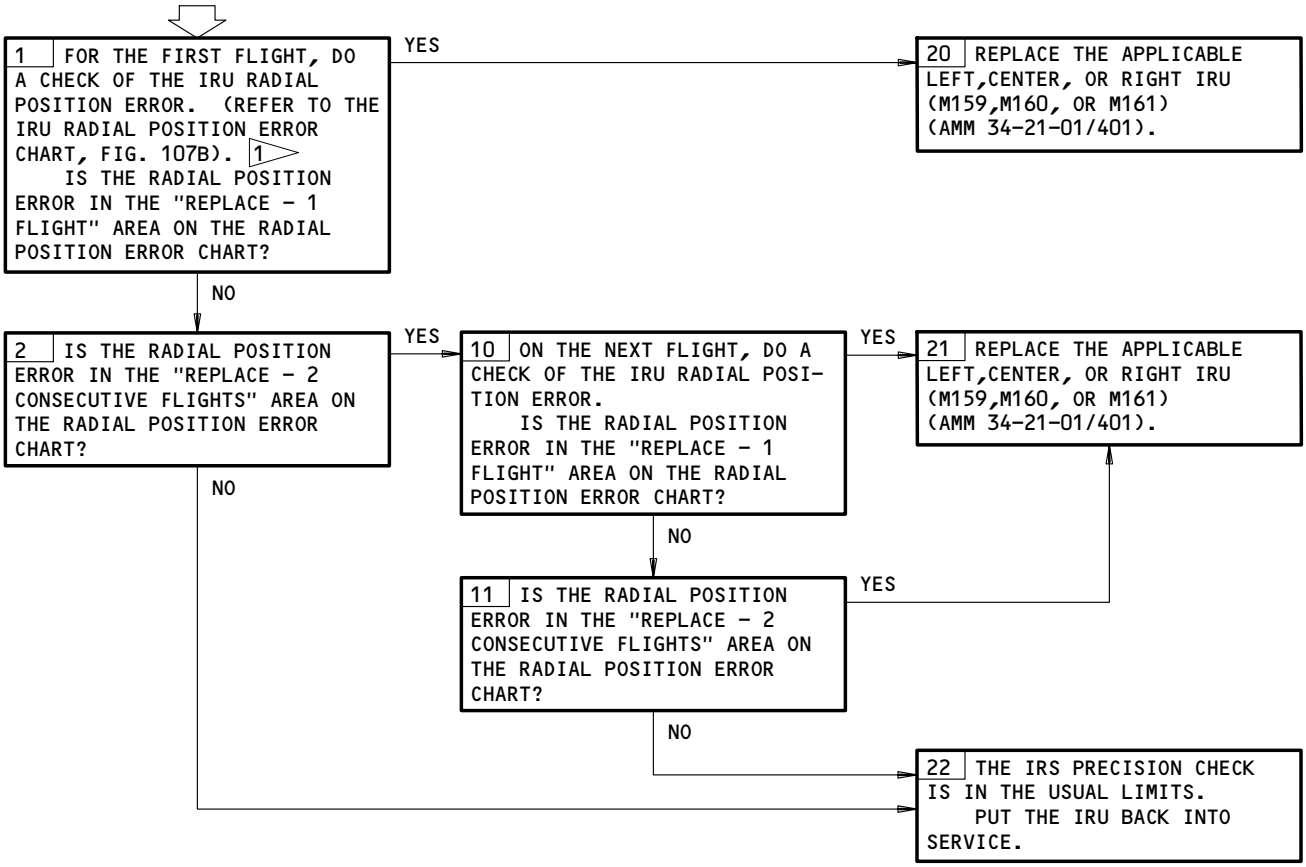
PREREQUISITES

NONE

NOTE: MAKE SURE THAT THE IRUs AND THE FMCs STAY ON UNTIL YOU DO THIS CHECK.

IRS REMOVAL CHECKS



1 TO CALCULATE THIS VALUE, DO THE IRU REMOVAL CHECKS.

IRS Removal Checks
Figure 107A (Sheet 1)

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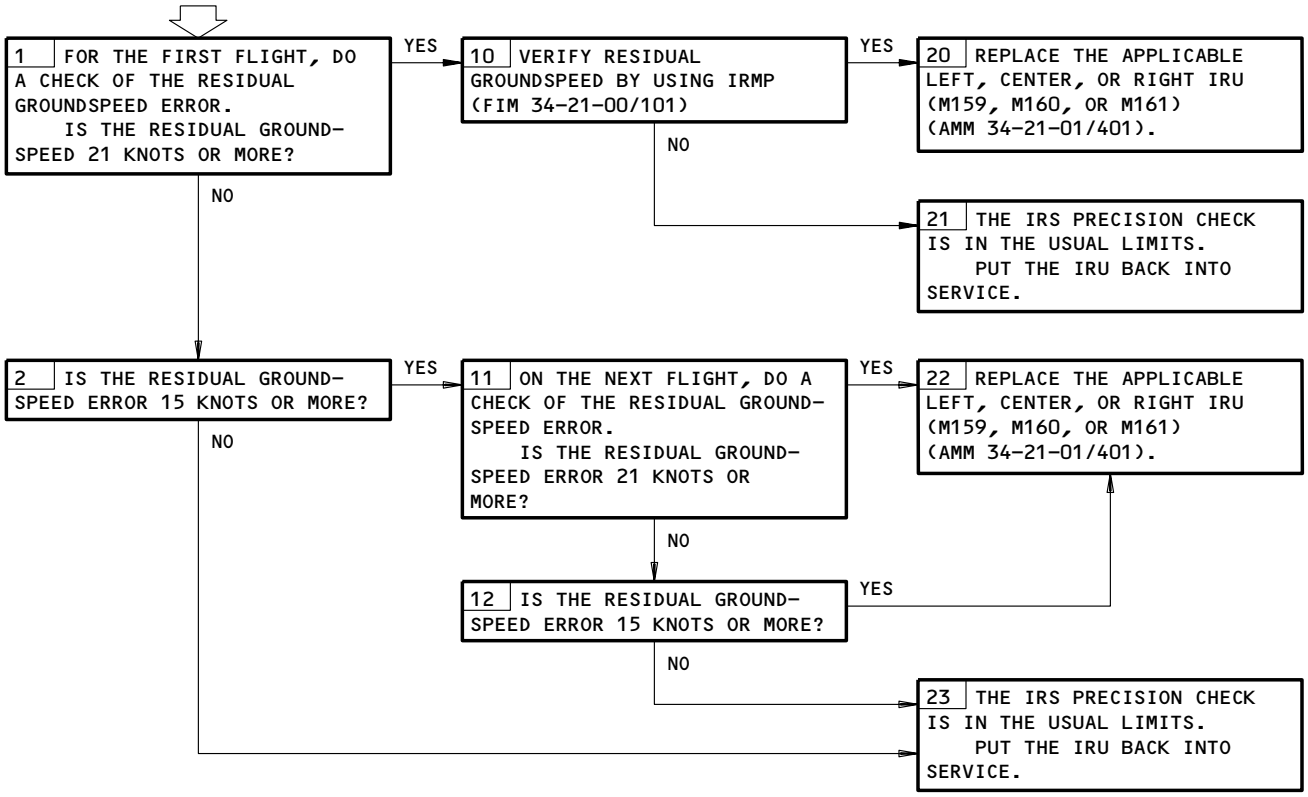
PREREQUISITES

NONE

NOTE: MAKE SURE THAT THE IRUs AND THE FMCs STAY ON UNTIL YOU DO THIS CHECK.

IRS REMOVAL CHECKS



IRS Removal Checks
Figure 107A (Sheet 2)

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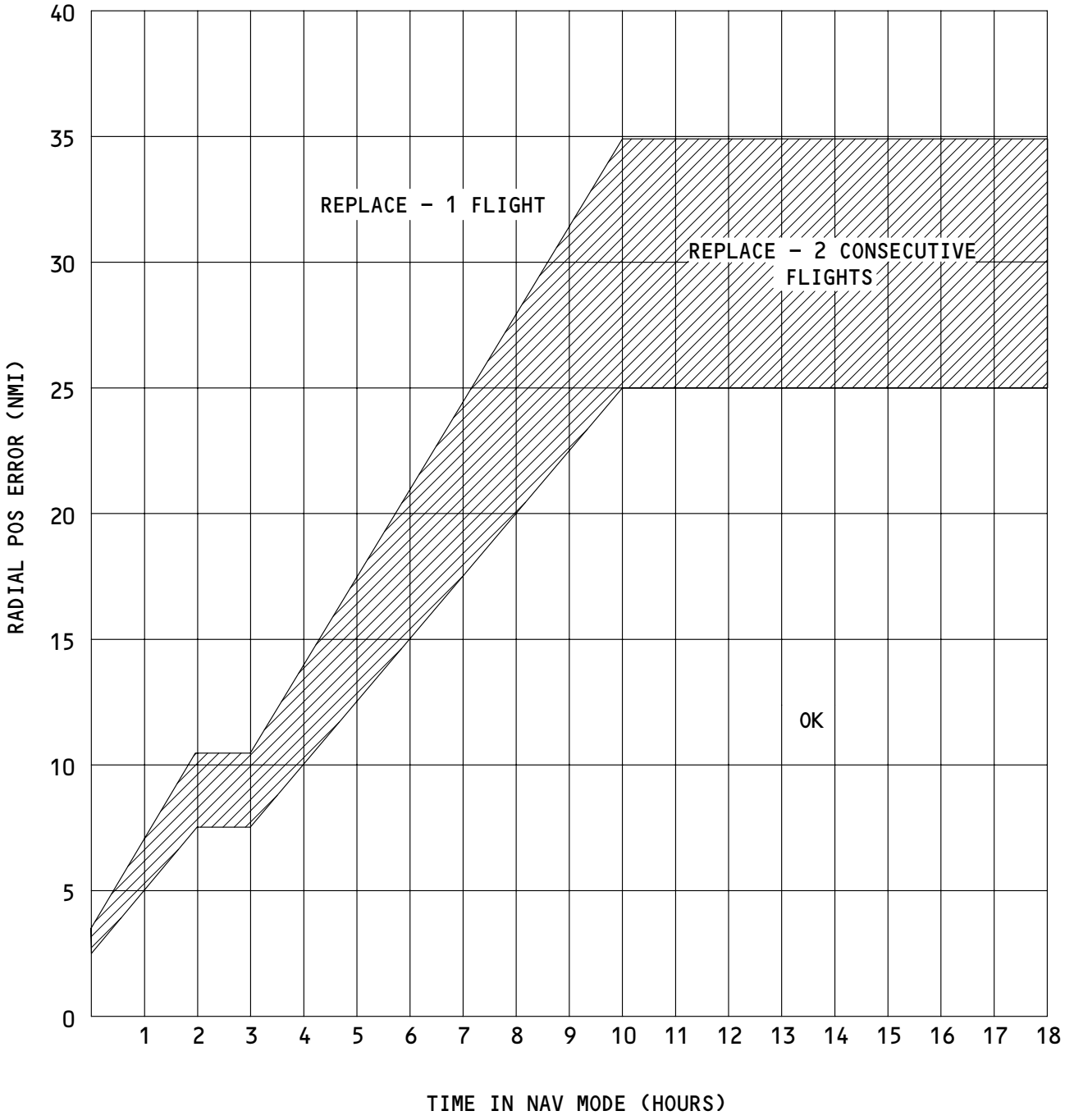

IRU Radial Position Error
Figure 107B

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PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
6D3,6D4,6D5,11A10,11A11,11A12,11E5,11E26,11F1,
11F21,11F22,11F30,11F31,11F32

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)
F/O (CAPT) IRS INSTR SOURCE SELECT SW IN THE USUAL POSITION

IRU "FAULT" ILLUMINATED ON THE INERTIAL REFERENCE MODE PANEL (IRMP)

1 ON THE IRMP, TURN THE FAULTED IRU OFF. WAIT 30 SECONDS UNTIL THE IRMP "ALIGN" ENUNCIATOR EXTINGUISHES; PLACE EACH IRMP MODE SELECT SWITCH TO THE "NAV" POSITION.
PUSH THE "INIT REF" PUSH BUTTON ON THE LEFT FMC-CDU. USE THE "PREV PAGE" OR "NEXT PAGE" SWITCH TO FIND THE "POS INIT" PAGE. PUT IN THE LOCAL LATITUDE AND LONGITUDE DATA INTO THE SCRATCH PATCH.
PUSH THE LINE 4R SWITCH TO MOVE THE DATA TO LINE 4. MAKE SURE THE DATA SHOWS ON LINE 4.
WAIT 10 MINUTES UNTIL THE IRMP "ALIGN" ENUNCIATOR EXTINGUISHES AND THE IRU IS FULLY IN THE "NAV" MODE.
DOES THE IRMP "FAULT" ENUNCIATOR EXTINGUISH AFTER TRANSITION TO THE "NAV" MODE?

YES → 21 THEN THE IRU IS OK.

NO → 2 REPLACE THE LEFT (RIGHT) IRU, M519 (M161) (AMM 34-21-01/401).

IRU "FAULT" Illuminated on the Inertial Reference Mode Panel (IRMP)
Figure 108 (Sheet 1)

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PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
CAPT (F/O) IRS AND ADC INSTR SOURCE SELECT SWITCHES IN THE USUAL POSITIONS

CB'S: 11E5,11E26,11F1,11F21,11F22,6D3,6D4,6D5,11A10, 11A11,11A12,11F30,11F31,11F32

IRU "FAULT" ILLUMINATED ON THE INERTIAL REFERENCE MODE PANEL (IRMP)

1 ON THE IRMP, PLACE THE "SYS DSPL" KNOB TO THE "L" OR "C" OR "R" CORRESPONDING TO THE IRU THAT HAS THE FAULT.
ON THE IRMP, PLACE THE "DSPL SYS" KNOB TO THE "HDG" POSITION. PRESS "0" THEN "1" ON THE KEYBOARD WITHIN 5 SECONDS.
IS THE FAULT CODE 15 DISPLAYED?

NO → 21 REPLACE THE APPLICABLE IRU (AMM 34-21-01/401).

YES ↓

2 ON THE IRMP, TURN THE FAULTED IRU OFF. WAIT 30 SECONDS UNTIL THE IRMP "ALIGN" ENUNCIATOR EXTINGUISHES; PLACE EACH IRMP MODE SELECT SWITCH TO THE "NAV" POSITION.
PUSH THE "INIT REF" PUSH BUTTON ON THE LEFT FMC-CDU. USE THE "PREV PAGE" OR "NEXT PAGE" SWITCH TO FIND THE "POS INIT" PAGE. PUT IN THE LOCAL LATITUDE AND LONGITUDE DATA INTO THE SCRATCH PATCH.
PUSH THE LINE 4R SWITCH TO MOVE THE DATA TO LINE 4. MAKE SURE THE DATA SHOWS ON LINE 4.
WAIT 10 MINUTES UNTIL THE IRMP "ALIGN" ENUNCIATOR EXTINGUISHES AND THE IRU IS FULLY IN THE "NAV" MODE.
DOES THE IRMP "FAULT" ENUNCIATOR EXTINGUISH AFTER TRANSITION TO THE "NAV" MODE?

YES → 22 THEN THE IRU IS OK.

NO ↓

3 REPLACE THE LEFT (RIGHT) IRU, M519 (M161) (AMM 34-21-01 /401).

IRU "FAULT" Illuminated on the Inertial Reference Mode Panel (IRMP)
Figure 108 (Sheet 2)

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1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR YOU CAN CAUSE DAMAGE TO THE CONNECTORS.

      (1) The ARINC 429 data bus charts give data necessary to make an analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminal or at the LRU connector.

   B. Equipment
      (1) Standard multi-meter
      (2) 429 EBP Data Bus Analyzer (recommended)
          JcAIR Instrumentation
          400 Industrial Parkway
          Industrial Airport, KS 66031

          429-2 Data Bus Analyzer (alternative)
          Interface Technology
          150 E. Arrow Highway
          San Dimas, CA 91773
      (3) A34011-1 Breakout Box (recommended)
          A34011-112 Breakout Box (alternative)

          NOTE: Octal label 315 is a multiple function label. It does not show correctly in engineering units on the data bus analyzer unless you set the hexadecimal equipment ID = 04. For analyzers that cannot have the ID set, show the label in hexadecimal format and make a record of the value. Set the data bus analyzer to send label 015 in hex format and use the value you made a record of for label 315. Change the label 015 format to engineering to show the correct engineering units.

IRMP DIGITAL OUTPUT BUS CHART							
BUS NAME			CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
SOURCE	TYPE	BUS					
IRMP	A	1	C	26 27	429	LO	IRMP BUS OUT IRU-C
IRMP	A	1	L	26 27	429	LO	IRMP BUS OUT IRU-L
IRMP	A	1	R	26 27	429	LO	IRMP BUS OUT IRU-R

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IRMP(ID=0A4) OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
SET LATITUDE	A	041	BCD	2		90S-90N	NORTH	DEG:MIN
SET LONGITUDE	A	042	BCD	2		180E-180W	EAST	DEG:MIN
SET MAGNETIC HDG	A	043	BCD	2		0-359	CW FRM NORTH	DEG

IRU DIGITAL OUTPUT BUS CHART							
BUS NAME			CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
SOURCE	TYPE	BUS					
IRU (L C R)	A	1	B	G07 G08	429	HI	IRU #1
IRU (L C R)	A	2	B	E05 E06	429	HI	IRU #2
IRU (L C R)	A	3	B	C10 C11	429	HI	IRU #3

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IRU(ID=004) OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
PRESENT POS LAT-D	A	010	BCD	2	00	90S-90N	NORTH FROM 0	DEG:MIN
PRESENT POS LONG-D	A	011	BCD	2	00	180E-180W	EAST FROM 0	DEG:MIN
GROUND SPEED-D	A	012	BCD	2	00	0-2000	ALWAYS POS	KNOTS
TRACK ANGLE TRUE-D	A	013	BCD	2	00	0-359.9	CW FROM NORTH	DEG
MAGNETIC HEADING-D	A	014	BCD	2	00	0-359.9	CW FROM NORTH	DEG
WIND SPEED-D	A	015	BCD	2	00	0-256	ALWAYS POS	KNOTS
WIND DIRECT TRUE-D	A	016	BCD	2	00	0-359	CW FROM NORTH	DEG
TRUE HEADING-D	A	044	BCD	2	00	0-359.9	CW FROM NORTH	DEG
IRS DISCRETES	A	270	DIS	2	00	N/A	N/A	N/A
IRS TEST	A	277	DIS	2	00	N/A	N/A	N/A
PRESENT POS-LAT	A	310	BNR	5	N/A	± 180	NORTH FROM 0	DEG
PRESENT POS-LONG	A	311	BNR	5	N/A	± 180	EAST FROM 0	DEG
GROUND SPEED	A	312	BNR	10	00	0-4096	ALWAYS POS	KNOTS
TRACK ANGLE TRUE	A	313	BNR	20	00	± 180	CW FROM NORTH	DEG
TRUE HEADING	A	314	BNR	20	00	± 180	CW FROM NORTH	DEG
WIND SPEED	A	315	BNR	10	00	0-256	ALWAYS POS	KNOTS
WIND DIRECT TRUE	A	316	BNR	10	00	± 180	CW FROM NORTH	DEG
TRACK ANGLE-MAG	A	317	BNR	20	00	± 180	CW FROM NORTH	DEG
MAGNETIC HEADING	A	320	BNR	20	00	± 180	CW FROM NORTH	DEG
DRIFT ANGLE	A	321	BNR	20	00	± 180	RIGHT	DEG

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IRU(ID=004) OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
FLIGHT PATH ANGLE	A	322	BNR	20	00	± 180	UP	DEG
FLIGHT PATH ACCEL	A	323	BNR	50	00	± 4	FORWARD	G'S
PITCH ANGLE	A	324	BNR	50	00	± 180	UP	DEG
ROLL ANGLE	A	325	BNR	50	00	± 180	RIGHT WING DO	DEG
BODY PITCH RATE	A	326	BNR	50	00	± 128	UP	DEG/SEC
BODY ROLL RATE	A	327	BNR	50	00	± 128	RIGHT WING DO	DEG/SEC
BODY YAW RATE	A	330	BNR	50	00	± 128	NOSE RIGHT	DEG/SEC
BODY LONGIT ACCEL	A	331	BNR	50	00	± 4	FORWARD	G'S
BODY LATERAL ACCEL	A	332	BNR	50	00	± 4	RIGHT	G'S
BODY NORMAL ACCEL	A	333	BNR	50	00	± 4	UP	G'S
PLATFORM HEADING	A	334	BNR	10	00	± 180	CW FROM ZERO	DEG
TRACK ANGLE RATE	A	335	BNR	50	00	± 32	CW	DEG/SEC
PITCH ATT RATE	A	336	BNR	50	00	± 128	UP	DEG/SEC
ROLL ATT RATE	A	337	BNR	50	00	± 128	RIGHT WING DO	DEG/SEC
IRS MAINT DISCRETE	A	350	DIS	2	00	N/A	N/A	N/A
IRMP BITE DSPL*[1]	A	351	DIS	2		N/A	N/A	N/A
GPS MAINT DIS *[2]	A	353	DIS	1	00	N/A	N/A	N/A
POTENTIAL VERT SPD	A	360	BNR	50	00	± 32,768	UP	FT/MIN

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IRU(ID=004) OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
INERTIAL ALTITUDE	A	361	BNR	25	N/A	± 131,072	UP	FEET
ALONG TK HRZ ACCEL	A	362	BNR	50	00	± 4	FORWARD	G'S
CROSS TK HRZ ACCEL	A	363	BNR	50	00	± 4	RIGHT	G'S
VERTICAL ACCEL	A	364	BNR	50	00	± 4	UP	G'S
INERTIAL VERT SPD	A	365	BNR	50	00	± 32,768	UP	FT/MIN
N-S VELOCITY	A	366	BNR	10	00	± 4096	NORTH	KNOTS
E-W VELOCITY	A	367	BNR	10	00	± 4096	EAST	KNOTS

*[1] -103 IRUs AND ON
*[2] -107 IRUs AND ON

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IRU DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
ALIGN MODE/NR	270	11	ALIGN MODE	NOT ALIGN
REV ATTITUDE MODE	270	12	REV ATT	NO REV ATT
NAV MODE	270	13	NAV	NO NAV
SET HEADING	270	14	SET HDG	NO SET HDG
ATTITUDE INVALID	270	15	ATT INVAL	ATT VALID
DC FAIL	270	16	DC FAIL	DC OK
ON DC	270	17	ON DC	OFF DC
ADC FAULT	270	18	ADC FAULT	NO FAULT
IRU FAULT	270	19	IRU FAULT	NO FAULT
DC FAIL ON DC	270	20	DC FAIL	NO FAULT
ALIGN FAULT	270	21	ALIGN FLT	NO FAULT
NO IRS INITIAL	270	22	NO INITIAL	INITAL
EXCESS MOTION ERR	270	23	EXC MOTION	NO ERROR
ADC/IRU FAULT	270	24	FAULT	NO FAULT
REENTER POS *[2]	270	25	ENTER POS	NO ACTION
ALIGN STATUS *[1]	270	26	1 MIN	0
ALIGN STATUS *[1]	270	27	2 MIN	0
ALIGN STATUS *[1]	270	28	4 MIN	0
CYCLE IRS *[2]	270	29	CYCLE IRS	NO ACTION
POWER SUPPLY	350	11	FAULT	NO FAULT

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IRU DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
DIGITAL INPUT	350	12	FAULT	NO FAULT
SENSOR LSIC	350	13	FAULT	NO FAULT
MEMORY (RAM)	350	14	FAULT	NO FAULT
MEMORY (PROM)	350	15	FAULT	NO FAULT
PITCH RATE	350	16	FAULT	NO FAULT
GYRO	350	17	FAULT	NO FAULT
TEMP SENSOR	350	19	FAULT	NO FAULT
SYSTEM TESTS	350	20	FAULT	NO FAULT
DISCRETE I/O	350	21	FAULT	NO FAULT
WDT	350	22	FAULT	NO FAULT
CPU	350	23	FAULT	NO FAULT
A/D OR MUX	350	24	FAULT	NO FAULT
GPS RESERVED *[3]	350	25	TBD	TBD
GPS RESERVED *[3]	350	26	TBD	TBD
GPS RESERVED *[3]	350	27	TBD	TBD
GPS RESERVED *[3]	350	28	TBD	TBD
PWR SUPP CRITICAL *[1]	351	11	FAULT	NO FAULT
DIG I/O WRAPROUND *[1]	351	12	FAULT	NO FAULT
RAM/NVM/PROM MMRY *[1]	351	13	FAULT	NO FAULT
LSIC *[1]	351	14	FAULT	NO FAULT
DISCRETE INPUT *[1]	351	15	FAULT	NO FAULT

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IRU DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
PROCESSOR *[1]	351	16	FAULT	NO FAULT
GYRO *[1]	351	17	FAULT	NO FAULT
ALIGN/SYSTEM *[1]	351	18	FAULT	NO FAULT
A/D MUX DATA TRAN *[1]	351	19	FAULT	NO FAULT
POWER SUPPLY *[1]	351	20	FAULT	NO FAULT
ADC/DSCRTOUT WRAP *[1]	351	21	FAULT	NO FAULT
SPARE *[1]	351	22	NOT USED	NOT USED
CALIBRATION PROM *[1]	351	23	FAULT	NO FAULT
INA/OTA *[1]	351	24	FAULT	NO FAULT
ANALOG PITCH RATE *[1]	351	25	FAULT	NO FAULT
GYRO *[1]	351	26	FAULT	NO FAULT
GYRO CONFIG *[1]	351	27	FAULT	NO FAULT
TEMP SENSOR *[1]	351	28	FAULT	NO FAULT
SPARE *[1]	351	29	NOT USED	NOT USED
GPS FAULT *[3]	351	29	FAULT	NO FAULT
NO GPS FNCTN INSTL*[4]	353	27	NOT INSTALLED	INSTALLED

*[1] -103 IRUs AND ON
*[2] -105 IRUs AND ON
*[3] -107 IRUs AND ON (ALWAYS ZERO STATE)
*[4] -107 IRUs AND ON (ALWAYS ONE STATE)

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2. IRU Removal Checks (Fig. 107A and 107B)
   A. Two checks are used to make a decision if an IRU is recommended to be replaced. The checks are the residual groundspeed error and the radial position error measurements.
      (1) Residual groundspeed is the groundspeed of the airplane when the airplane is parked. The POS REF (position reference) page 2/2 on the FMC CDU shows the residual groundspeed for the FMC and the IRUs at the end of the flight.
      (2) Radial position error is the distance between present position and computed IRU position. The POS REF page 2/2 on the FMC CDU shows the present position for the IRUs. The radial position error check uses the FMC CDU RTE (route) 1 or RTE 2 legs page to calculate the IRS radial position error. The actual and calculated IRS positions are input as waypoints. Their difference, in nautical miles, is compared to the deviation criteria to make a decision if the IRU is recommended to be replaced.
   B. Residual Groundspeed Error Check

      NOTE: The IRUs and FMCs must not be shut down before the groundspeed error check is complete.

      (1) Push the INIT REF key on the CDU.
      (2) Push the line select key (LSK) adjacent to <INDEX.
          (a) Make sure the INIT REF INDEX page is shown.
      (3) Push the LSK adjacent to <POS.
          (a) Make sure the POS INIT page 1/2 is shown.
      (4) Push the NEXT PAGE or PREV PAGE key to show the POS REF page.
          (a) Make sure the POS REF page is shown.
      (5) Record the residual groundspeed error shown on the POS REF page for each IRU.

          NOTE: FMC freeze can cause FMC-CDU to display excessive groundspeed. Verify IRU residue using IRMP.

          (a) Open the applicable circuit breakers:
              L FMC, OR
              R FMC
          (b) Wait 15 seconds then close the applicable circuit breakers:
              L FMC, OR
              R FMC
          (c) Observe the IRU groundspeed for 20 minutes to confirm the maximum error.

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(6) AIRPLANES WITH IRMP P/N S242T101-202 THRU -999;
Do these steps:

NOTE: The groundspeed will not change on the FMC when an IRU is replaced. This procedure must be performed after completion of a flight before IRU is switched out of the NAV mode. This value should be recorded before power shutdown.

(a) Rotate IRMP "SYS DSPL" switch to L, C, or R position, as appropriate.
(b) Rotate IRMP "DSPL SEL" switch to TK/GS position.
(c) Read residual speed on the IRMP upper right display window.
(d) Repeat for each IRU position.

(7) Replace the IRU (AMM 34-21-01/401) if one of these conditions occur:
(a) The residual groundspeed error is 15 knots or larger after each of two consecutive checks.
(b) The residual groundspeed error is 21 knots or larger at the end of one check.

C. Radial Position Error Check

NOTE: The IRUs and FMCs must not be shut down before the radial position error check is complete.

(1) Push the INIT REF key on the CDU.
(2) Push the line select key (LSK) adjacent to <INDEX.
(a) Make sure the INIT REF INDEX page is shown.
(3) Push the LSK key adjacent to <POS.
(a) Make sure the POS INIT page 1/2 is shown.
(4) Push the NEXT PAGE or PREV PAGE key to show the POS REF page.
(a) Make sure the POS REF page is shown.
(5) Record the latitude and longitude shown for each IRU.
(6) Push the LEGS mode key.
(a) Make sure the RTE 1 LEGS or RTE 2 LEGS page is shown.
(7) Input the present position latitude and longitude (gate, ramp, etc.) as a waypoint.
(8) Input the latitude and longitude of the left IRU as the next waypoint on the RTE 1 or RTE 2 LEGS page.

NOTE: This can be done manually or by line selection from the POS REF page.

(9) Record the computed leg length between the present position waypoint and the left IRU waypoint.

NOTE: This is the radial position error of the left IRU.

(10) Input the latitude and longitude of the center IRU after the present position waypoint, either manually or by line selection from the POS REF page.

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(11) Record the computed leg length between the present position waypoint and the center IRU waypoint.

NOTE: This is the radial position error of the center IRU.

(12) Input the latitude and longitude of the right IRU after the present position waypoint, either manually or by line selection from the POS REF page.

(13) Record the computed leg length between the present position waypoint and the right IRU waypoint.

NOTE: This is the radial position error of the right IRU.

(14) Compare these radial position errors for a given navigation time to the accept/reject limits on Fig. 107B.

NOTE: Navigation time is the time since an IRU last entered NAV mode after a full 10 minute alignment was completed. Flight time is permitted if navigation time is not available.

(15) Replace the IRU (AMM 34-21-01/401) if one of these conditions occur:
(a) The radial position error of the IRU for a given navigation time falls in the "REPLACE AFTER 1 FLIGHT" area of Fig. 107B.
(b) The radial position error of the IRU for a given navigation time falls in the "REPLACE AFTER 2 CONSECUTIVE FLIGHTS" area of Fig. 107B for two consecutive flights.

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ELECTRONIC FLIGHT INSTRUMENT SYSTEM (EFIS)

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
CIRCUIT BREAKER -	1		FLT COMPT, P11	
ADI LEFT, C593		1	11E3	*
ADI RIGHT, C594		1	11E24	*
EFIS CONT PNL LEFT, C633		1	11E4	*
EFIS CONT PNL RIGHT, C634		1	11E25	*
EFIS DSPL SW L, C622		1	11A7	
EFIS DSPL SW RIGHT, C623		1	11F24	*
EFIS SYM GEN L, C637		1	11F8	*
EFIS SYM GEN RIGHT, C638		1	11F29	*
EFIS SYM GEN C, C639		1	11F9	*
HSI LEFT, C588		1	11E6	*
HSI RIGHT, C589		1	11E27	*
RDMI L, C635		1	11A6	*
RDMI RIGHT, C636		1	11F25	*
VSI LEFT, C586		1	11E5	*
VSI RIGHT, C587		1	11E26	*
GENERATOR - CENTER EFIS SYMBOL, M149	1	1	119AL, MAIN EQUIP CTR, E1-4	34-22-01
GENERATOR - LEFT EFIS SYMBOL, M148	1	1	119AL, MAIN EQUIP CTR, E1-2	34-22-01
GENERATOR - RIGHT EFIS SYMBOL, M150	1	1	119AL, MAIN EQUIP CTR, E1-5	34-22-01
INDICATOR - LEFT ELECTRONIC ATTITUDE DIRECTOR, N4	2	1	FLT COMPT, P1-1	34-22-03
INDICATOR - LEFT ELECTRONIC HORIZONTAL SITUATION, N5	2	1	FLT COMPT, P1-1	34-22-04
INDICATOR - LEFT RADIO DISTANCE MAGNETIC, N3	2	1	FLT COMPT, P1-1	34-22-05
INDICATOR - LEFT RESOLUTION ADVISORY/ VERTICAL SPEED, N9 [2]	2	1	FLT COMPT, P1-3	34-22-09
INDICATOR - LEFT VERTICAL SPEED, N9 [1]	2	1	FLT COMPT, P1-3	34-22-06
INDICATOR - RIGHT ELECTRONIC ATTITUDE DIRECTOR, N44	2	1	FLT COMPT, P3-3	34-22-03
INDICATOR - RIGHT ELECTRONIC HORIZONTAL SITUATION, N45	2	1	FLT COMPT, P3-3	34-22-04
INDICATOR - RIGHT RADIO DISTANCE MAGNETIC, N43	2	1	FLT COMPT, P3-3	34-22-05
INDICATOR - RIGHT RESOLUTION ADVISORY/ VERTICAL SPEED, N49 [2]	2	1	FLT COMPT, P3-3	34-22-09
INDICATOR - RIGHT VERTICAL SPEED, N49 [1]	2	1	FLT COMPT, P3-3	34-22-06
PANEL - (FIM 34-51-00/101)				
LEFT VOR/DME CONTROL, M91				
RIGHT VOR/DME CONTROL, M92				
PANEL - LEFT EFIS CONTROL, M94	2	1	FLT COMPT, P10	34-22-02
PANEL - RIGHT EFIS CONTROL, M93	2	1	FLT COMPT, P10	34-22-02
RELAY - (FIM 31-01-37/101)				
EFIS/EICAS ATT COMP, K1297 [2]				
FLIGHT RECORDER I/P SWITCHING, K15				

* SEE THE WDM EQUIPMENT LIST

[1] SAS 050-280
[2] SAS 281-999

Electronic Flight Instrument System (EFIS) - Component Index
Figure 101 (Sheet 1)

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ELECTRONIC FLIGHT INSTRUMENT SYSTEM (EFIS)

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
SENSOR - LEFT EFIS REMOTE LIGHT, TS187	--	1	FLT COMPT, P7	34-22-07
SENSOR - RIGHT EFIS REMOTE LIGHT, TS188	--	1	FLT COMPT, P7	34-22-07
SWITCH - HEADING REFERENCE, S616	2	1	FLT COMPT, P3-1	*
SWITCH - LEFT EFI, S3	1	1	FLT COMPT, P1-1	33-13-00
SWITCH - LEFT F/D, S1	1	1	FLT COMPT, P1-1	33-13-00
SWITCH - LEFT IRS, S4	1	1	FLT COMPT, P1-1	33-13-00
SWITCH - LEFT NAV, S2	1	1	FLT COMPT, P1-1	33-13-00
SWITCH - RIGHT EFI, S11	1	1	FLT COMPT, P3-3	33-13-00
SWITCH - RIGHT F/D, S9	1	1	FLT COMPT, P3-3	33-13-00
SWITCH - RIGHT IRS, S12	1	1	FLT COMPT, P3-3	33-13-00
SWITCH - RIGHT NAV, S10	1	1	FLT COMPT, P3-3	33-13-00

* SEE THE WDM EQUIPMENT LIST

Electronic Flight Instrument System (EFIS) - Component Index
Figure 101 (Sheet 2)

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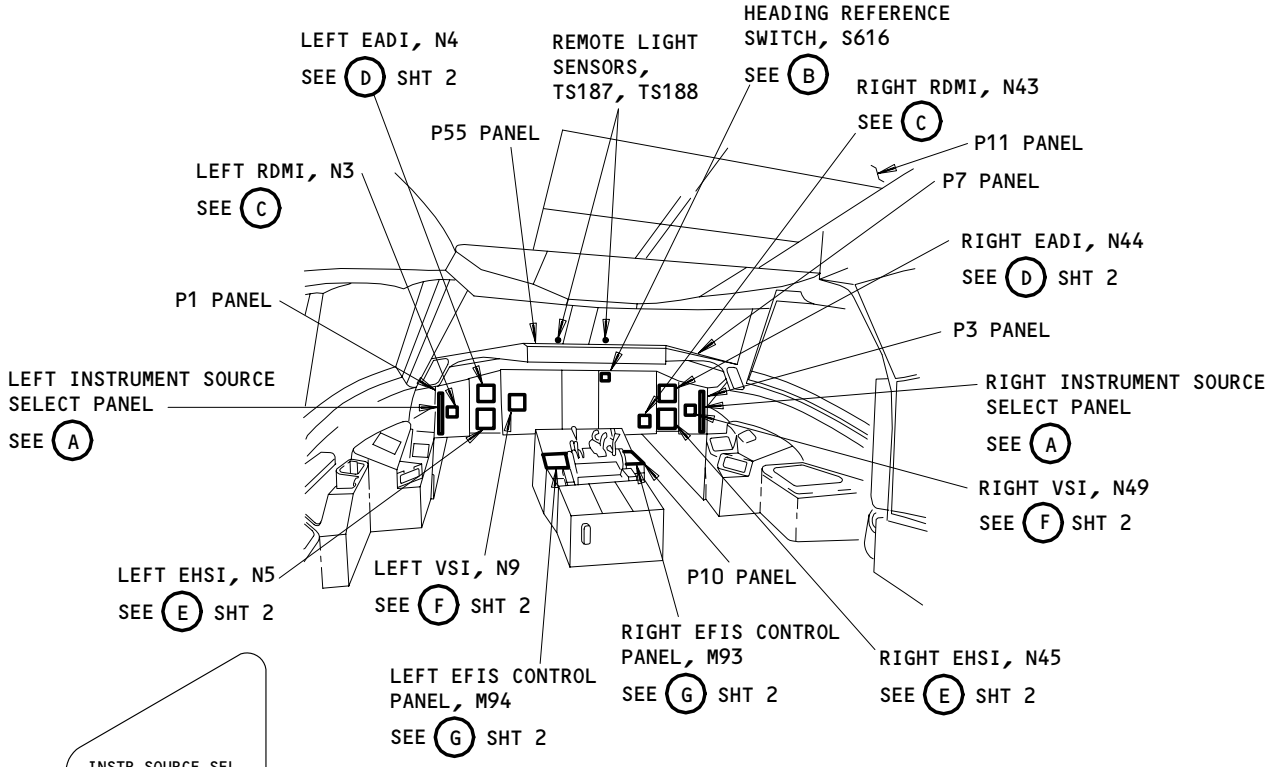
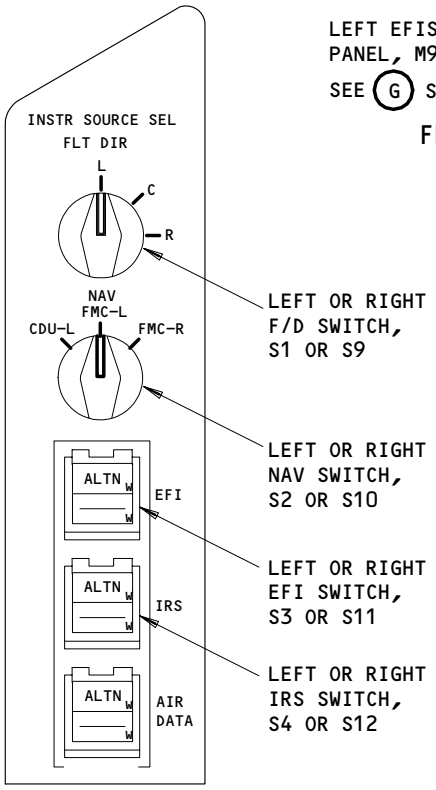
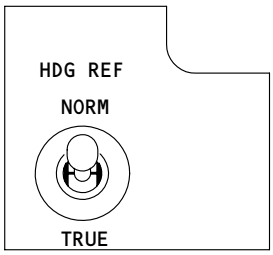


FLIGHT COMPARTMENT



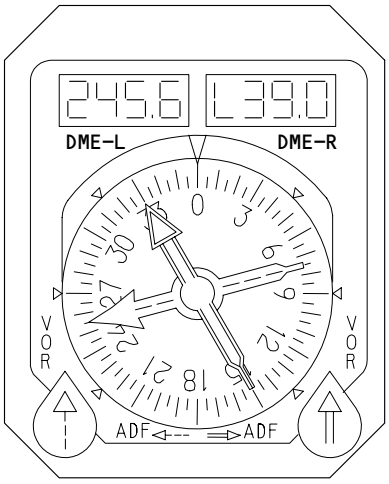
LEFT OR RIGHT INSTRUMENT SOURCE SELECT PANEL

A



HEADING REFERENCE SWITCH, S616

B



LEFT OR RIGHT RDMI, N3 OR N43

C

EFIS - Component Location
Figure 102 (Sheet 1)

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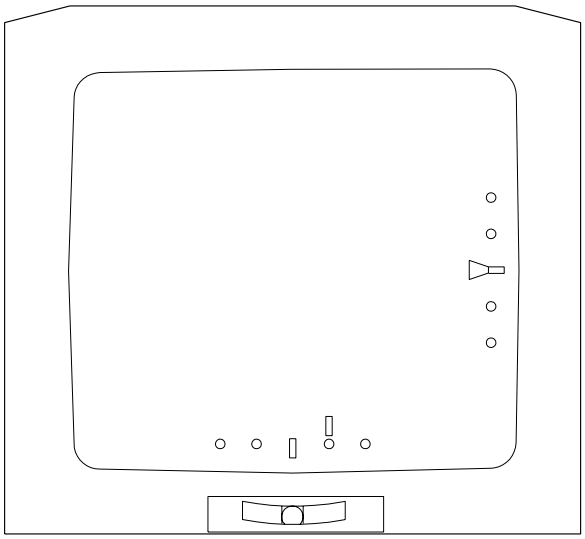
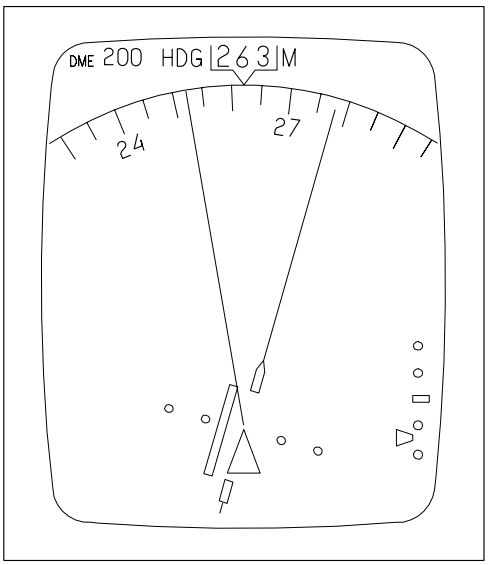


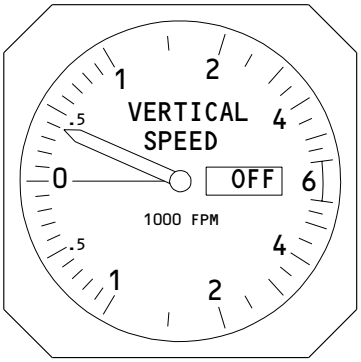
LEFT OR RIGHT EADI, N4 OR N44

D



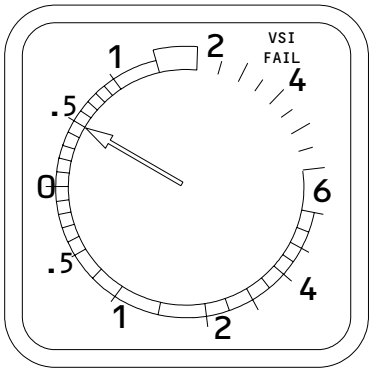
LEFT OR RIGHT EHSI, N5 OR N45

E



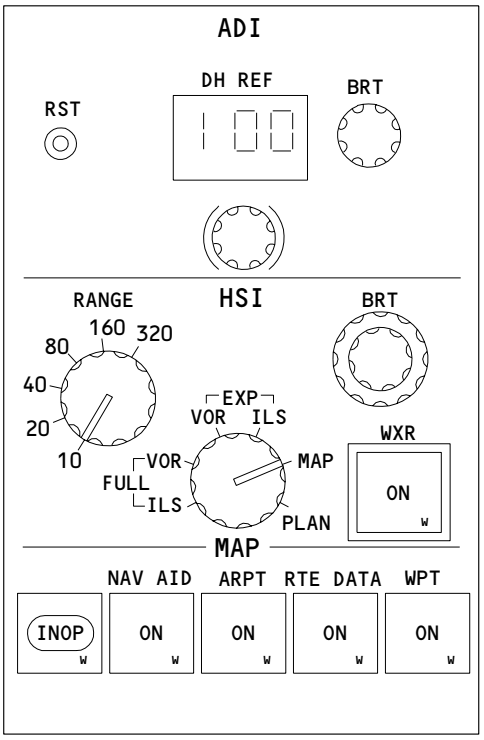
LEFT OR RIGHT
VERTICAL SPEED
INDICATOR,
N9 OR N49

F 1



LEFT OR RIGHT
RESOLUTION ADVISORY/
VERTICAL SPEED
INDICATOR,
N9 OR N49

F 2



LEFT OR RIGHT EFIS
CONTROL PANEL, M94 OR M93

G

1 SAS 050-280
2 SAS 281-999

EFIS - Component Location (Details from Sht 1)
Figure 102 (Sheet 2)

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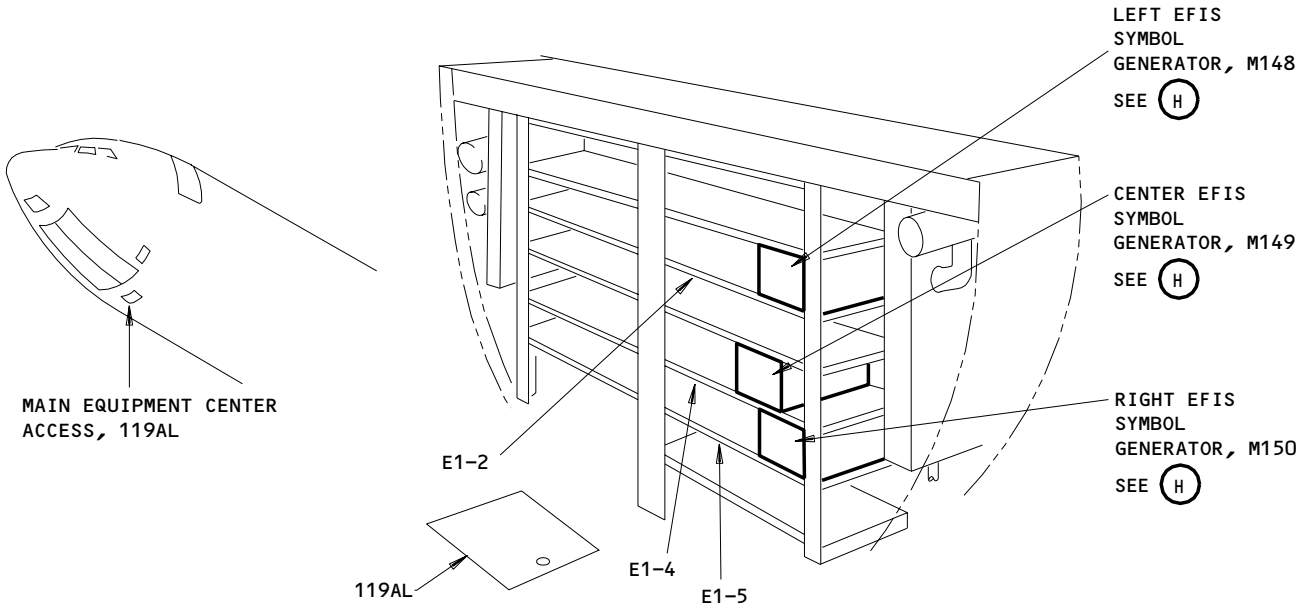
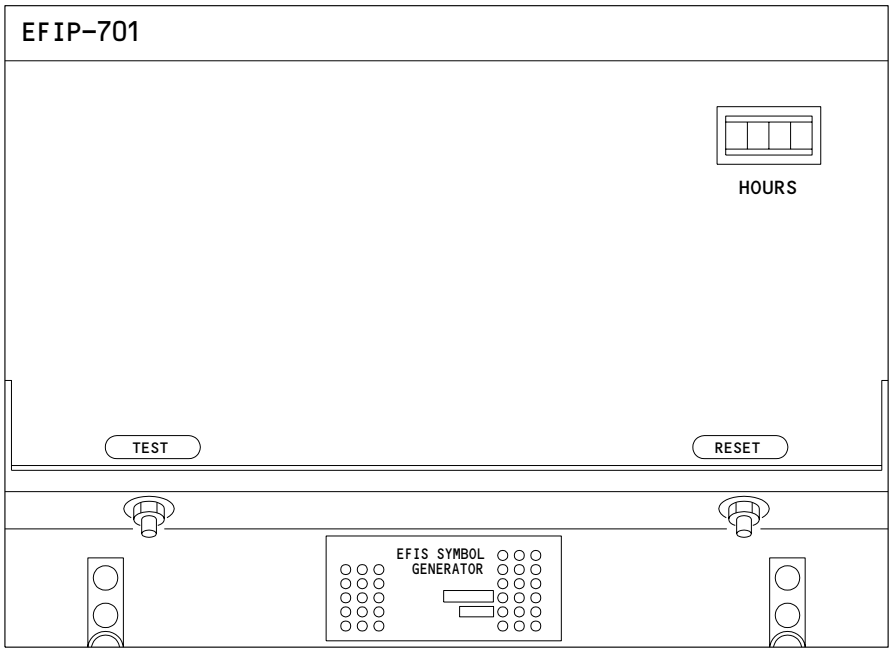


MAIN EQUIPMENT CENTER



EFIS SYMBOL GENERATOR

H

EFIS - Component Location
Figure 102 (Sheet 3)

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Not Used
Figure 103

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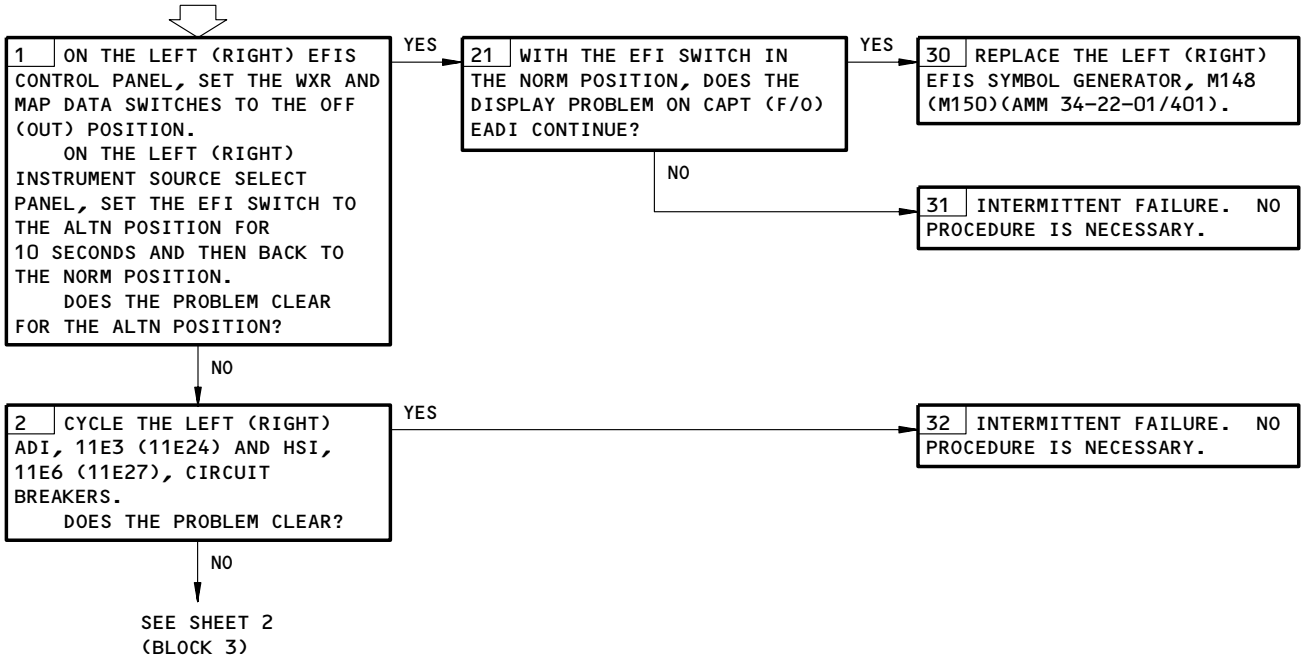
DISPLAY PROBLEMS ON CAPT (F/O) EADI

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7, 11E3, 11E4, 11E6, 11E24, 11E25, 11E27, 11F8, 11F9, 11F24, 11F29

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



Display Problems on Capt (F/O) EADI
Figure 104 (Sheet 1)

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FROM SHEET 1
(BLOCK 2)

NO

3 PUSH AND HOLD THE TEST SWITCH ON THE OVERHEAD LIGHTING CONTROL PANEL.
DOES "TEST FAIL DU" SHOW ON THE LEFT (RIGHT) EADI?

YES

22 RELEASE THE TEST SWITCH ON THE OVERHEAD LIGHTING CONTROL PANEL. REMOVE THE LEFT (RIGHT) EADI, N4 (N44) (AMM 34-22-03/401), AND LOOK AT THE COOLING AIR INLET SCREEN ON THE REAR OF THE UNIT. 1
DOES THE INLET SCREEN SHOW BLOCKAGE?

NO

33 REPLACE THE LEFT (RIGHT) EADI, N4 (N44) (AMM 34-22-03/401).
PUSH THE RESET SWITCH ON THE LEFT (RIGHT) AND CENTER EFIS SYMBOL GENERATORS, M148 (M150) AND M149.

YES

34 CLEAN THE INLET SCREEN. 2
INSTALL THE SAME LEFT (RIGHT) EADI, N4 (N44) (AMM 34-22-03/401).
PUSH THE RESET SWITCH ON THE LEFT (RIGHT) AND CENTER EFIS SYMBOL GENERATORS, M148 (M150) AND M149.
DO THE PROCEDURE IN STEP 2 AGAIN.

NO

35 RELEASE THE TEST SWITCH ON THE OVERHEAD LIGHTING CONTROL PANEL. REPLACE THE LEFT (RIGHT) EADI, N4 (N44) (AMM 34-22-03/401).
IF THE PROBLEM CONTINUES, EXAMINE ALL THE EADI CONNECTIONS AND REPAIR THEM AS NECESSARY (WDM 34-22-14, WDM 34-22-16, WDM 34-22-24, WDM 34-22-26, WDM 34-22-34, WDM 34-22-35).
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUITS FOR THE EFI SWITCH ON THE INSTRUMENT SOURCE SELECT PANEL (WDM 34-22-17, WDM 34-22-27, WDM 34-22-37). REPAIR THE PROBLEMS THAT YOU FIND.

1 ON THE AVIONICS COOLING MONITOR ON THE P61 PANEL; MAKE SURE THE INDICATING BALL SHOWS IN THE WINDOW BEFORE YOU REMOVE THE UNIT. IF THE BALL DOES NOT SHOW AND THE PROBLEM CONTINUES AFTER YOU EXAMINE AND CLEAN THE INLET SCREEN, EXAMINE AND REPAIR DAMAGE OR DISCONNECTIONS OF THE COOLING AIR DUCTS.

2 EXAMINE THE INLET SCREEN ON THE BACK OF THE OTHER EADI, THE TWO EHSIs (AMM 34-22-04/401), AND THE TWO EICAS DISPLAY UNITS (AMM 31-41-01/401). REPAIR THE PROBLEMS THAT YOU FIND.

Display Problems on Capt (F/O) EADI
Figure 104 (Sheet 2)

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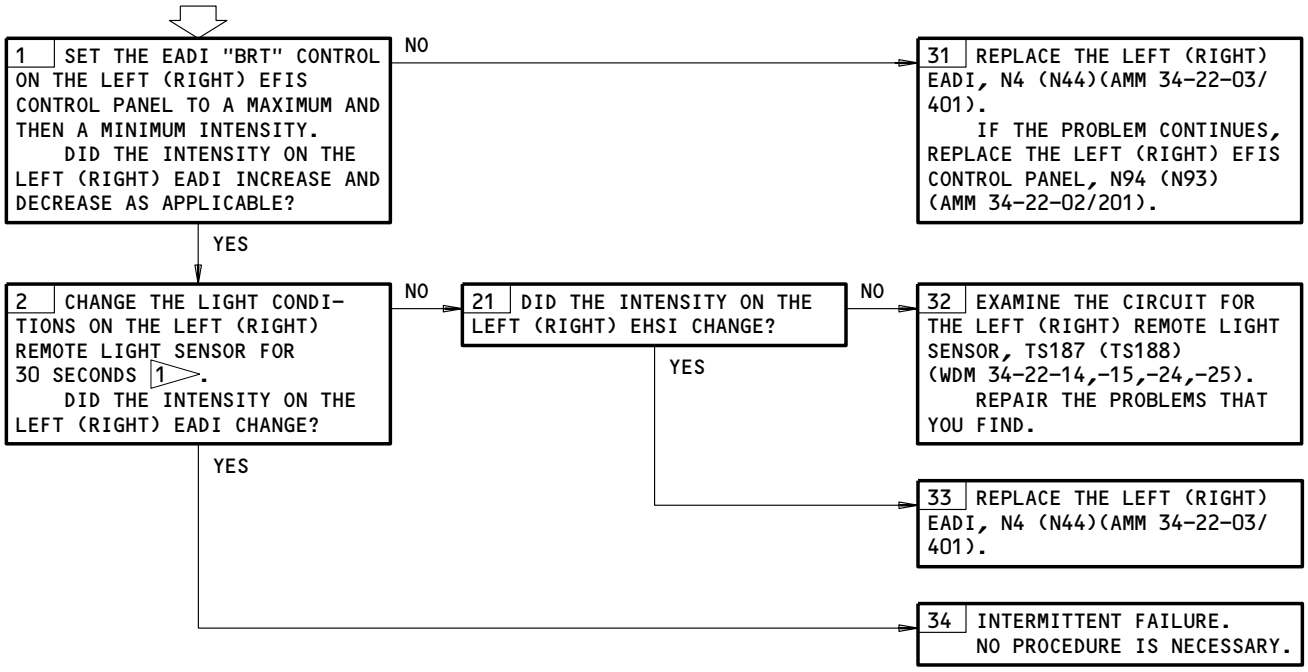
PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7,11E3,11E4,11E6,11E24,11E25,11E27,11F8,11F9
11F24,11F29

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

BRIGHTNESS CONTROL PROBLEM ON CAPT (F/O) EADI



1 FOR LIGHT CONDITIONS, PUT A COVER ON THE SENSOR.
FOR NO LIGHT CONDITIONS, POINT A LIGHT SOURCE AT THE SENSOR.

Brightness Control Problems on Capt (F/O) EADI
Figure 105

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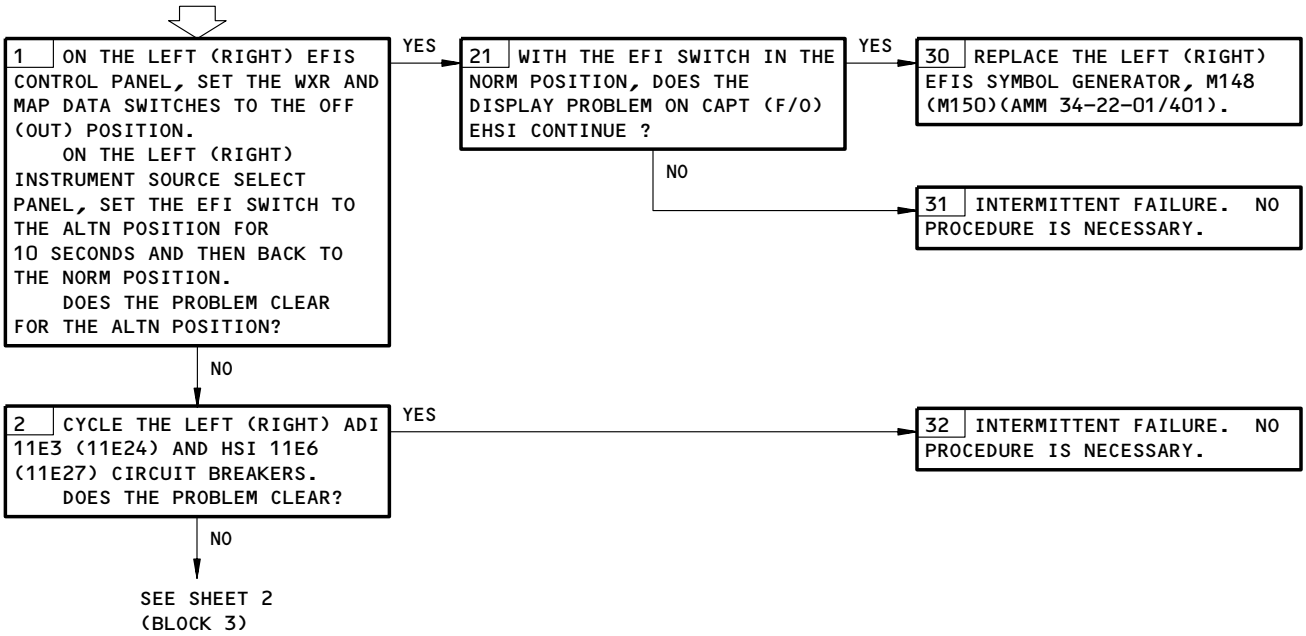
PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7,11E3,11E4,11E6,11E24,11E25,11E27,11F8,
11F9,11F24,11F29

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

DISPLAY PROBLEMS ON CAPT (F/O) EHSI



Display Problems on Capt (F/O) EHSI
Figure 106 (Sheet 1)

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FROM SHEET 1
(BLOCK 2)

NO

3 PUSH AND HOLD THE TEST SWITCH ON THE OVERHEAD LIGHTING CONTROL PANEL.
DOES "TEST FAIL DU" SHOW ON THE LEFT (RIGHT) EHSI?

YES

22 RELEASE THE TEST SWITCH ON THE OVERHEAD LIGHTING CONTROL PANEL. REMOVE THE LEFT (RIGHT) EHSI, N5 (N45) (AMM 34-22-04/401), AND LOOK AT THE COOLING AIR INLET SCREEN ON THE REAR OF THE UNIT. 1
DOES THE INLET SCREEN SHOW BLOCKAGE?

NO

33 REPLACE THE LEFT (RIGHT) EHSI, N5 (N45)(AMM 34-22-04/401).
PUSH THE RESET SWITCH ON THE LEFT (RIGHT) AND CENTER EFIS SYMBOL GENERATORS, M148 (M150) AND M149.

YES

34 CLEAN THE INLET SCREEN. 2
INSTALL THE SAME LEFT (RIGHT) EHSI, N5 (N45) (AMM 34-22-04/401).
PUSH THE RESET SWITCH ON THE LEFT (RIGHT) AND CENTER EFIS SYMBOL GENERATORS, M148 (M150) AND M149.
GO TO BLOCK 2.

NO

35 RELEASE THE TEST SWITCH ON THE OVERHEAD LIGHTING CONTROL PANEL. REPLACE THE LEFT (RIGHT) EHSI, N5 (N45) (AMM 34-22-04/401).
IF THE PROBLEM CONTINUES, EXAMINE ALL THE EHSI CONNECTIONS AND REPAIR THEM AS NECESSARY (WDM 34-22-15,-16,-25,-26,-34,-35).
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUITS FOR THE EFI SWITCH ON THE ISTRUMENT SOURCE SELECT PANEL (WDM 34-22-17,-27,-37).

1 ON THE AVIONICS COOLING MONITOR ON THE P61 PANEL, MAKE SURE THE INDICATING BALL SHOWS IN THE WINDOW BEFORE YOU REMOVE THE UNIT. IF THE BALL DOES NOT SHOW AND THE PROBLEM CONTINUES AFTER YOU EXAMINE AND CLEAN THE INLET SCREEN, EXAMINE AND REPAIR DAMAGE OR DISCONNECTIONS OF THE COOLING AIR DUCTS.

2 EXAMINE THE INLET SCREEN ON THE BACK OF THE OTHER EHSI, THE TWO EADIs (AMM 34-22-03/401), AND THE TWO EICAS DISPLAY UNITS (AMM 31-41-01/401).

Display Problems on Capt (F/O) EHSI
Figure 106 (Sheet 2)

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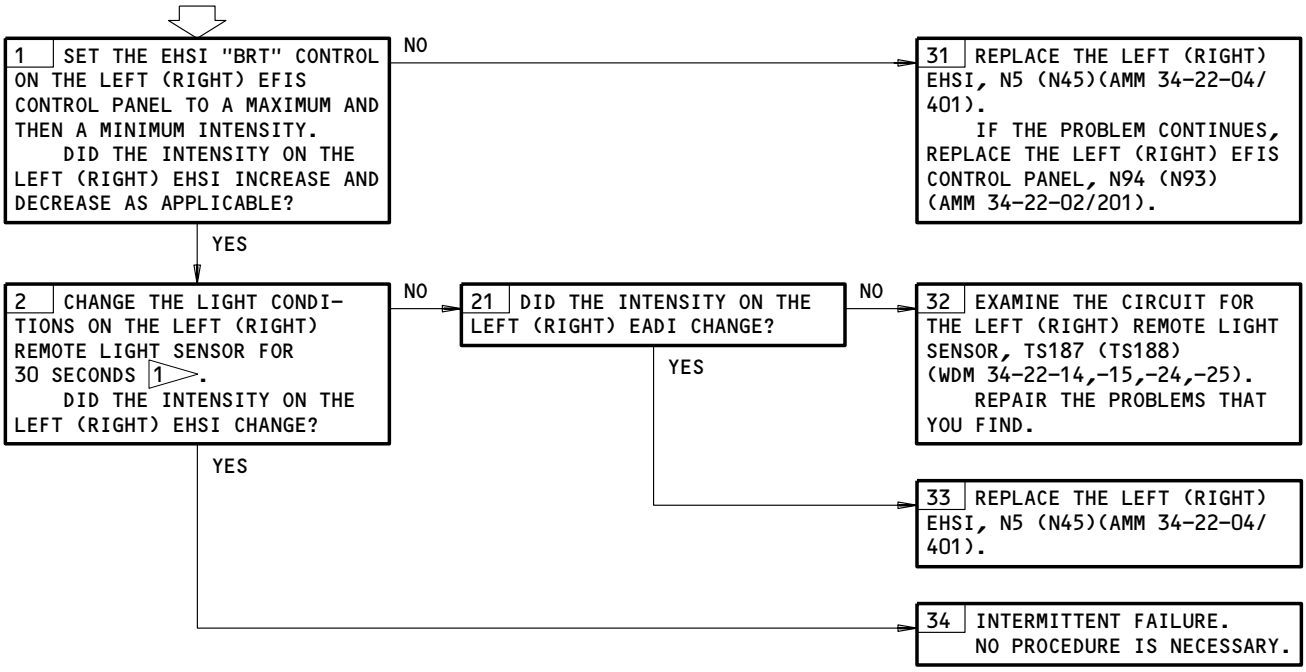
PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7,11E3,11E4,11E6,11E24,11E25,11E27,11F8,11F9,
11F24,11F29

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

BRIGHTNESS CONTROL PROBLEM ON CAPT (F/O) EHSI



1 FOR LIGHT CONDITIONS, PUT A COVER ON THE SENSOR.
FOR NO LIGHT CONDITIONS, POINT A LIGHT SOURCE AT THE SENSOR.

Brightness Control Problems on Capt (F/O) EHSI
Figure 107

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PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7, 11E3, 11E4, 11E6, 11E24, 11E25, 11E27, 11F8, 11F9, 11F24, 11F29

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

EFIS BITE PROCEDURE

1 ON THE LEFT AND RIGHT EFIS CONTROL PANELS, SET THE WXR SWITCH TO THE ON POSITION, ALL THE MAP DATA SWITCHES TO THE ON POSITION 2, THE MODE SWITCH TO THE PLAN POSITION, THE DH REF TO 50, AND ALL THE BRT CONTROLS FULLY CLOCKWISE.
ON THE LEFT AND RIGHT INSTRUMENT SOURCE SELECT PANELS, SET THE EFI SWITCH TO THE ALT POSITION AND BACK TO THE NORMAL POSITION.
ON THE LEFT AND RIGHT EFIS SYMBOL GENERATORS, PUSH THE RESET SWITCH.
ON THE OVERHEAD LIGHTING CONTROL PANEL, PUSH AND HOLD THE TEST SWITCH.
SET THE MODE SWITCHES ON THE EFIS CONTROL PANELS TO EACH MODE FOR 15 SECONDS.
IS THE MESSAGE, "SG FAIL", SHOWN ON THE LEFT (RIGHT) EADI OR EHSI?

NO → 41 THE MESSAGE IS AN INTERMITTENT MESSAGE. NO ACTION IS REQUIRED.

YES → SEE SHEET 2 (BLOCK 2)

1 DISENGAGE THE TEST SWITCH ON THE OVERHEAD LIGHTING CONTROL PANEL.

2 DO NOT PUSH THE INOP SWITCH ON THE EFIS CONTROL PANEL. IF YOU DO, INCORRECT DISPLAY WILL OCCUR.

3 ON THE AVIONICS COOLING MONITOR ON THE P61 PANEL, MAKE SURE THE INDICATING BALL SHOWS IN THE WINDOW BEFORE YOU REMOVE THE UNIT. IF THE BALL DOES NOT SHOW AND THE PROBLEM CONTINUES AFTER YOU EXAMINE AND CLEAN THE INLET SCREEN, EXAMINE AND REPAIR DAMAGE OR DISCONNECTIONS OF THE COOLING AIR DUCTS.

EFIS BITE Procedure
Figure 108 (Sheet 1)

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FROM SHEET 1
(BLOCK 1)

YES

2 IS THE MESSAGE, "TEST FAIL DU", SHOWN ON THE LEFT (RIGHT) EADI OR EHSI?

YES

42 REMOVE THE LEFT (RIGHT) EADI, N4 (N44) (AMM 34-22-03/401), OR THE LEFT (RIGHT) EHSI, N5 (N45) (AMM 34-22-04/401), AS APPLICABLE. 1 3

LOOK AT THE COOLING AIR INLET SCREEN ON THE REAR OF THE UNIT. IF THE SCREEN SHOWS BLOCKAGE, CLEAN IT AND INSTALL THE SAME UNIT.

DO THE PROCEDURE IN STEP 1 AGAIN. IF THERE IS NO BLOCKAGE, REPLACE THE LEFT (RIGHT) EADI, N4 (N44) (AMM 34-22-03/401), OR THE LEFT (RIGHT) EHSI, N5 (N45) (AMM 34-22-04/401).

IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE CENTER EFIS SG, M149, CONNECTOR D413D, PINS A9, B9, F9 AND G9, TO THE RIGHT EADI, N44, AND THE RIGHT EHSI, N45, CONNECTORS D807 AND D809, PINS 22 AND 23 (WDM 34-22-34).

REPAIR THE PROBLEMS THAT YOU FIND.

IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE CENTER EFIS SG, M149, CONNECTOR D413A, PINS A9, B9, F9 AND G9, TO THE LEFT EADI, N4, AND THE LEFT EHSI, N5, CONNECTORS D107 AND D109, PINS 22 AND 23 (WDM 34-22-35).

REPAIR THE PROBLEMS THAT YOU FIND.

NO

SEE SHEET 3
(BLOCK 3)

EFIS BITE Procedure
Figure 108 (Sheet 2)

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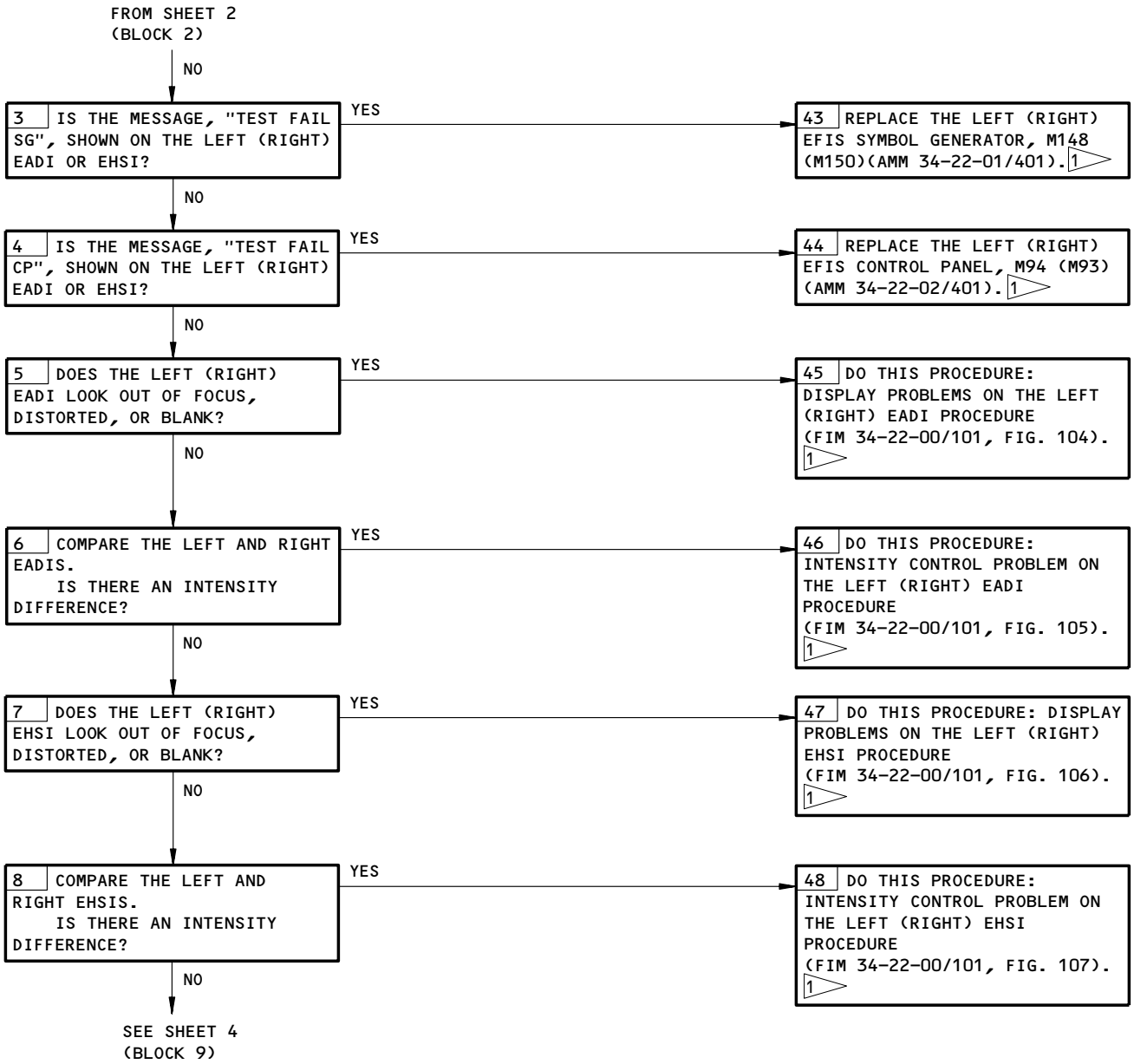

EFIS BITE Procedure
Figure 108 (Sheet 3)

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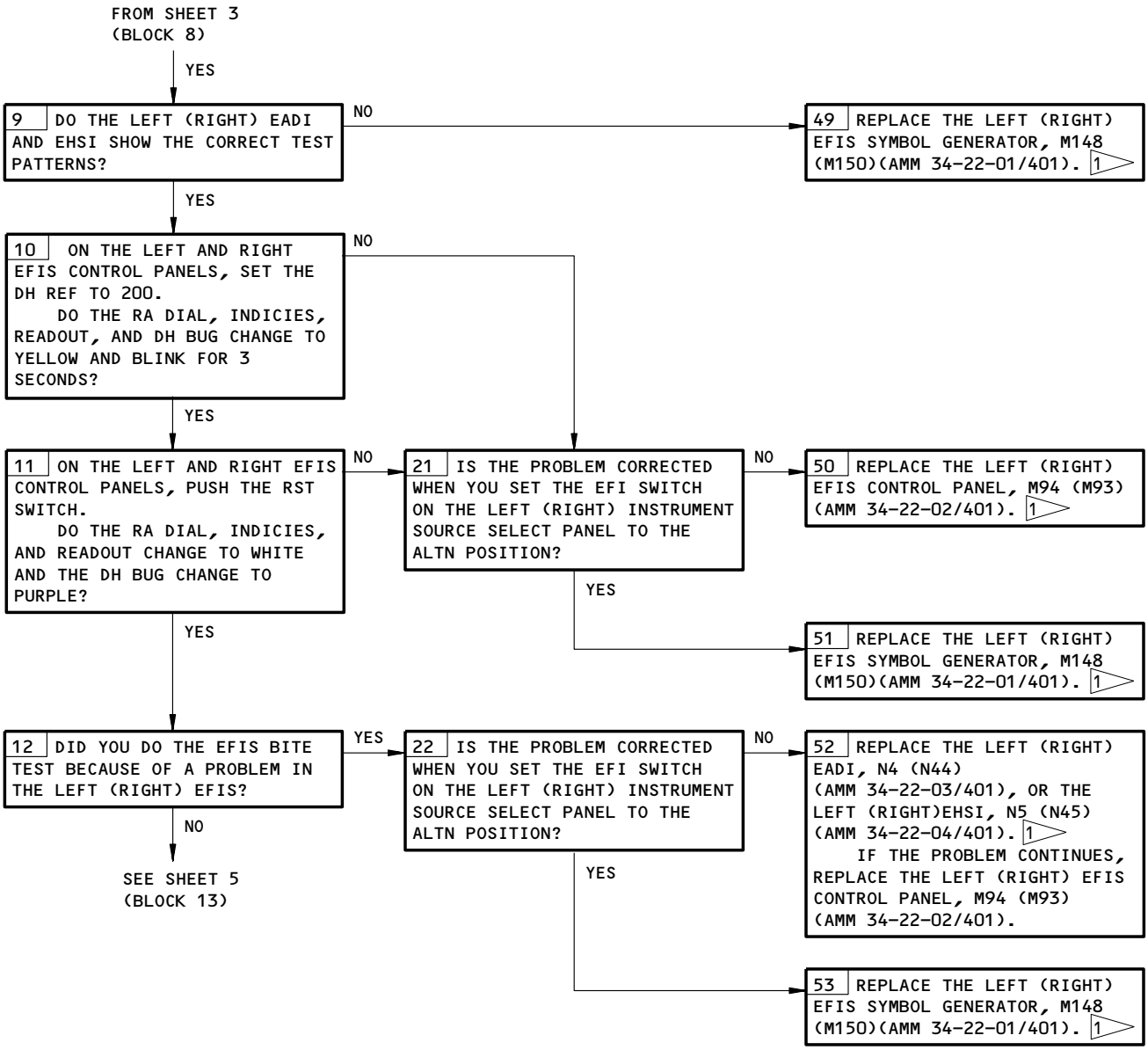

EFIS BITE Procedure
Figure 108 (Sheet 4)

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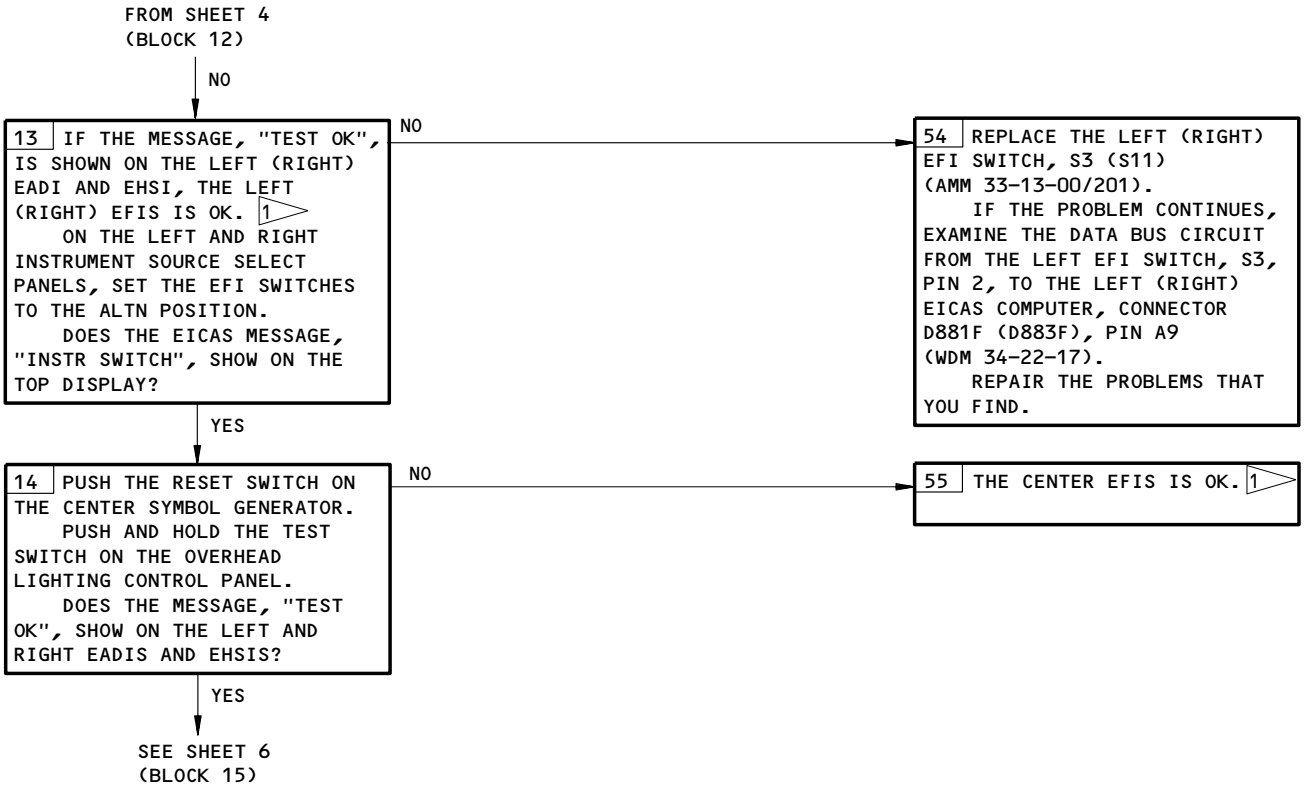

EFIS BITE Procedure
Figure 108 (Sheet 5)

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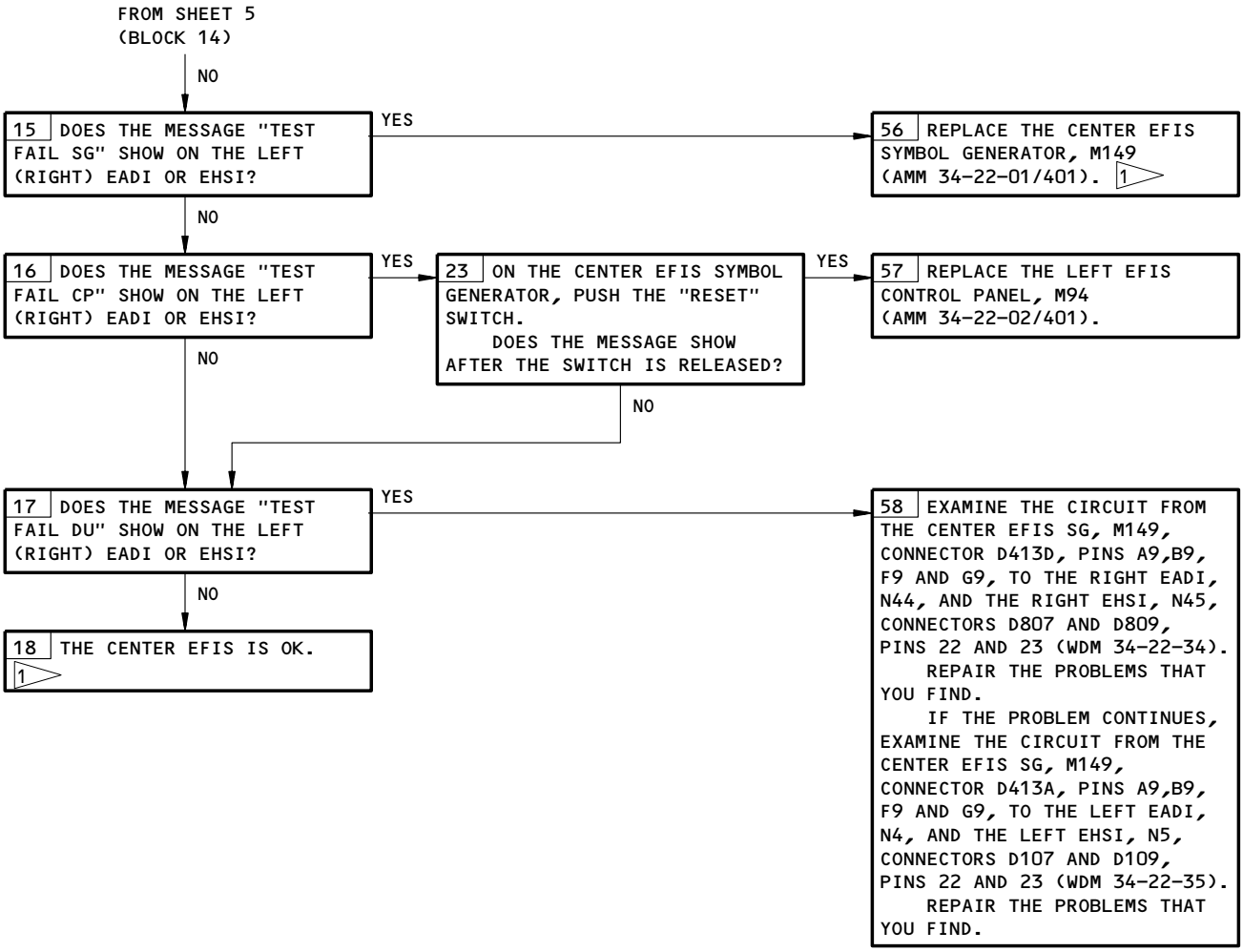

EFIS BITE Procedure
Figure 108 (Sheet 6)

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
EICAS (AMM 31-41-00/201)
IRS (AMM 34-21-00/501)
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7, 11E3, 11E4, 11E6, 11E24, 11E25, 11E27, 11F8, 11F9, 11F24, 11F29

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

ATTITUDE COMPARATOR PROBLEMS

1 MAKE SURE THE IRUs ARE ENERGIZED AND ALIGNED (AMM 34-21-00/501).
MAKE SURE THE EFI SOURCE SELECT SWITCHES ARE IN THE "NORM POSITION".
PUSH THE STATUS SWITCH ON THE EICAS DISPLAY SELECT PANEL, M10195.
DOES THE EICAS MESSAGE, "COMPARATOR BITE", SHOW ON THE BOTTOM DISPLAY?

NO → SEE SHEET 2 (BLOCK 2)

YES → **21** DOES THE "COMP" FLAG SHOW ON THE CAPT EHSI/EADI?

YES → **31** REPLACE THE RIGHT EFIS SG, M150 (AMM 34-22-01/401).
IF THE FAULT CONTINUES, EXAMINE THE CIRCUIT FROM THE RIGHT EFIS SG, M150, CONNECTOR D373E, PINS A13 AND B13, TO THE LEFT EFIS SG, M148, CONNECTOR D425A, PINS C2 AND D2.
MAKE SURE THAT THE LEFT EFIS SG, M148, CONNECTOR D425D, PIN F13 IS NOT GROUNDED (WDM 34-22-13; WDM 34-22-23). REPAIR THE PROBLEMS THAT YOU FIND.

NO → **32** REPLACE THE LEFT EFIS SG, M148 (AMM 34-22-01/401).
IF THE FAULT CONTINUES, EXAMINE THE CIRCUIT FROM THE LEFT EFIS SG, M148, CONNECTOR D425E, PINS A13 AND B13, TO THE RIGHT EFIS SG, M150, CONNECTOR D373A, PINS C2 AND D2.
MAKE SURE THAT THE RIGHT EFIS SG, M150, CONNECTOR D373D, PIN F13 IS NOT GROUNDED (WDM 34-22-13; WDM 34-22-33). REPAIR THE PROBLEMS THAT YOU FIND.

Attitude Comparator Problems
Figure 109 (Sheet 1)

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FROM SHEET 1
(BLOCK 1)

NO

2 SET THE EFI SWITCH ON THE LEFT INSTRUMENT SOURCE SELECT PANEL TO THE "ALTN" POSITION.
DOES THE EICAS MESSAGE, "COMPARATOR BITE", SHOW ON THE BOTTOM DISPLAY?

YES

22 DOES THE "COMP" FLAG SHOW ON THE CAPT EHSI/EADI?

YES

33 REPLACE THE RIGHT EFIS SG, M150 (AMM 34-22-01/401).
IF THE FAULT CONTINUES, EXAMINE THE CIRCUIT FROM THE RIGHT EFIS SG, M150, CONNECTOR D373E, PINS A13 AND B13, TO THE CENTER EFIS SG, M149, CONNECTOR D413A, PINS C2 AND D2.
MAKE SURE THAT THE RIGHT EFIS SG, M150, CONNECTOR D373D, PIN F13 IS GROUNDED (WDM 34-22-23; WDM 34-22-33). REPAIR THE PROBLEMS THAT YOU FIND.
SET THE EFI SWITCH ON THE LEFT INSTRUMENT SOURCE SELECT PANEL TO THE "NORM" POSITION.

NO

34 REPLACE THE CENTER EFIS SG, M149 (AMM 34-22-01/401).
IF THE FAULT CONTINUES, EXAMINE THE CIRCUIT FROM THE CENTER EFIS SG, M149, CONNECTOR D413E, PINS A13 AND B13, TO THE RIGHT EFIS SG, M150, CONNECTOR D373D, PINS C2 AND D2.
MAKE SURE THAT THE RIGHT EFIS SG, M150, CONNECTOR D373D, PIN F13 IS GROUNDED (WDM 31-31-12; WDM 34-22-23). REPAIR THE PROBLEMS THAT YOU FIND.
SET THE EFI SWITCH ON THE LEFT INSTRUMENT SOURCE SELECT PANEL TO THE "NORM" POSITION.

NO

SEE SHEET 3
(BLOCK 3)

Attitude Comparator Problems
Figure 109 (Sheet 2)

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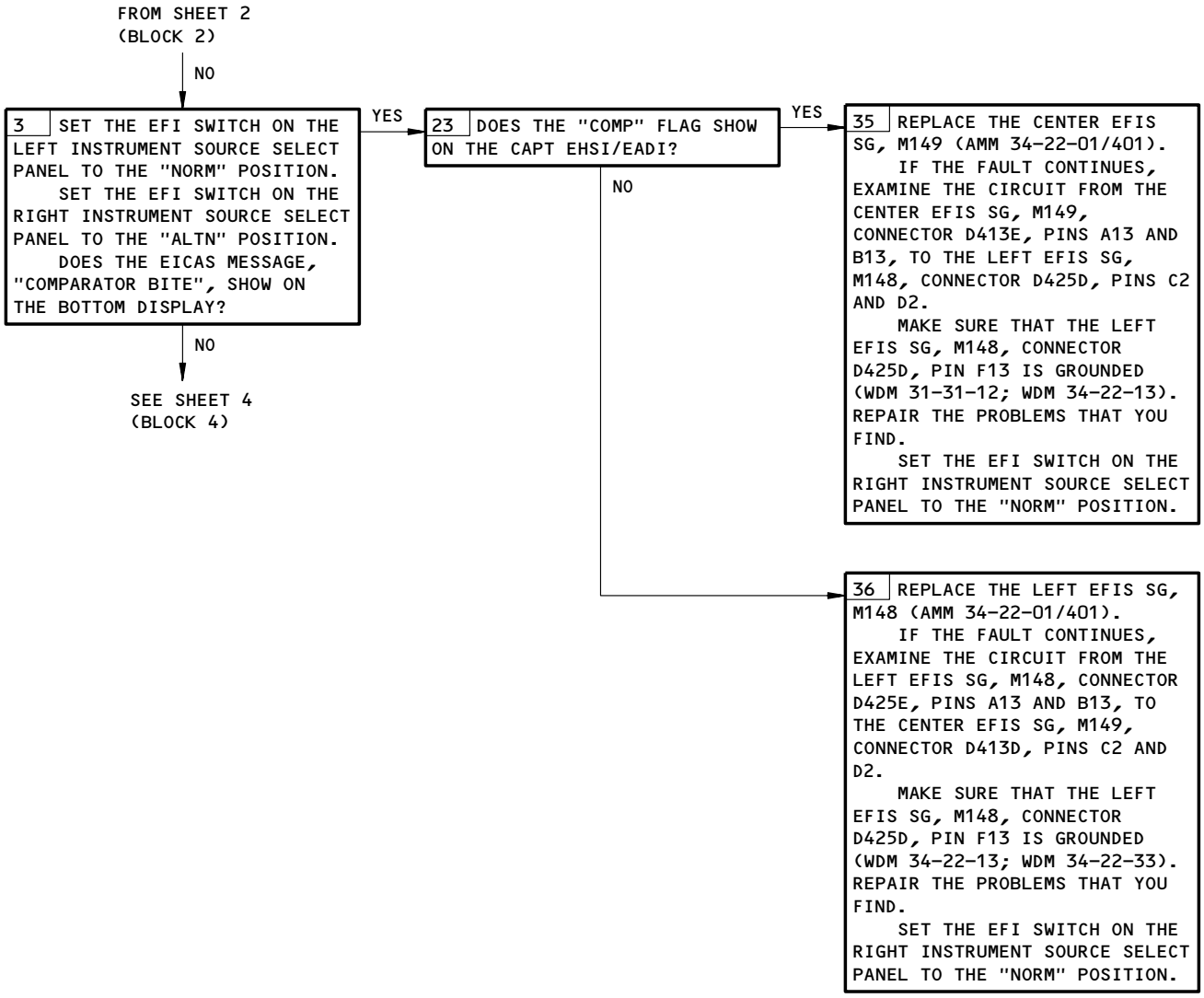

Attitude Comparator Problems
Figure 109 (Sheet 3)

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FROM SHEET 3
(BLOCK 3)

NO

4 SET THE EFI SWITCHES ON THE INSTRUMENT SOURCE SELECT PANELS TO THE "ALT" POSITION.
PUSH THE TEST SWITCH ON THE LEFT EFIS SG, M148.
DOES THE EICAS MESSAGE, "ATT DISAGREE", SHOW ON THE TOP DISPLAY?

NO → **24** RELEASE THE TEST SWITCH ON THE LEFT EFIS SG.
PUSH AND HOLD THE TEST SWITCH ON THE RIGHT EFIS SG.
DOES THE EICAS MESSAGE "ATT DISAGREE" SHOW ON THE TOP DISPLAY?

NO → **37** RELEASE THE TEST SWITCH ON THE RIGHT EFIS SG.
EXAMINE THE CIRCUIT FROM THE EFIS/EICAS ATT COMPARISON RELAY, K1297, CONNECTOR D2777, PINS C2 AND D2, TO THE LEFT AND RIGHT EICAS COMPUTERS, M10181 AND M10182, CONNECTORS D881E AND D883E, PINS F11 AND F12 (WDM 34-22-33). REPAIR THE PROBLEMS THAT YOU FIND.

YES → **38** RELEASE THE TEST SWITCH ON THE RIGHT EFIS SG.
REPLACE THE LEFT EFIS SG, M148 (AMM 34-22-01/401).
IF THE FAULT CONTINUES, EXAMINE THE CIRCUIT FROM THE LEFT EFIS SG, M148, CONNECTOR D425E, PINS A13 AND B13, TO THE EFIS/EICAS ATT COMPARATOR RELAY, K1297, CONNECTOR D2777, PINS C3 AND D3 (WDM 31-31-12; WDM 34-22-13; WDM 34-22-33). REPAIR THE PROBLEMS THAT YOU FIND.

YES

5 RELEASE THE TEST SWITCH ON THE LEFT EFIS SG.
PUSH AND HOLD THE TEST SWITCH ON THE RIGHT EFIS SG, M150.
DOES THE EICAS MESSAGE "ATT DISAGREE" SHOW ON THE TOP DISPLAY?

NO → **39** RELEASE THE TEST SWITCH ON THE RIGHT EFIS SG.
REPLACE THE RIGHT EFIS SG, M150 (AMM 34-22-01/401).
IF THE FAULT CONTINUES, EXAMINE THE CIRCUIT FROM THE RIGHT EFIS SG, M150, CONNECTOR D373E, PINS A13 AND B13, TO THE EFIS/EICAS ATT COMPARATOR RELAY, K1297, CONNECTOR D2777, PINS C1 AND D1 (WDM 34-22-23; WDM 34-22-33). REPAIR THE PROBLEMS THAT YOU FIND.

YES → **40** SET THE EFI SWITCHES ON THE INSTRUMENT SOURCE SELECT PANELS TO THE "NORM" POSITION.
THE ATTITUDE COMPARISON SYSTEM IS CORRECT.

Attitude Comparator Problems
Figure 109 (Sheet 4)

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1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR YOU CAN CAUSE DAMAGE TO THE CONNECTORS.

      (1) The ARINC 429 data bus charts give data necessary to make an analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminal or at the LRU connectors.
   B. Equipment
      (1) Standard multi-meter
      (2) 429EBP Data Bus Analyzer (recommended)
          JcAIR Instrumentation
          400 Industrial Parkway
          Industrial Airport, KS 66031

          429-2 Data Bus Analyzer (alternative)
          Interface Technology
          150 E. Arrow Highway
          San Dimas, CA 91773
      (3) A34011-1 Breakout Box (recommended)
          A34011-112 Breakout Box (alternative)

EFIS CP							
DIGITAL OUTPUT BUS CHART							
BUS NAME / SOURCE	TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
EFISCP (L R)	A	1		36 35	429	LO	OUTPUT BUS

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EFIS CP ID=C5								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
WXR RANGE	A	271	DIS	10	00	N/A	ALWAYS POSITIVE	N/A
EFIS DISCRETES #1	A	272	DIS	5	00	N/A	N/A	N/A
EFIS DISCRETES #2	A	273	DIS	5	00	N/A	N/A	N/A
DH SELECTED-D	A	170	BCD	5	00	-20,+2500	ABOVE GRND	FEET
DH SELECTED	A	370	BNR	5	00	± 16,384	ABOVE GRND	FEET

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EFIS CP				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
SPARE	271	11	TBD	
SPARE	271	12	TBD	
SPARE	271	13	TBD	
SPARE	271	14	TBD	
SPARE	271	15	TBD	
SPARE	271	16	TBD	
SPARE	271	17	TBD	
SPARE	271	18	TBD	
SPARE	271	19	TBD	
SPARE	271	20	TBD	
SPARE	271	21	TBD	
SPARE	271	22	TBD	
SPARE	271	23	TBD	
10 MI RANGE SEL	271	29-24	000010	
160 MI RANGE SEL	271	29-24	100000	
20 MI RANGE SEL	271	29-24	000100	
320 MI RANGE SEL	271	29-24	000000	
40 MI RANGE SEL	271	29-24	001000	
5 MI RANGE SEL	271	29-24	000001	
80 MI RANGE SEL	271	29-24	010000	

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EFIS CP				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
INVALID DATA	271	31-30	01	
SLAVE	271	31-30	11	
TEST	271	31-30	10	
VALID DATA	271	31-30	00	
ILS (MOD) MODE SEL	272	16-11	000100	
MAP MODE SELECTED	272	16-11	000001	
PLAN MODE SELECTED	272	16-11	001000	
ILS (STD) MODE SEL	272	16-11	100000	
VOR (STD) MODE SEL	272	16-11	010000	
VOR (MOD) MODE SEL	272	16-11	000010	
SUM CHECK	272	17	NOT OK	OK
SPARE	272	18	1	0
AIRPORTS	272	23-19	10000	
NAV AIDS	272	23-19	00010	
RTE DATA	272	23-19	01000	
SPARE	272	23-19	00001	
WPT	272	23-19	00100	
MAP ORIENT	272	24	TRACK	HDG

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EFIS CP				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
VOR/ILS ORIENT	272	25	TRACK	HDG
APPROACH MODE	272	9-27	001	
FULL COMPASS ROSE	272	29-27	010	
RSV TEST	272	29-27	100	
DEG PITCHREF S/B	273	19-11	NEG	POS 0.100
DEG PITCHREF	273	19-11	000000001	
0.200 DEG PITCHREF	273	19-11	000000010	
0.400 DEG PITCHREF	273	19-11	000000100	
0.800 DEG PITCHREF	273	19-11	000001000	
RA ALERT RESET	272	26	RESET	NOT RESET
1.600 DEG PITCHREF	273	19-11	000010000	
12.80 DEG PITCHREF	273	19-11	010000000	
3.200 DEG PITCHREF	273	19-11	000100000	
6.400 DEG PITCHREF	273	19-11	001000000	
FLT PATH DATA	273	20	ON	OFF
SPARE	273	21	1	0
SPARE	273	22	1	0
WXR DATA	273	23	WXR SEL	NOT SEL
10 MI RANGE SEL	273	29-24	000010	
160 MI RANGE SEL	273	29-24	100000	

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EFIS CP				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
20 MI RANGE SEL	273	29-24	000100	
320 MI RANGE SEL	273	29-24	000000	
40 MI RANGE SEL	273	29-24	001000	
5 MI RANGE SEL	273	29-24	000001	
80 MI RANGE SEL	273	29-24	010000	

EFIS SG							
DIGITAL OUTPUT BUS CHART							
BUS NAME / SOURCE	TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
EFISSG (L C R)	A	1	E	A13 B13	429	LO	OUTPUT BUS

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EFIS SG ID=25								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
GROUND SPEED	A	012	BCD	4	00	0-2000	ALWAYS POS	KNOTS
FLT DIR-ROLL	A	140	BNR	4	00	± 180	RIGHT	DEG
FLT DIR-PITCH	A	141	BNR	4	00	± 180	UP	DEG
A/T FAST SLOW CMD	A	142	BNR	4	00	± 32	OVERSPEED	KNOTS
RADIO HEIGHT	A	164	BNR	4	00	± 8192	ABOVE TOUCDN	FEET
LOCALIZER DEV	A	173	BNR	4	00	± .4	FLY RIGHT	DDM
GLIDESLOPE DEV	A	174	BNR	4	00	± .8	ABOVE BEAM	DDM
MODE DISCRETES #2	A	270	DIS	4	00	N/A	N/A	N/A
AFDS MODE STATUS-3	A	274	BNR	4	00	N/A	N/A	N/A
AFDS MODE STATUS-4	A	275	BNR	4	00	N/A	N/A	N/A
TRACK ANGLE TRUE	A	313	BNR	4	00	± 180	CW FROM NOR	DEG
TRUE HEADING	A	314	BNR	4	00	± 180	CW FROM NOR	DEG
TRACK ANGLE-MAG	A	317	BNR	4	00	± 180	CW FROM NOR	DEG
MAGNETIC HEADING	A	320	BNR	4	00	± 180	CW FROM NOR	DEG
PITCH ANGLE	A	324	BNR	4	00	± 180	UP	DEG
ROLL ANGLE	A	325	BNR	4	00	± 180	RT WING DN	DEG
EFISSG MAINT WORD	A	350	DIS	4	00	N/A	N/A	N/A
CP & DU MAINT WORD	A	351	DIS	4	00	N/A	N/A	N/A
SENS STAT MAINT WD	A	352	DIS	4	00	N/A	N/A	N/A
MODE DISCRETES #1	A	353	DIS	4	00	N/A	N/A	N/A

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EFIS SG				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
SPARE	270	11	1	0
SPARE	270	12	1	0
SPARE	270	13	1	0
DH ALERT	270	14	ALERT	OK
DH+DELTA (H) ALERT	270	15	ALERT	OK
H ALERT	270	16	ALERT	OK
FMC/IRS GROUND SPD	270	17	FMC	IRS
FMC/IRS TRACK DATA	270	18	FMC	IRS
MAG/TRUE DATA	270	19	TRUE	MAG
SPARE	270	20	1	0
SPARE	270	21	1	0
SPARE	270	22	1	0
SPARE	270	23	1	0
SPARE	270	24	1	0

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EFIS SG				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
SPARE	270	25	1	0
SPARE	270	26	1	0
SPARE	270	27	1	0
SPARE	270	28	1	0
SPARE	270	29	1	0
SG OVERTEMP	350	11	FAULT	OK
SG MAIN PROCESSOR	350	12	FAULT	OK
SG MAIN MEMORY	350	13	FAULT	OK
SG DISPLAY DRIVE	350	14	FAULT	OK
SG DSPLY SEQUENCER	350	15	FAULT	OK
SG CONTROLLER	350	16	FAULT	OK
SG DIGTAL OUTPUT	350	17	FAULT	OK
SG I/O PROC NO.1	350	18	FAULT	OK
SG I/O PROC NO.2	350	19	FAULT	OK
SG I/O PROC NO.3	350	20	FAULT	OK
SPARE	350	21	1	0

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EFIS SG				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
SPARE	350	22	1	0
SPARE	350	23	1	0
SPARE	350	24	1	0
SPARE	350	25	1	0
SPARE	350	26	1	0
SPARE	350	27	1	0
SPARE	350	28	1	0
SPARE	350	29	1	0
SPARE	351	11	1	0
L-EADI ANOMALIES	351	12	FAULT	OK
L-EADI BEAM FAIL	351	13	FAULT	OK
L-EADI OVERTEMP	351	14	FAULT	OK
R-EADI ANOMALIES	351	15	FAULT	OK
R-EADI BEAM FAIL	351	16	FAULT	OK

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EFIS SG				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
R-EADI OVERTEMP	351	17	FAULT	OK
L-EHSI ANOMALIES	351	18	FAULT	OK
L-EHSI BEAM FAIL	351	19	FAULT	OK
L-EHSI OVERTEMP	351	20	FAULT	OK
R-EHSI ANOMALIES	351	21	FAULT	OK
R-EHSI BEAM FAIL	351	22	FAULT	OK
R-EHSI OVERTEMP	351	23	FAULT	OK
L-CP FAULT	351	24	FAULT	OK
R-CP FAULT	351	25	FAULT	OK
SPARE	351	26	1	0
SPARE	351	27	1	0
SPARE	351	28	1	0
SPARE	351	29	1	0
L-FCC DATA FAULT	352	11	FAULT	OK
C-FCC DATA FAULT	352	12	FAULT	OK
R-FCC DATA FAULT	352	13	FAULT	OK
L-FMC DATA FAULT	352	14	FAULT	OK
R-FMC DATA FAULT	352	15	FAULT	OK
TMC DATA FAULT	352	16	FAULT	OK
L-IRS DATA FAULT	352	17	FAULT	OK
C-IRS DATA FAULT	352	18	FAULT	OK
R-IRS DATA FAULT	352	19	FAULT	OK

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EFIS SG				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
L-ADC DATA FAULT	352	20	FAULT	OK
R-ADC DATA FAULT	352	21	FAULT	OK
L-VOR DATA FAULT	352	22	FAULT	OK
R-VOR DATA FAULT	352	23	FAULT	OK
L-DME DATA FAULT	352	24	FAULT	OK
R-DME DATA FAULT	352	25	FAULT	OK
RA DATA FAULT	352	26	FAULT	OK
ILS DATA FAULT	352	27	FAULT	OK
MLS DATA FAULT	352	28	FAULT	OK
WXR DATA FAULT	352	29	FAULT	OK
R EADI FAULT	353	12	FAULT	OK
SPARE	353	13	1	0
R CP FAULT	353	15	FAULT	OK
R EHSI FAULT	353	17	FAULT	OK
SG FAULT	353	18	FAULT	OK
SPARE	353	19	1	0
SPARE	353	20	1	0
SPARE	353	21	1	0
SPARE	353	22	1	0
SPARE	353	23	1	0
SPARE	353	24	1	0

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EFIS SG				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
SPARE	353	25	1	0
SPARE	353	26	1	0
SPARE	353	27	1	0
SPARE	353	28	1	0
SPARE	353	29	1	0

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STANDBY MAGNETIC COMPASS

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
COMPASS - STANDBY MAGNETIC, N99		1	FLT COMPT, P5	34-23-01

Standby Magnetic Compass - Component Index
Figure 101

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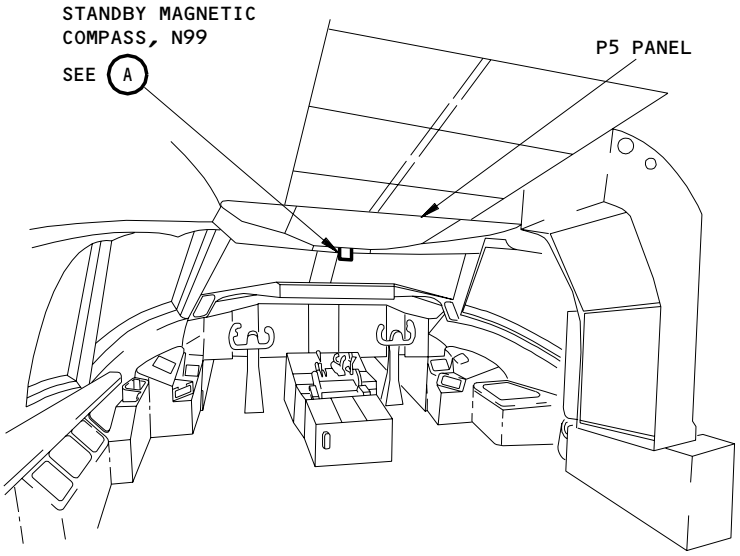
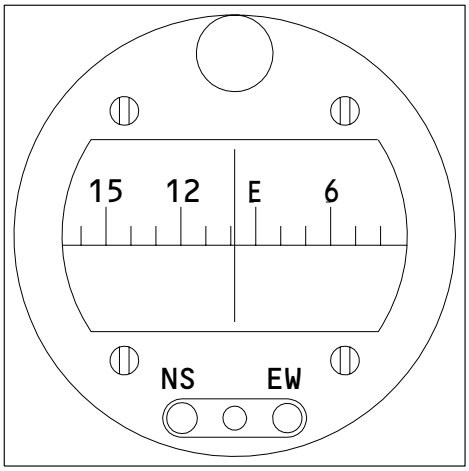


FLIGHT COMPARTMENT



STANDBY MAGNETIC COMPASS, N99

A

Standby Magnetic Compass - Component Location
Figure 102 (Sheet 1)

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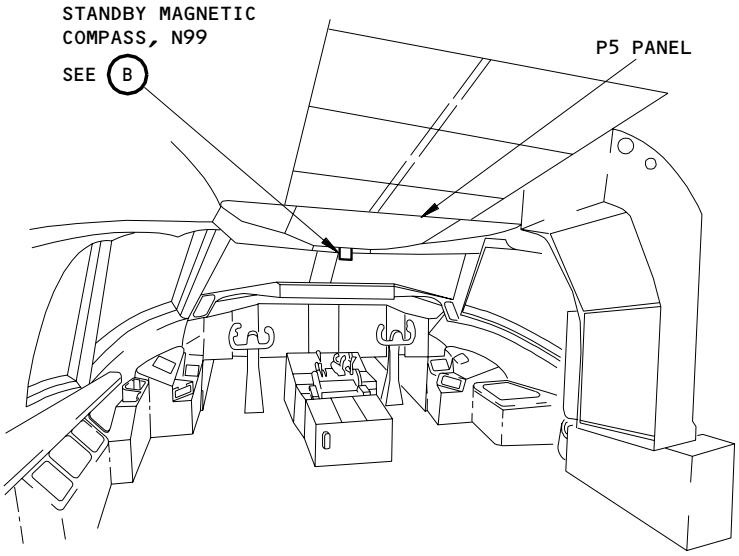
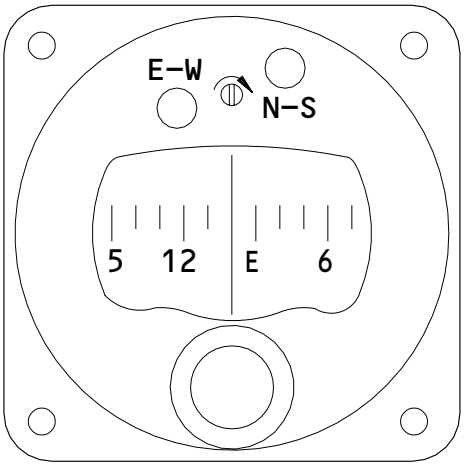


FLIGHT COMPARTMENT



STANDBY MAGNETIC COMPASS, N99

B

Standby Magnetic Compass - Component Location
Figure 102 (Sheet 2)

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STANDBY ATTITUDE REFERENCE SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
CHARGER - ISFD DEDICATED BATTERY, M11331 [1]	--	1	MAIN EQUIPMENT CTR, E1-4	34-24-01
CIRCUIT BREAKER -			FLT COMPT, P11	
ISFD, C2023 [2]	--	1	FLT COMPT, P1-3	*
STBY ATT IND, C619 [1]		1	11A5	*
STBY ILS IND, C604 [1]		1	11A9	*
DISPLAY - INTEGRATD STANDBY FLIGHT DISPLAY, N177 [1]	--	1	FLT COMPT, P1-3	34-24-01
INDICATOR - STANDBY ATTITUDE ILS, N20	--	1	FLT COMPT, P1	34-24-01
UNIT - STATIC INV/ILS PRCS, M917	--	1	119AL, MAIN EQUIP CTR, E1-4	34-24-02

* SEE THE WDM EQUIPMENT LIST

[1] AIRPLANES WITHOUT INTEGRATED STANDBY FLIGHT DISPLAY
[2] AIRPLANES WITH INTEGRATED STANDBY FLIGHT DISPLAY

Standby Attitude Reference System - Component Index
Figure 101

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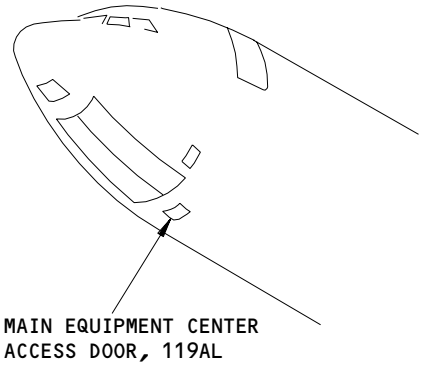
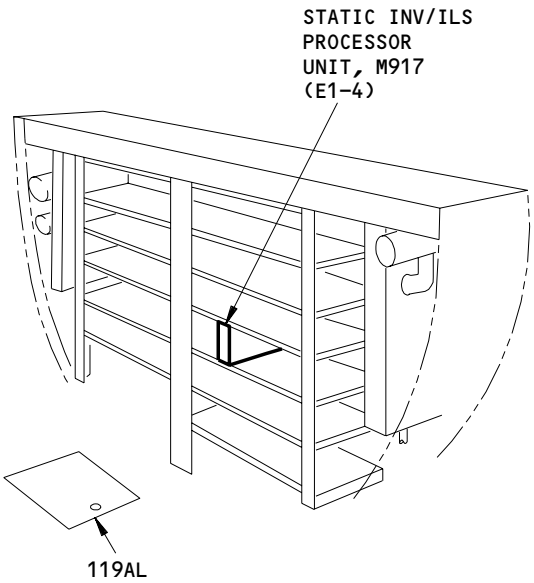
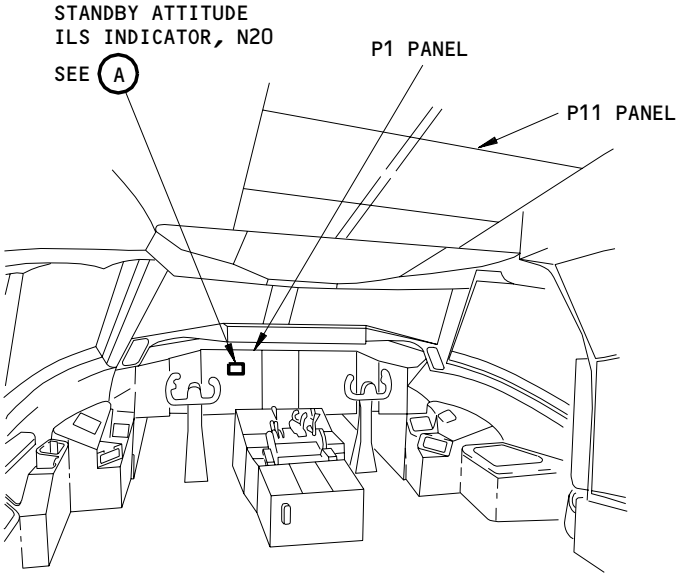
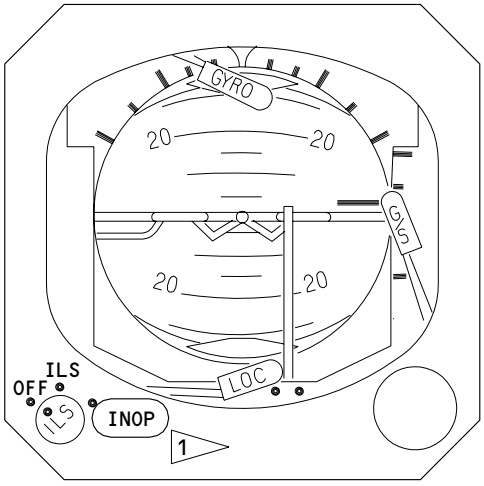




MAIN EQUIPMENT CENTER



FLIGHT COMPARTMENT



STANDBY ATTITUDE ILS INDICATOR, N20

A

SAS

SAS 1 MTH 275-299: B/CRS (INSTEAD OF INOP)

Standby Attitude Reference System - Component Location
Figure 102

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STANDBY ATTITUDE INDICATION PROBLEMS

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A2,11A5,11A9,11B7

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
ELECTRICAL POWER IS ON (MM 24-22-00/201)

1	REPLACE THE STANDBY ATTITUDE INDICATOR, N20 (MM 34-24-01/201). IF THE PROBLEM CONTINUES, REPLACE THE STATIC INVERTER/ILS PROCESSOR, M917 (MM 34-24-01/201).

Standby Attitude Indication Problems
Figure 103

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INSTRUMENT LANDING SYSTEM (ILS)

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ANTENNA - L DUAL G/S, M250	1	1	111A1, NOSE RADOME	34-31-03
ANTENNA - L DUAL LOC, M248	1	1	111A1, NOSE RADOME	34-31-04
ANTENNA - R/C DUAL G/S, M251	1	1	111A1, NOSE RADOME	34-31-03
ANTENNA - R/C DUAL LOC, M249		1	111A1, NOSE RADOME	34-31-04
CIRCUIT BREAKER -			FLT COMPT, P11	
ILS CENTER, C606		1	11A2	*
ILS LEFT, C603		1	11E10	*
ILS RIGHT, C605		1	11E31	*
INDICATOR - (FIM 34-22-00/101)				
LEFT ELECTRONIC ATTITUDE DIRECTOR, N4				
LEFT ELECTRONIC HORIZ SITUATION, N5				
RIGHT ELECTRONIC ATTITUDE DIRECTOR, N44				
RIGHT ELECTRONIC HORIZ SITUATION, N45				
INDICATOR - (FIM 34-24-00/101)				
STBY ATTITUDE ILS, N20				
PANEL - (FIM 23-51-00/101)				
CAPTAIN AUDIO SELECTOR, M70				
F/O AUDIO SELECTOR, M71				
FIRST OBSERVER AUDIO SELECTOR, M98				
PANEL - (FIM 34-22-00/101)				
LEFT EFIS CONTROL, M94				
RIGHT EFIS CONTROL, M93				
PANEL - ILS CONTROL, M87	2	1	FLT COMPT, P8	34-31-02
SYMBOL GENERATOR - (FIM 34-22-00/101)				
CENTER ELECTRONIC FLT INST SYS, M149				
LEFT ELECTRONIC FLT INST SYS, M148				
RIGHT ELECTRONIC FLT INST SYS, M150				
RECEIVER - CENTER ILS, M157	1	1	119AL, MAIN EQUIP CTR, E1-4	34-31-01
RECEIVER - LEFT ILS, M156	1	1	119AL, MAIN EQUIP CTR, E1-3	34-31-01
RECEIVER - RIGHT ILS, M158	1	1	119AL, MAIN EQUIP CTR, E1-5	34-31-01
RELAY - (FIM 31-01-36/101)				
SYS NO. 1 AIR/GND, K124				
RELAY - (FIM 31-01-37/101)				
SYS NO. 2 AIR/GND, K214				
SYS NO. 2 AIR/GND, K293				
UNIT - (FIM 34-24-00/101)				
STATIC INV/ILS PROCESS, M917				

* SEE THE WDM EQUIPMENT LIST

Instrument Landing System (ILS) - Component Index
Figure 101

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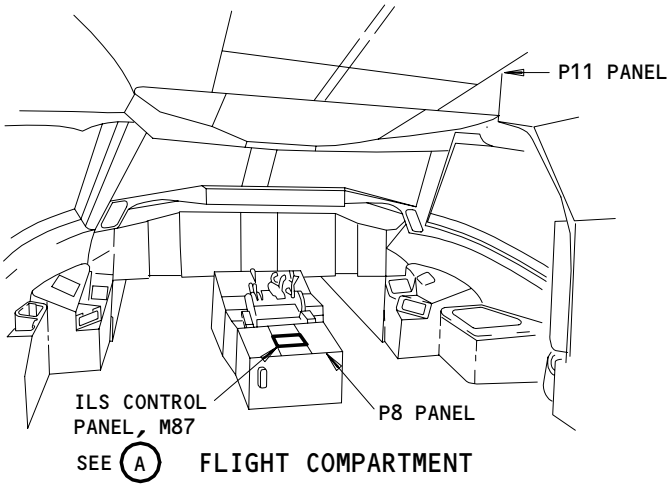
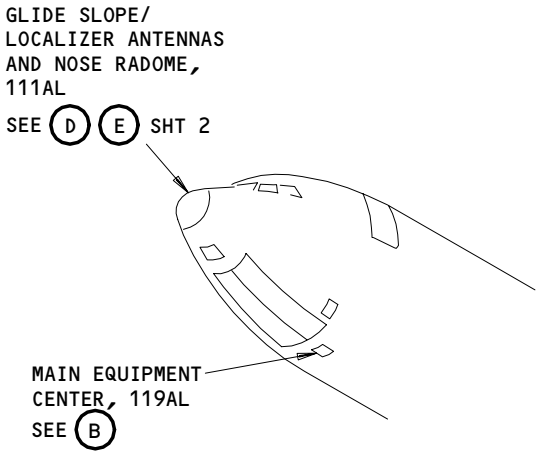
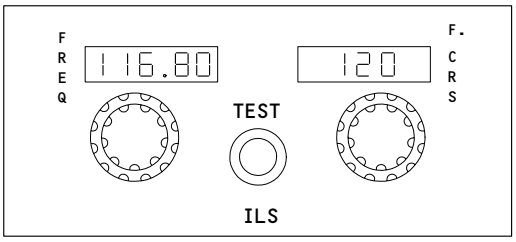
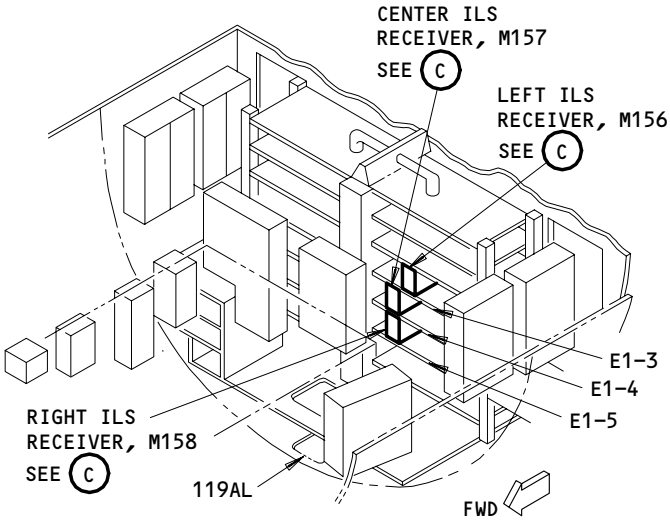






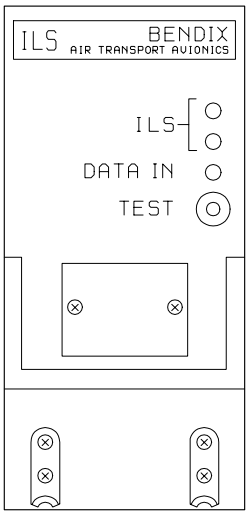
ILS CONTROL PANEL, M87

A



MAIN EQUIPMENT CENTER

B



LEFT, CENTER OR RIGHT ILS RECEIVER, M156, M157, OR M158

C

ILS - Component Location
Figure 102 (Sheet 1)

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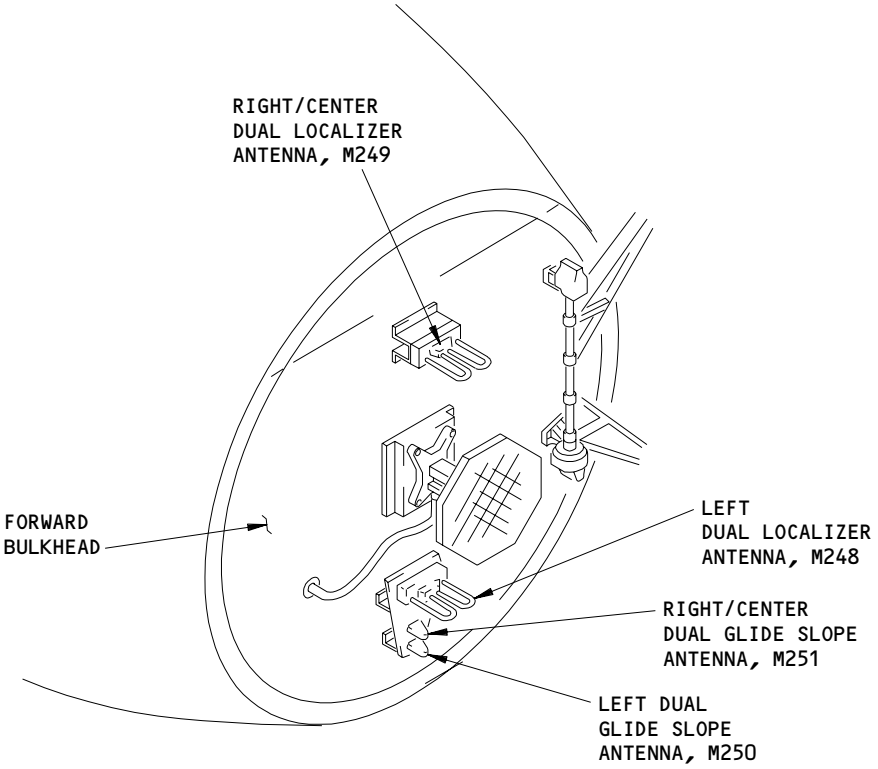
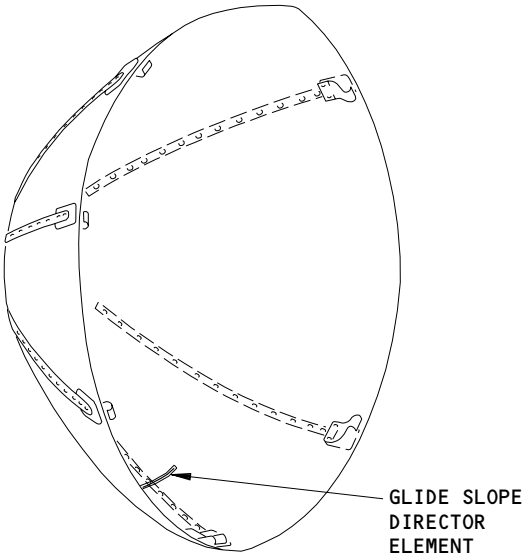


NOSE RADOME - OPEN

D



NOSE RADOME

E

ILS - Component Location (Detatils from Sht 1)
Figure 102 (Sheet 2)

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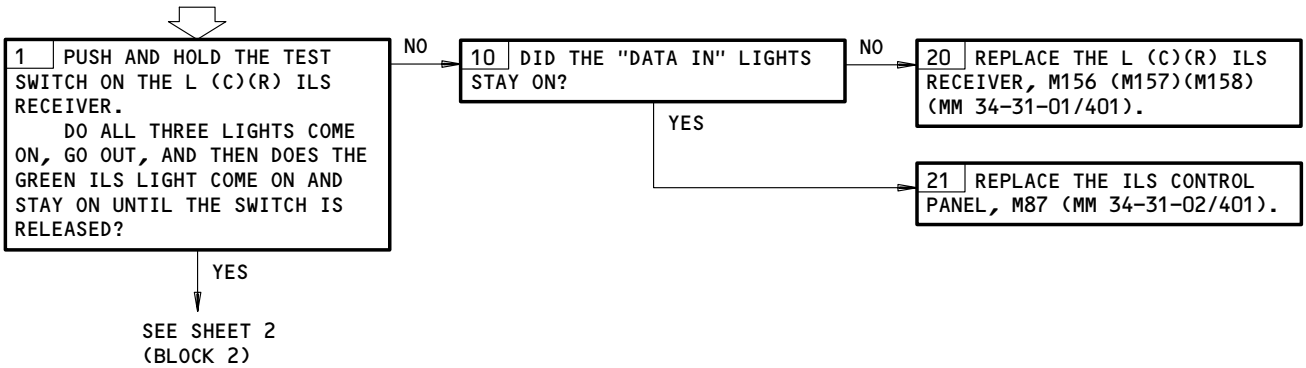
PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
EFIS (MM 34-22-00/501)
IRS (MM 34-21-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A2,11A9,11E4,11E6,11E10,11E25,11E27,11E31,11F8,
11F9,11F29

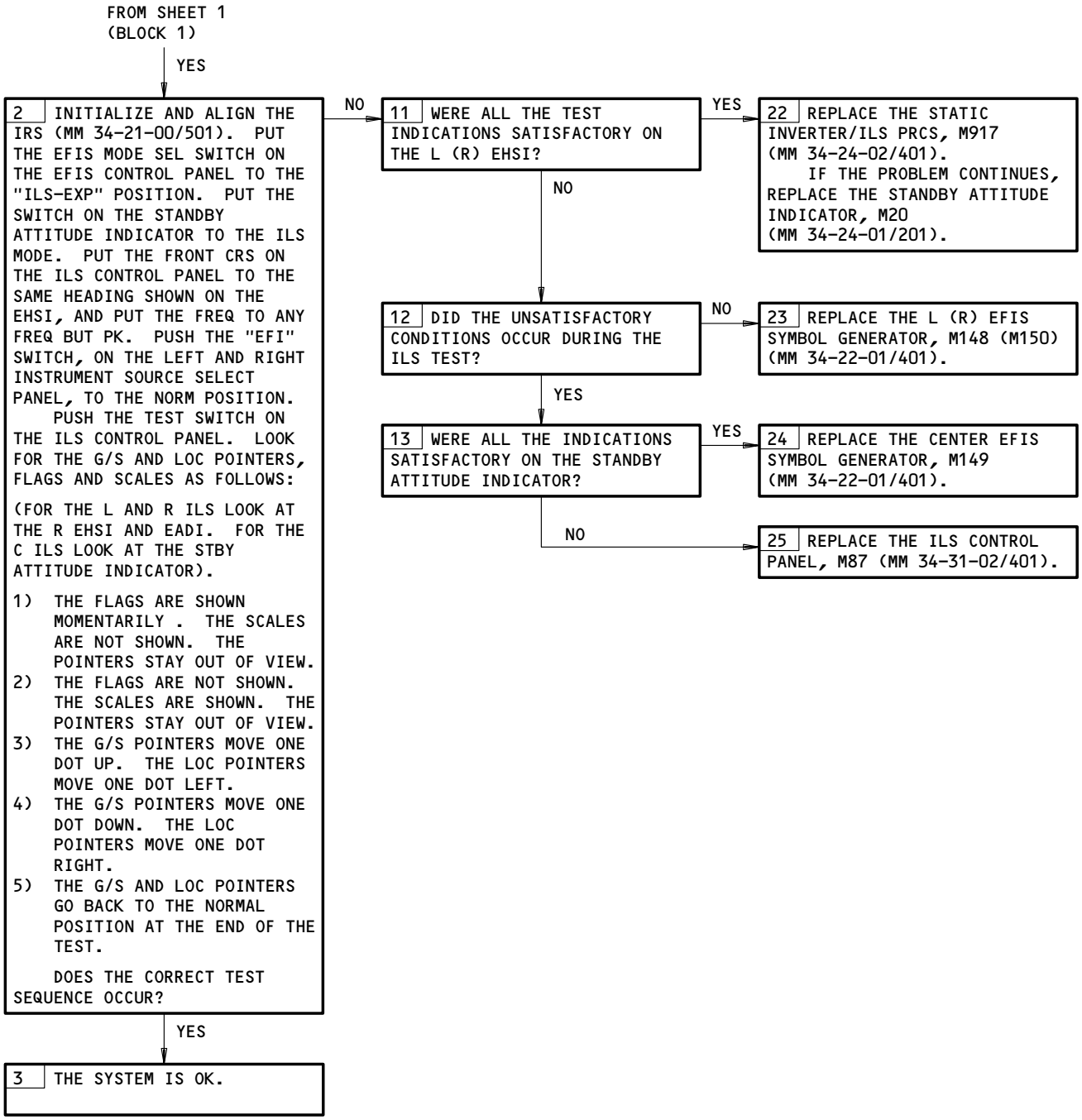
MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (MM 24-22-00/201)

ILS BITE PROCEDURE



ILS BITE Procedure
Figure 103 (Sheet 1)

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



ILS BITE Procedure
Figure 103 (Sheet 2)

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ABNORMAL ILS TEST RESPONSE ON CAPT (F/O) EADI & EHSI

PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
IRS INITIALIZED (MM 34-21-00/501)
EFIS (MM 34-22-00/501)

CB'S: 11E10,11E31

1 PUSH AND HOLD THE TEST SWITCH ON THE L (R) ILS RECEIVER.
DOES THE RED ILS LIGHT COME ON AT THE END OF THE TEST?

YES → 20 REPLACE THE L (R) ILS RECEIVER, M156 (M158) (MM 34-31-01/401).

NO ↓

2 DOES THE RED DATA IN LIGHT COME ON AT THE END OF THE TEST?

YES → 21 REPLACE THE ILS CONTROL PANEL, M87 (MM 34-31-02/401).
IF THE PROBLEM CONTINUES, REMOVE THE ILS CONTROL PANEL. REMOVE THE L (R) ILS RECEIVER, M156 (M158)(34-31-01/401). EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE ILS CONTROL PANEL, CONNECTOR D155 (D601), PINS 13 AND 14 TO THE L (R) ILS RECEIVER, CONNECTOR D429B (D377B), PINS B13 AND C13 (WDM 34-31-11,-21).
INSTALL THE ILS CONTROL PANEL AND THE ILS RECEIVER.

NO ↓

3 REMOVE THE L (R) EFIS SYMBOL GENERATOR, M148 (M150) (MM 34-22-01/401).
MAKE SURE THE 429 INPUT BUS FROM THE L (R) ILS RECEIVER IS ACTIVE AT THE L (R) EFIS SYMBOL GENERATOR, CONNECTOR D425A (D373A), PINS C4 AND D4 (WDM 34-22-19,-29).
IS THE BUS ACTIVE?

YES → 22 REPLACE THE L (R) EFIS SYMBOL GENERATOR, M148 (M150) (MM 34-22-01/401).

NO → 23 REMOVE THE L (R) ILS RECEIVER, M156 (M158) (MM 34-31-01/401). EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) ILS RECEIVER, CONNECTOR D429B (D377B), PINS B11 AND C11 TO THE L (R) EFIS SYMBOL GENERATOR, CONNECTOR D425A (D373A), PINS C4 AND D4 (WDM 34-22-19,-29).
INSTALL THE ILS RECEIVER. INSTALL THE L (R) EFIS SYMBOL GENERATOR.

Abnormal ILS Test Response on Capt (F/O) EADI & EHSI
Figure 104

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G/S AND LOC FLAGS IN VIEW ON CAPT (F/O) EHSI & EADI

PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
IRS INITIALIZED (MM 34-21-00/501)
EFIS (MM 34-22-00/501)

CB'S: 11E10,11E31

1 PUSH AND HOLD THE "TEST" SWITCH ON THE L (R) ILS RECEIVER.
DOES THE GREEN "ILS" LIGHT COME AT THE END OF THE TEST?

NO → 21 REPLACE THE L (R) ILS RECEIVER, M156 (M158) (MM 34-31-01/401).

YES ↓

2 REMOVE THE L (R) EFIS SYMBOL GENERATOR, M148 (M150) (MM 34-22-01/401).
MAKE SURE THE 429 INPUT BUS FROM THE L (R) ILS RECEIVER IS ACTIVE AT THE L (R) SYMBOL GENERATOR, CONNECTOR D425A (D373A), PINS C4 AND D4 (WDM 34-22-19,-29).
IS THE BUS ACTIVE?

YES → 22 REPLACE THE L (R) EFIS SYMBOL GENERATOR, M148 (M150) (MM 34-22-01/401).

NO → 23 REMOVE THE L (R) ILS RECEIVER, M156 (M158) (MM 34-31-01/401). EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) ILS RECEIVER, CONNECTOR D429B (D377B), PINS B11 AND C11 TO THE L (R) EFIS SYMBOL GENERATOR, CONNECTOR D425A (D373A), PINS C4 AND D4 (WDM 34-22-19,-29).
INSTALL THE ILS RECEIVER. INSTALL THE L (R) EFIS SYMBOL GENERATOR.

G/S and LOC Flags in View on Capt (F/O) EHSI & EADI
Figure 105

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EHSI AND EADI - BOTH G/S AND LOC DEV POINTERS MISSING (NCD)

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (MM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11E10,11E31

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
ELECTRICAL POWER IS ON (MM 24-22-00/201)
IRS IS ALIGNED (34-21-00/501)

1 REPLACE THE ILS CONTROL PANEL, M87 (MM 34-31-02/401).
IF THE PROBLEM CONTINUES, REMOVE THE ILS CONTROL PANEL. REMOVE THE L (R) ILS RECEIVER, M156 (M158) (MM 34-31-01/401). EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE ILS CONTROL PANEL, CONNECTOR D155 (D601), PINS 14 AND 13 TO THE L (R) ILS RECEIVER, CONNECTOR D429B (D377B), PINS B13 AND C13 (WDM 34-31-11,-21).
INSTALL THE ILS CONTROL PANEL AND THE ILS RECEIVER.

EHSI and EADI - Both G/S and LOC Dev Pointers Missing (NCD)
Figure 106

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PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
STANDBY ATTITUDE REFERENCE SYSTEM (MM 34-24-00/501)

MAKE SURE THIS CIRCUIT BREAKER IS CLOSED:
11A2

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

FAULTY STANDBY ATTITUDE INDICATOR OPERATION

1 PUSH AND HOLD THE TEST SWITCH ON THE CENTER ILS RECEIVER.
DOES THE GREEN "ILS" LIGHT COME ON AT THE END OF THE TEST?

NO → 11 REPLACE THE C ILS RECEIVER, M157 (MM 34-31-01/401).

YES ↓

2 REMOVE THE STATIC INVERTER/PRCS, M917 (MM 34-24-02/401).
MAKE SURE THE DATA BUS CIRCUIT FROM THE CENTER ILS RECEIVER IS ACTIVE AT THE STATIC INVERTER/ILS PRCS CONNECTOR, D137A, PINS A1 AND B1 (WDM 34-24-11).
IS THE BUS ACTIVE?

YES → 12 REPLACE THE STATIC INVERTER/ILS PRCS, M917 (MM 34-24-02/401).
IF THE PROBLEM CONTINUES, REPLACE THE STANDBY ATTITUDE INDICATOR, M20 (MM 34-24-01/201).

NO → 13 REMOVE THE C ILS RECEIVER, M157 (MM 34-31-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE C ILS RECEIVER CONNECTOR, D417B, PINS C11 AND B11, TO THE STATIC INVERTER/ILS PRCS CONNECTOR, D137A, PINS A1 AND B1 (WDM 34-24-11).
INSTALL THE ILS RECEIVER.
INSTALL THE STATIC INVERTER/ILS PRCS.

Faulty Standby Attitude Indicator Operation
Figure 107

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STBY ATT - BOTH DEV POINTERS MISSING (NCD)

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
STANDBY ATTITUDE REFERENCE SYSTEM (MM 34-24-00/501)

MAKE SURE THIS CIRCUIT BREAKER IS CLOSED:
11A2

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

1 REPLACE THE ILS CONTROL PANEL, M87 (MM 34-31-02/401).
IF THE PROBLEM CONTINUES, REMOVE THE ILS CONTROL PANEL. REMOVE THE ILS RECEIVER, M157 (MM 34-31-01/401). REPAIR THE DATA BUS CIRCUIT AS NECESSARY FROM THE ILS CONTROL PANEL CONNECTOR, D603, PINS 13 AND 14, TO THE C ILS RECEIVER CONNECTOR, D417B, PINS B13 AND C13 (WDM 34-31-31).
INSTALL THE ILS CONTROL PANEL. INSTALL THE ILS RECEIVER.

Stby Att - Both Dev Pointers Missing (NCD)
Figure 108

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LOC (G/S) DEV POINTER MISSING ON STBY ATT IND

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
STANDBY ATTITUDE REFERENCE SYSTEM (AMM 34-24-00/501)

MAKE SURE THIS CIRCUIT BREAKER IS CLOSED:
11A2

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

1 REMOVE THE C ILS RECEIVER, M157 (AMM 34-31-01/201).
DO THE ANTENNA CABLE CHECK PROCEDURE (AMM 20-10-32/201) AT THE C ILS RECEIVER CONNECTOR, D417C, PINS 1 AND C1 (PINS 5 AND C5)(WDM 34-31-31).
IS THE ANTENNA CIRCUIT OK?

YES → 2 INSTALL THE C ILS RECEIVER, M157 (AMM 34-31-01/401).
REPLACE THE R/C DUAL LOC (G/S) ANTENNA, M249 (M251) (AMM 34-31-03/401; 34-31-04/401).

NO → 3 REPLACE THE LOC (G/S) ANTENNA CIRCUIT FROM THE C ILS RECEIVER CONNECTOR, D417C, PINS 1 AND C1 (PINS 5 AND C5), TO THE R/C DUAL LOC (G/S) ANTENNA CONNECTOR, D15 (D19), PINS A1 AND C1 (WDM 34-31-31).
INSTALL THE C ILS RECEIVER, M157 (AMM 34-31-05/401).

Loc (G/S) Dev Pointer Missing on Stby Att Ind
Figure 109

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
IRS (AMM 34-21-00/501)
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11E10,11E31

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

LOC DEV POINTER NOT DISPLAYED

1 ALIGN THE IRS IN THE NAV MODE (AMM 34-21-00/501).
PUSH AND HOLD THE TEST SWITCH ON THE L (R) ILS RECEIVER.
DOES THE RED ILS LIGHT COME ON AT THE END OF THE TEST?

YES → **20** REPLACE THE L (R) ILS RECEIVER, M156 (M158) (AMM 34-31-01/401).

NO → **10** REMOVE THE L (R) ILS RECEIVER, M156 (M158) (AMM 34-31-01/401).
DO THE ANTENNA CABLE CHECK PROCEDURE (AMM 20-10-32/201) AT L (R) ILS RECEIVER, CONNECTOR D429C (D377C), PINS 1 AND C1.
IS THE LOC ANTENNA CABLE OK?

YES → **21** REPLACE THE L (R/C) DUAL LOC ANTENNA, M248 (M249) (AMM 34-31-04/401).

NO → **22** REPLACE THE ANTENNA CIRCUIT FROM THE L (R) ILS RECEIVER, CONNECTOR D429C (D377C), PINS 1 AND C1 TO THE L (R/C) DUAL LOC ANTENNA, CONNECTOR D11 (D13), PINS A1 AND C1 (WDM 34-31-11,-21).
IF THE PROBLEM CONTINUES, REPLACE THE L (R) ILS RECEIVER, M156 (M158) (AMM 34-31-01/401).

Loc Dev Pointer Not Displayed
Figure 110

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
IRS (AMM 34-21-00/501)
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11E10,11E31

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

NOTE: THE GLIDESLOPE DEVIATION POINTER IS REMOVED FROM VIEW ON THE EADI AND EHSI (ILS MODE) WHEN THE DIFFERENCE BETWEEN THE AIRPLANE TRACK ANGLE AND THE SET RUNWAY HEADING IS MORE THAN 90° OR WHEN THE BACKCOURSE IS SET.

G/S DEV POINTER NOT DISPLAYED

1 ALIGN THE IRS IN THE NAV MODE (AMM 34-21-00/501).
SET THE FRONT CRS ON THE ILS CONTROL PANEL TO THE AIRPLANE HEADING SHOWN ON THE EHSI.
SET THE SWITCH ON THE STANDBY ATTITUDE/ILS INDICATOR, TO ILS.
PUSH AND HOLD THE TEST SWITCH ON THE L (R) ILS RECEIVER.
DOES THE RED ILS LIGHT COME ON AT THE END OF THE TEST?

YES → **20** REPLACE THE L (R) ILS RECEIVER, M156 (M158) (AMM 34-31-01/401).

NO → **10** REMOVE THE L (R) ILS RECEIVER, M156 (M158) (AMM 34-31-01/401). DO THE ANTENNA CABLE CHECK PROCEDURE (AMM 20-10-32/201) AT THE L (R) ILS RECEIVER, CONNECTOR D429C (D377C), PINS 5 AND C5.
IS THE G/S ANTENNA CABLE OK?

YES → **21** REPLACE THE L (R/C) DUAL G/S ANTENNA, M250 (M251) (AMM 34-31-03/401).

NO → **22** REPLACE THE ANTENNA CIRCUIT FROM THE L (R) ILS RECEIVER, CONNECTOR D429C (D377C), PINS 5 AND C5 TO THE L (R/C) DUAL LOC ANTENNA, CONNECTOR D17 (D21), PINS A1 AND C1 (WDM 34-31-11,-21).
IF THE PROBLEM CONTINUES, REPLACE THE L (R) ILS RECEIVER, M156 (M158) (AMM 34-31-01/401).

G/S Dev Pointer Not Displayed
Figure 111

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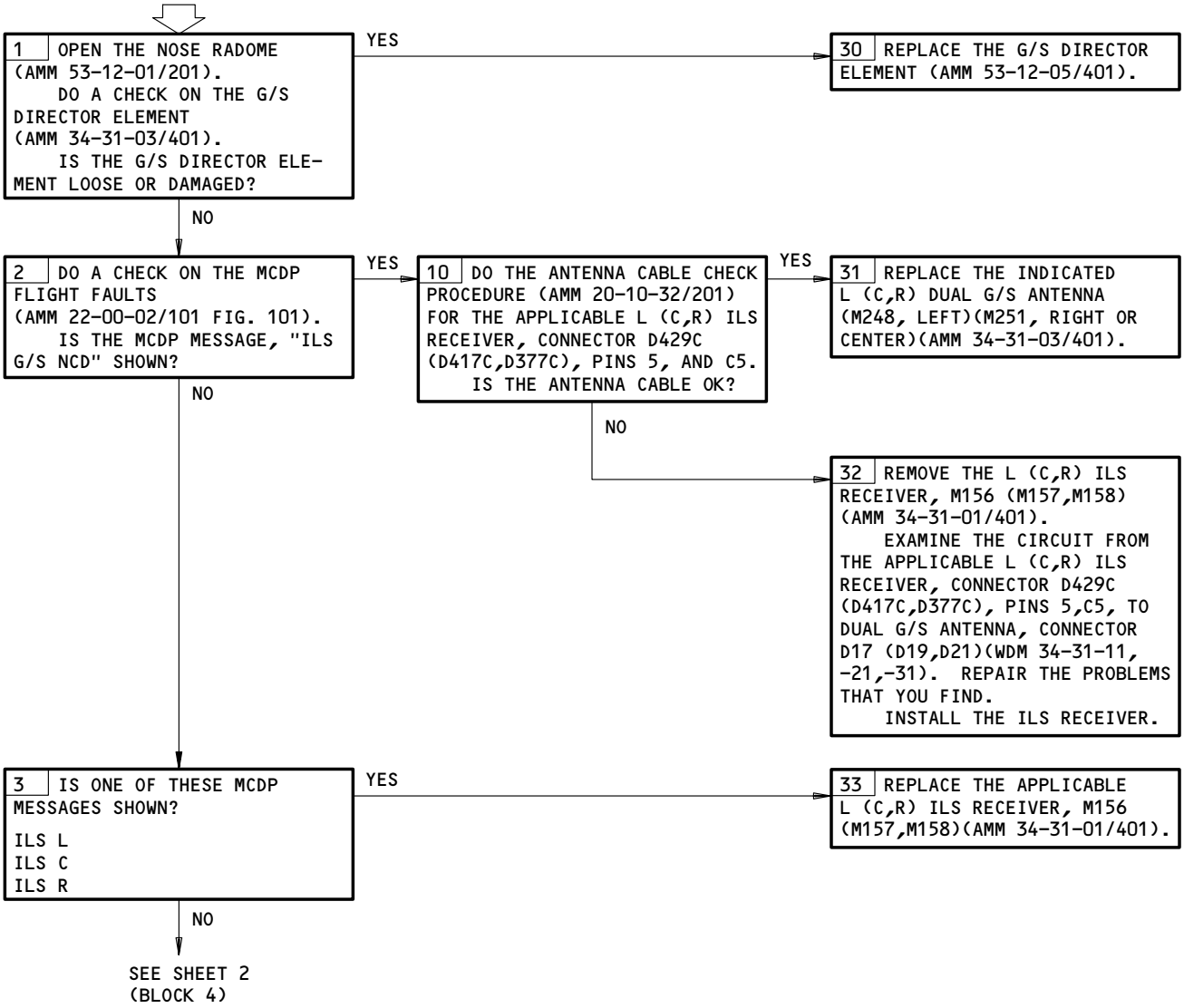
PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
EFIS (AMM 34-22-00/501)
ILS (AMM 34-31-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A2,11E10,11E31

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)
IRS INITIALIZED (AMM 34-21-00/501)

G/S - FALSE OR LATE CAPTURE



G/S - False or Late Capture
Figure 111A (Sheet 1)

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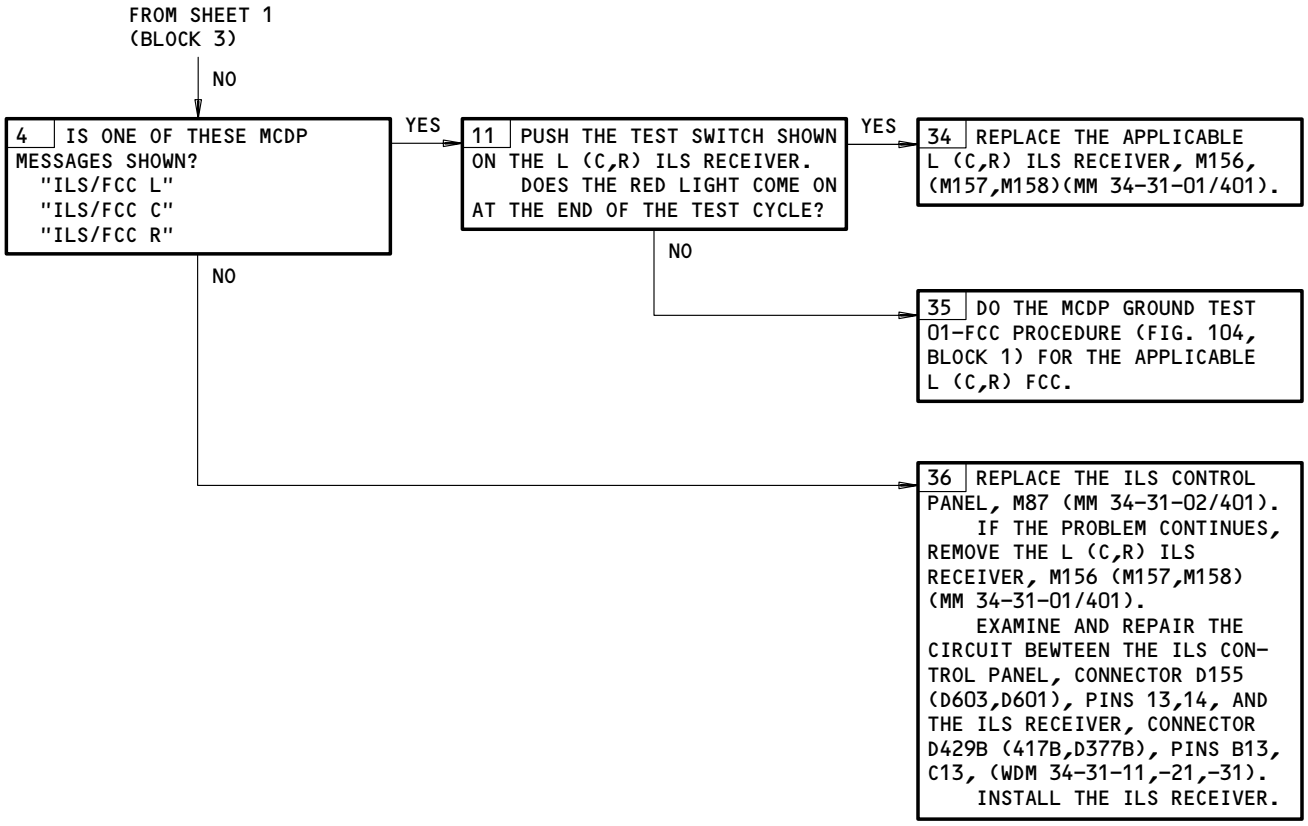

G/S - False or Late Capture
Figure 111A (Sheet 2)

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1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR DAMAGE TO THE CONNECTORS CAN OCCUR.

      (1) ARINC 429 data bus charts give the necessary data to analyze ARINC 429 transmitters, receivers, and data buses. To do the test, use terminal blocks, or at the LRU connectors use a breakout box.
   B. Equipment
      (1) Standard multi-meter
      (2) Data Bus Analyzer - 429EBP; JcAIR Instrumentation (preferred)
                 400 Industrial Parkway,
                 Industrial Airport, KS 66031
               - 429EBP; Interface Technology (optional)
                 150 E. Arrow Highway,
                 San Dimas, CA 91773
      (3) Breakout box A34011-1 (preferred)
                 A34011-112 (optional)

ILS							
DIGITAL OUTPUT BUS CHART							
BUS NAME / SOURCE	TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
ILS (L C R)	A	1	B	B07 C07	429	LO	ILS OUTPUT #1
ILS (L C R)	A	2	B	B11 C11	429	LO	ILS OUTPUT #2

ILS ID = 010								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
SEL RUNWAY HDG-D	A	017	BCD	5	00	0-359	ALWAYS POS	DEC
ILS FREQUENCY	A	033	BCD	5	00	108-111.95	ALWAYS POS	MHZ
LOCALIZER DEV	A	173	BNR	16	00	+-.4	FLY RIGHT	DDM
GLIDESLOPE DEV	A	174	BNR	16	00	+-.8	FLY DOWN	DDM

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ILS				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
TUNE INHIBIT	173	11	INHIBIT	NORMAL
TUNE INHIBIT	174	11	INHIBIT	NORMAL

ILS CP							
DIGITAL OUTPUT BUS CHART							
BUS NAME / SOURCE	TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
ILSCP (C)	A	1		14 13	429	LO	ILS FREQ-L
ILSCP (C)	A	2		14 13	429	LO	ILS FREQ-R
ILSCP (C)	A	3		14 13	429	LO	ILS FREQ-C

ILS CP ID=OBO								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
SEL RUNWAY HDG-D	A	017	BCD	5	00	0-359	CW FROM N	DEC
ILS FREQUENCY	A	033	BCD	5	00	108-111.95	ALWAYS POS	MHZ
DME FREQUENCY	A	035	BCD	5	00	108-135.95	ALWAYS POS	MHZ

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MARKER BEACON SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ANTENNA - MARKER BEACON, M243	--	1	BOTTOM FWD FUSELAGE	34-32-01
CIRCUIT BREAKER	--		FLT COMPT, P11	*
VOR/MKR L, C595		1	11A1	*
LIGHT - CAPT INNER MARKER BEACON LIGHT, L585	--	1	FLT COMPT, P1	*
LIGHT - CAPT MIDDLE MARKER BEACON LIGHT, L586	--	1	FLT COMPT, P1	*
LIGHT - CAPT OUTER MARKER BEACON LIGHT, L587	--	1	FLT COMPT, P1	*
LIGHT - F/O INNER MARKER BEACON LIGHT, L588	--	1	FLT COMPT, P3	*
LIGHT - F/O MIDDLE MARKER BEACON LIGHT, L589	--	1	FLT COMPT, P3	*
LIGHT - F/O OUTER MARKER BEACON LIGHT, L590	--	1	FLT COMPT, P3	*
PANEL - (REF 23-51-00, FIG. 101)				
CAPTAIN AUDIO SELECTOR, M70				
F/O AUDIO SELECTOR, M71				
FIRST OBSERVER AUDIO SELECTOR, M98				
RECEIVER - LEFT VOR/MKR, M186	--	1	119AL, MAIN EQUIP CTR, E2-2	34-51-01

* SEE THE WDM EQUIPMENT LIST

Marker Beacon System - Component Index
Figure 101

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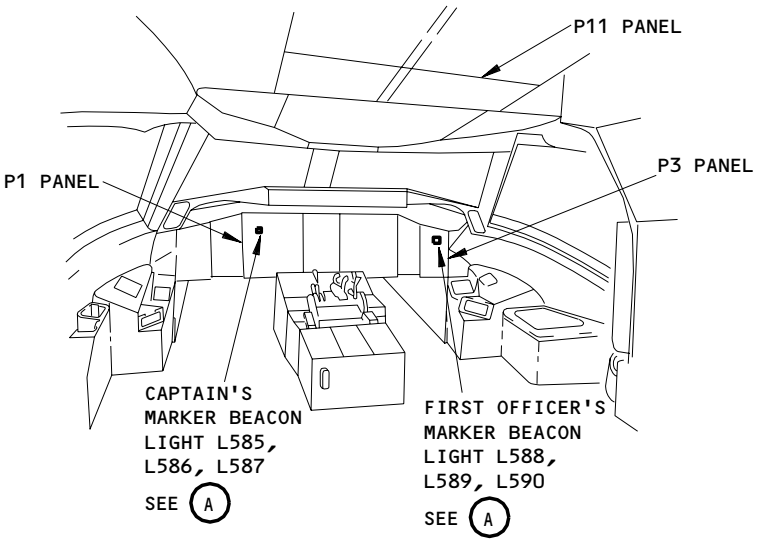
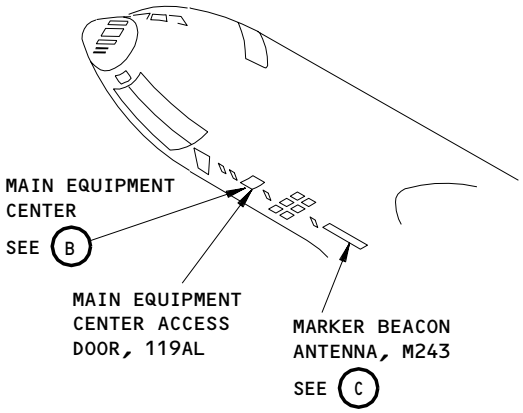
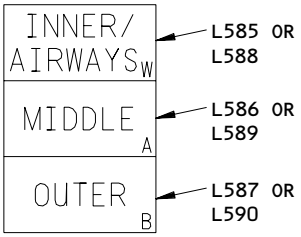


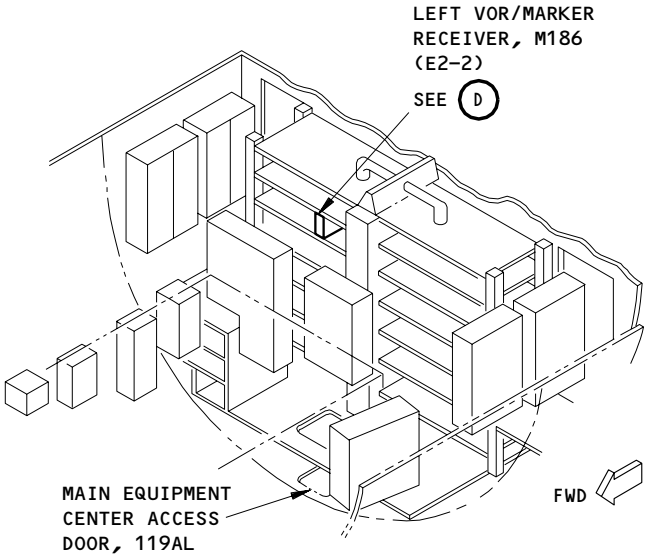
FLIGHT COMPARTMENT





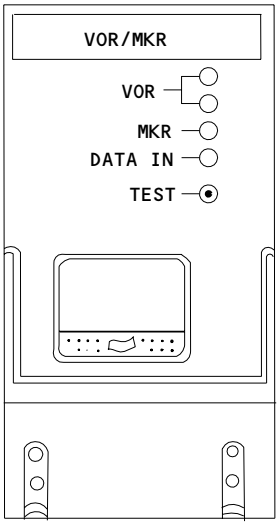
MARKER BEACON LIGHTS

A



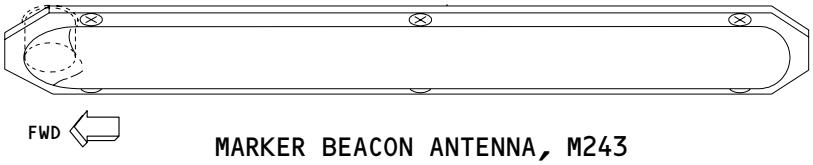
MAIN EQUIPMENT CENTER

B



LEFT VOR/MARKER RECEIVER, M186

D



MARKER BEACON ANTENNA, M243

C

Component Location
Figure 102

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MARKER BEACON PROBLEM

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A1, 11C25, 11C26, 11G29, 11G30, 11R3

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

1 PUSH AND HOLD THE TEST SWITCH ON THE FRONT PANEL OF THE LEFT VOR/MKR RECEIVER.
DOES THE RED "MKR" TEST LIGHT STAY ON AT THE END OF THE TEST?

- YES → 21 REPLACE THE LEFT VOR/MKR RECEIVER, M186 (AMM 34-51-01/401).
- NO ↓

2 DO ALL THE MARKER BEACON LIGHTS, ON THE CAPT'S AND F/O'S INSTRUMENT PANELS, COME ON WHILE THE TEST SWITCH IS HELD?

- NO → 11 DOES THE FAILURE OCCUR ON THE CAPT'S AND F/O'S MARKER BEACON LIGHTS?
  - YES → 22 REPLACE THE LEFT VOR/MKR RECEIVER, M186 (AMM 34-51-01/401).
  - NO → 23 REPLACE THE APPLICABLE CAPT (F/O) MARKER BEACON LIGHT ASSY, L585,L586,L587 (L588, L589,L590)(AMM 33-16-02/201).
- YES → 12 REMOVE THE LEFT VOR/MKR RECEIVER, M186 (AMM 34-51-01/401).
DO THE ANTENNA CABLE CHECK PROCEDURE (AMM 20-10-32/201) AT THE LEFT VOR/MKR RECEIVER, CONNECTOR D329C, PINS 5 AND C5 (WDM 34-32-11).
IS THE MARKER BEACON ANTENNA CABLE OK?
  - YES → 24 INSTALL THE LEFT VOR/MKR RECEIVER, M186 (AMM 34-51-01/401).
REPLACE THE MARKER BEACON ANTENNA, M243 (AMM 34-32-01/401).
  - NO → 25 REPLACE THE MARKER BEACON ANTENNA CABLE CIRCUIT FROM THE LEFT VOR/MKR RECEIVER, CONNECTOR D329C, PINS 5 AND C5, TO THE MARKER BEACON ANTENNA, CONNECTOR D83, PINS A1 AND C1 (WDM 34-32-11).
INSTALL THE LEFT VOR/MKR RECEIVER, M186 (AMM 34-51-01/401).

Marker Beacon Problem
Figure 103

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RADIO ALTIMETER SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ANTENNA - RADIO ALTIMETER RECEIVER, M253, M255,M257	--	3	BOTTOM FORWARD FUSELAGE	34-33-02
ANTENNA - RADIO ALTIMETER TRANSMITTER, M252,M254,M256	--	3	BOTTOM FORWARD FUSELAGE	34-33-02
CIRCUIT BREAKERS -	--		FLIGHT COMPARTMENT, P11	
RAD ALTM CENTER, C602		1	11F20	*
RAD ALTM LEFT, C600		1	11F5	*
RAD ALTM RIGHT, C601		1	11F26	*
COMPUTER - (REF 34-41-00, FIG. 101)				
LEFT EICAS, M10181				
RIGHT EICAS, M10182				
INDICATOR - (REF 34-22-00, FIG. 101)				
LEFT ELECTRONIC ATTITUDE DIRECTOR, N4				
RIGHT ELECTRONIC ATTITUDE DIRECTOR, N44				
RELAY - (REF 31-01-36, FIG. 101)				
SYS NO. 1 AIR/GND, K124				
SYS NO. 2 AIR/GND, K214				
SYS NO. 2 AIR/GND, K293				
SYMBOL GENERATOR - (REF 34-22-00, FIG. 101)				
CENTER EFIS, M149				
LEFT EFIS, M148				
RIGHT EFIS, M150				
TRANSMITTER/RECEIVER - CENTER RAD ALTM, M204	--	1	821, FWD CARGO COMPT, E5-1	34-33-02
TRANSMITTER/RECEIVER - LEFT RAD ALTM, M202	--	1	821, FWD CARGO COMPT, E5-1	34-33-02
TRANSMITTER/RECEIVER - RIGHT RAD ALTM, M203	--	1	821, FWD CARGO COMPT, E5-1	34-33-02

* SEE THE WDM EQUIPMENT LIST

Radio Altimeter System - Component Index
Figure 101

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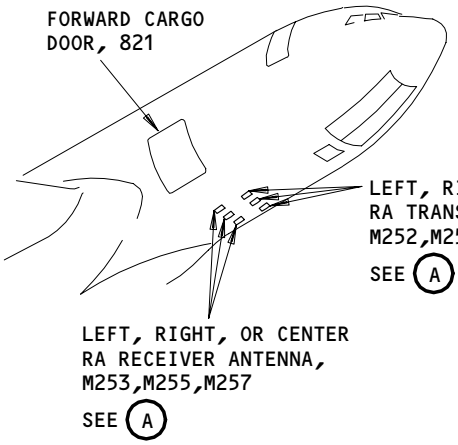
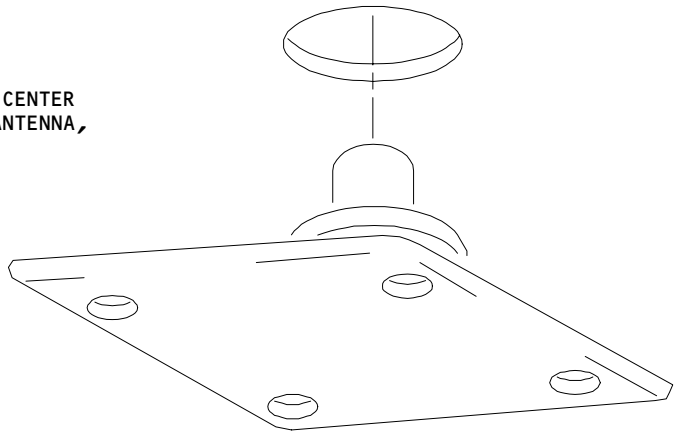
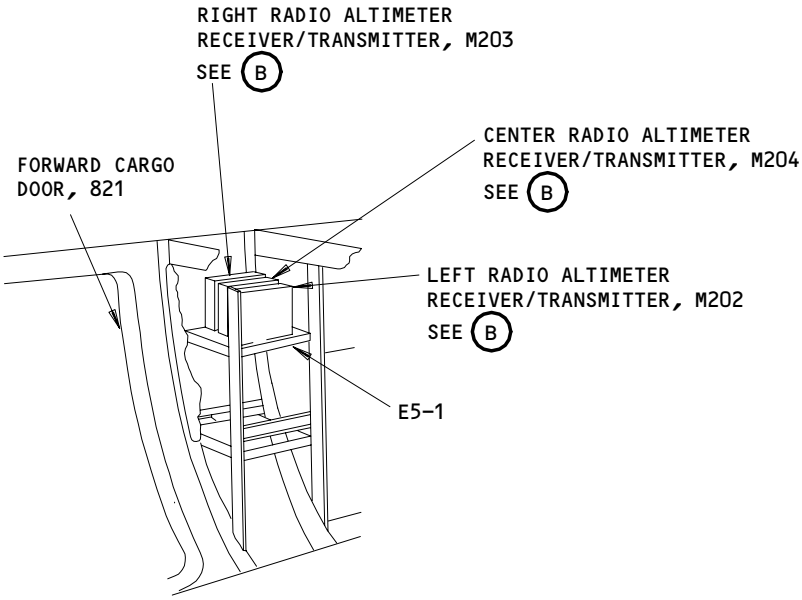


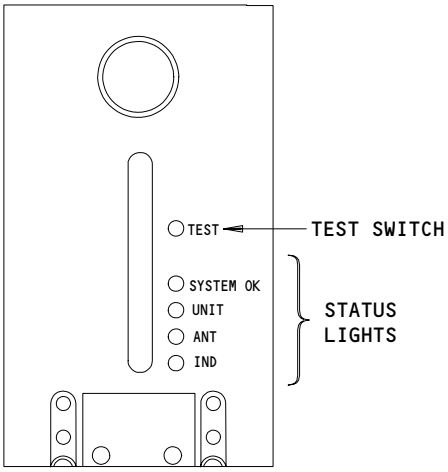


LEFT, RIGHT OR CENTER RADIO ALTIMETER ANTENNA,
M252,M253,M254,M255,M256,M257
(EXAMPLE)

A



MID EQUIPMENT CENTER, E5



LEFT, RIGHT OR CENTER RADIO
ALTIMETER RECEIVER/TRANSMITTER,
M202,M203 OR M204

B

Radio Altimeter System - Component Location
Figure 102

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PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11F5,11F20,11F26

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

RADIO ALTITUDE HEIGHT ON THE CAPT (F/O) EADI IS INACCURATE

1 PUSH AND HOLD THE "TEST" SWITCH ON THE LEFT (RIGHT) RA R/T.
DOES THE GREEN LIGHT COME ON AND STAY ON?

- NO → 21 REPLACE THE LEFT (CENTER, RIGHT) RA R/T, M202 (M204, M203)(AMM 34-33-01/401).
- YES ↓

2 DOES THE RA DISPLAY SHOW 40 ±2 FEET ON THE LEFT (RIGHT) EADI?

- YES → 11 REMOVE THE LEFT (CENTER, RIGHT) RA R/T, M202 (M204, M203)(AMM 34-33-01/401).
  DO AN ANTENNA CABLE CHECK (AMM 20-10-32/201) BETWEEN THE LEFT (CENTER,RIGHT) RECEIVE AND TRANSMIT ANTENNA AND THE LEFT (CENTER,RIGHT) RA R/T, CONNECTOR D401B AND D401A (D405A AND D405B, D403A AND D403B), PIN 71 (WDM 34-33-11,-21,-31).
  ARE THE ANTENNA CABLES OK?
  - NO → 22 REPAIR OR REPLACE THE DEFECTIVE CABLE (WDM 34-33-11,-21,-31).
    INSTALL THE LEFT (CENTER, RIGHT) RA R/T, M202 (M204, M203)(AMM 34-33-01/401).
  - YES ↓
  12 INSTALL THE LEFT (CENTER, RIGHT) RA R/T, M202 (M204, M203)(AMM 34-33-01/401).
  DO AN ANTENNA BONDING CHECK (AMM 34-33-02/401) BETWEEN THE ANTENNA AND AIRPLANE SKIN.
  IS THE RESISTANCE 0.025 OHM MAXIMUM?
  - NO → 23 REMOVE AND INSTALL THE LEFT (CENTER,RIGHT) RA TRANSMIT AND RECEIVE ANTENNAS, M252,M253 (M256,M257 AND M254, M255)(AMM 34-33-02/401).
  - YES → 24 REPLACE THE LEFT (CENTER, RIGHT) RA TRANSIT AND RECEIVE ANTENNAS, M252,M253 (M256, M257 AND M254,M255) (AMM 34-33-02/401).
- NO → 25 REPLACE THE LEFT (CENTER, RIGHT) EFIS SYMBOL GENERATOR, M148 (M149,M150) (AMM 34-22-01/401).
  IF THE PROBLEM CONTINUES, REPLACE THE LEFT (CENTER, RIGHT) RA R/T, M202 (M204, M203)(AMM 34-33-01/401).

Radio Altitude Height on the Capt (F/O) EADI Is Inaccurate
Figure 103

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PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7,11E3,11E4,11E24,11E25,11F5,11F8,11F9,11F20,
11F24,11F26,11F29

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

RA FLAG DISPLAYED ON CAPT (F/O) EADI

1 PUSH AND HOLD THE "TEST" SWITCH ON THE LEFT (RIGHT) RA R/T.
DOES A RED LED COME ON AND STAY ON?

YES → 10 DID THE LEFT (RIGHT) RA R/T ANT LED COME ON?

NO → 20 REPLACE THE LEFT (RIGHT) RA R/T, M202 (M203) (AMM 34-33-01/401).

YES → 11 REMOVE THE LEFT (RIGHT) RA R/T, M202 (M203) (AMM 34-33-01/401).
DO AN ANTENNA CABLE CHECK (AMM 20-10-32/201) BETWEEN THE LEFT (RIGHT) RECEIVE AND TRANSMIT ANTENNA AND THE LEFT (RIGHT) RA R/T, CONNECTOR D401B AND D401A (D403A AND D403B), PIN 71 (WDM 34-33-11, -21).
ARE THE ANTENNA CABLES OK?

YES → 21 INSTALL THE LEFT (RIGHT) RA R/T, M202 (M203) (AMM 34-33-01/401).
REPLACE THE LEFT (RIGHT) RA TRANSMIT AND RECEIVE ANTENNAS, M252,M253 (M254, M255)(AMM 34-33-02/401).

NO → 22 REPAIR OR REPLACE THE DEFECTIVE CABLE (WDM 34-33-11, -21).
INSTALL THE LEFT (RIGHT) RA R/T, M202 (M203) (AMM 34-33-01/401).

NO → 12 DOES THE RA DISPLAY SHOW 40 ±2 FEET ON THE LEFT (RIGHT) EADI?

YES → 23 THIS IS A SINGLE INTERMITTENT FAULT AND NO CORRECTIVE ACTION IS RECOMMENDED.

NO → 13 REMOVE THE LEFT (RIGHT) EFIS SYMBOL GENERATOR M148 (M150)(AMM 34-22-01/401).
MAKE SURE THE DATA BUS CIRCUIT FROM THE RA IS ACTIVE AT THE LEFT (RIGHT) EFIS SG, CONNECTOR D425B (D373B), PINS G4 AND H4 (WDM 34-22-19,-29).
IS THE DATA BUS ACTIVE?

YES → 24 REPLACE THE LEFT (RIGHT) EFIS SYMBOL GENERATOR M148 (M150)(AMM 34-22-01/401).

NO → 25 REMOVE THE LEFT (RIGHT) RA R/T, M202 (M203)(AMM 34-33-01/401). EXAMINE AND REPAIR THE CIRCUIT BETWEEN THE LEFT (RIGHT) RA R/T CONNECTOR D401B (D403B), PINS G2 AND G3 AND THE LEFT (RIGHT) EFIS SIGNAL GENERATOR, CONNECTOR D425B (D373B), PINS G4 AND H4 (WDM 34-33-11,-21).
INSTALL THE LEFT (RIGHT) RA R/T, M202 (M203) (AMM 34-33-01/401).
INSTALL THE LEFT (RIGHT) EFIS SYMBOL GENERATOR M148 (M150)(AMM 34-22-01/401).

RA Flag Displayed on Capt (F/O) EADI
Figure 104

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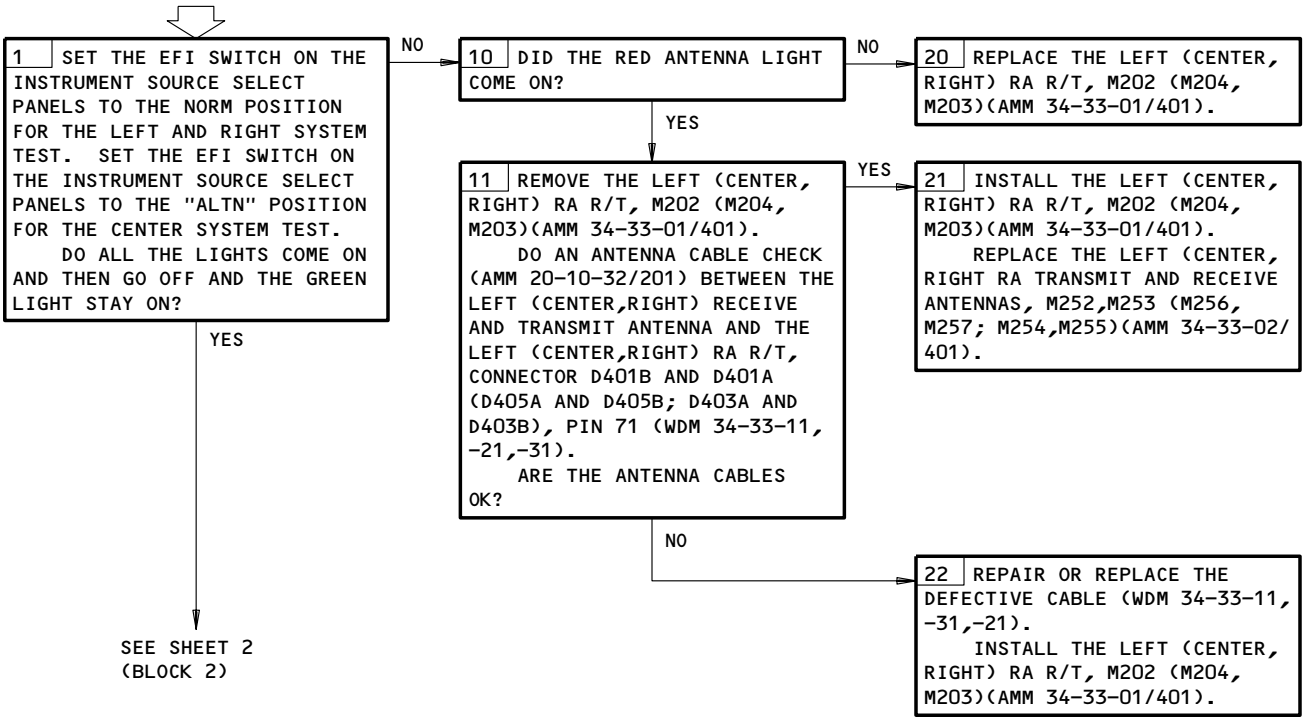
PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A7, 11E3, 11E4, 11E24, 11E25, 11F5, 11F8, 11F9, 11F20, 11F24, 11F26, 11F29

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

RA BITE PROCEDURE



RA BITE Procedure
Figure 104A (Sheet 1)

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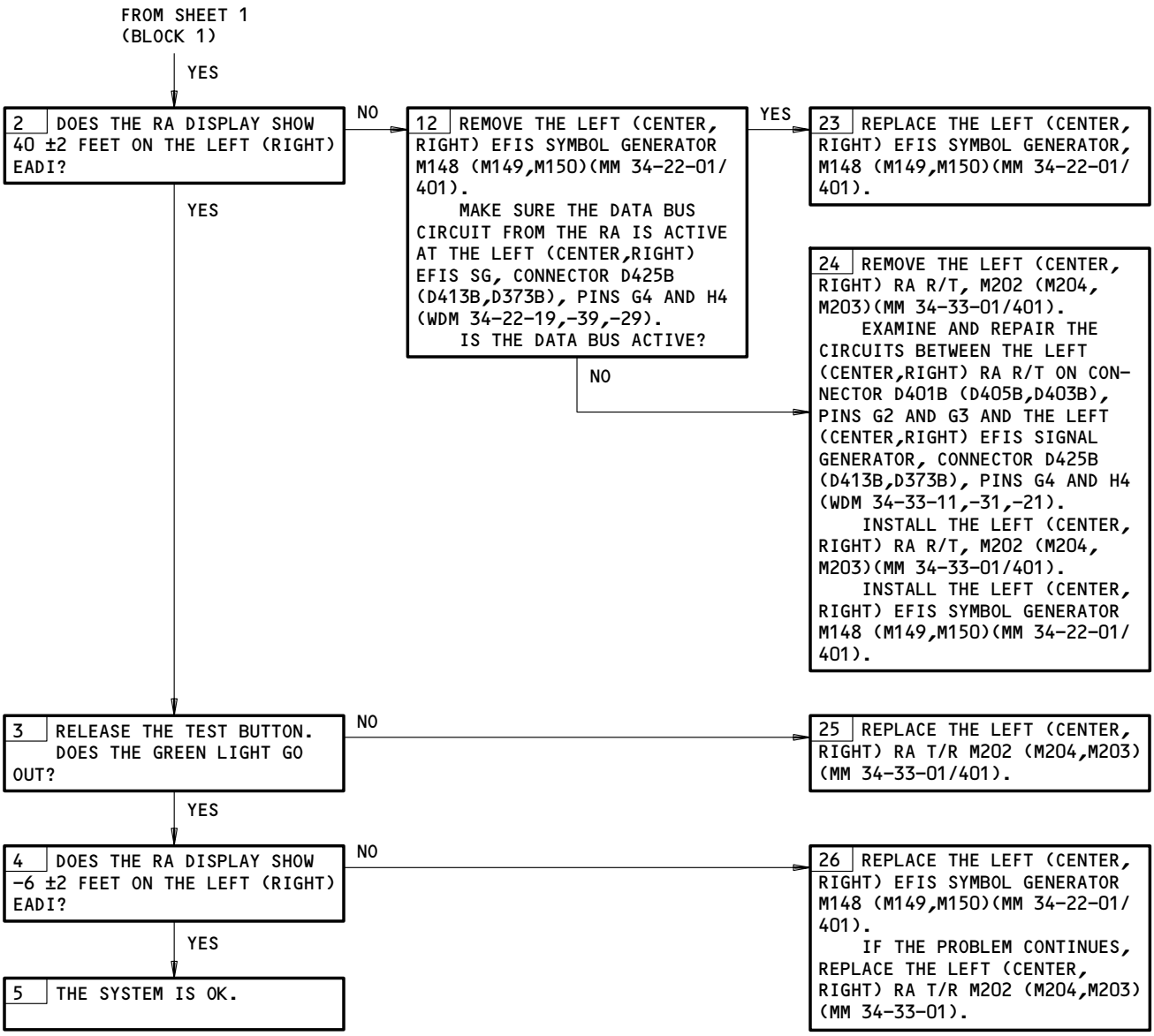

RA BITE Procedure
Figure 104A (Sheet 2)

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR YOU CAN CAUSE DAMAGE TO THE CONNECTORS.

      (1) The ARINC 429 data bus gives data necessary to make analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminals or at the LRU connector.
   B. Equipment
      (1) Standard multi-meter
      (2) 429EBP Data Bus Analyzer (recommended)
          JcAIR Instrumentation
          400 Industrial Parkway
          Industrial Airport, KS 66031

          429-2 Data Bus Analyzer (alternative)
          Interface Technology
          150 E. Arrow Highway
          San Dimas, CA 91773
      (3) A34011-1 Breakout Box (recommended)
          A34011-112 Breakout Box (alternative)

RA							
DIGITAL OUTPUT BUS CHART							
BUS NAME / SOURCE	TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
RA (L C R)	A	1	B	B02 B03	429	LO	ALTITUDE #1
RA (L C R)	A	2	B	G02 G03	429	LO	ALTITUDE #2

RA ID = 07								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
RADIO HEIGHT	A	164	BNR	20	XX	± 8192	ABOVE TOUCHDN	FEET
RADIO HEIGHT-D	A	165	BCD	5	XX	± 7999.9	ABOVE TOUCHDN	FEET

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RA				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
TEST INHIBITED	164	11	INHIBIT	NOT INHIBIT

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WEATHER RADAR SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ANTENNA - WEATHER RADAR, M269	2	1	111AL, NOSE RADOME	34-43-05
ASSEMBLY - WAVEGUIDE	2	1	113AL, FORWARD BULKHEAD	34-43-04
CIRCUIT BREAKERS	1		FLIGHT COMPARTMENT, P11	
WX RADAR L, C615		1	11F2	*
WX RADAR R, C599		1	11F23	*
PANEL - (REF 34-22-00, FIG. 101)				
LEFT EFIS CONTROL, M94				
RIGHT EFIS CONTROL, M93				
PANEL - WEATHER RADAR CONTROL, M75	1	1	FLIGHT COMPARTMENT, P8	34-43-02
SWITCH - WAVEGUIDE, S36	2	1	113AL, FORWARD BULKHEAD	34-43-04
SWITCH - (REF 34-22-00, FIG. 101)				
LEFT IRS, S4				
RIGHT IRS, S12				
TRANSCEIVER - WEATHER RADAR, M213,M214	2	2	113AL, FWD EQUIP CTR	34-43-01

* SEE THE WDM EQUIPMENT LIST

Weather Radar System - Component Index
Figure 101

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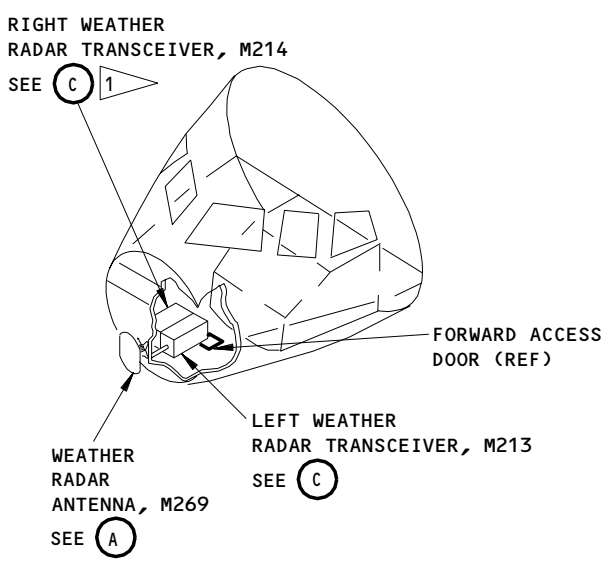
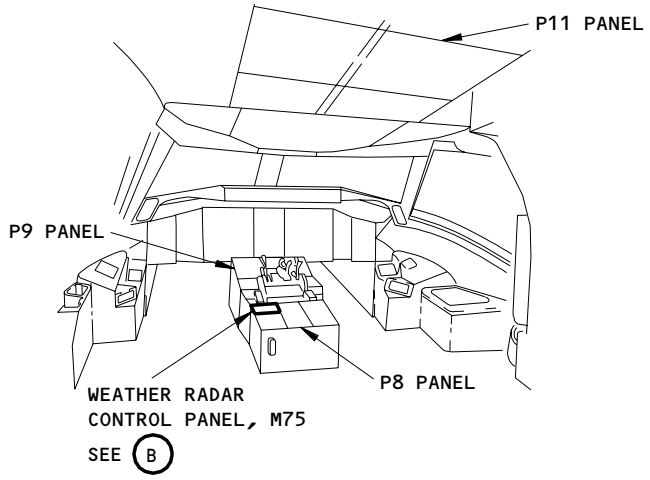
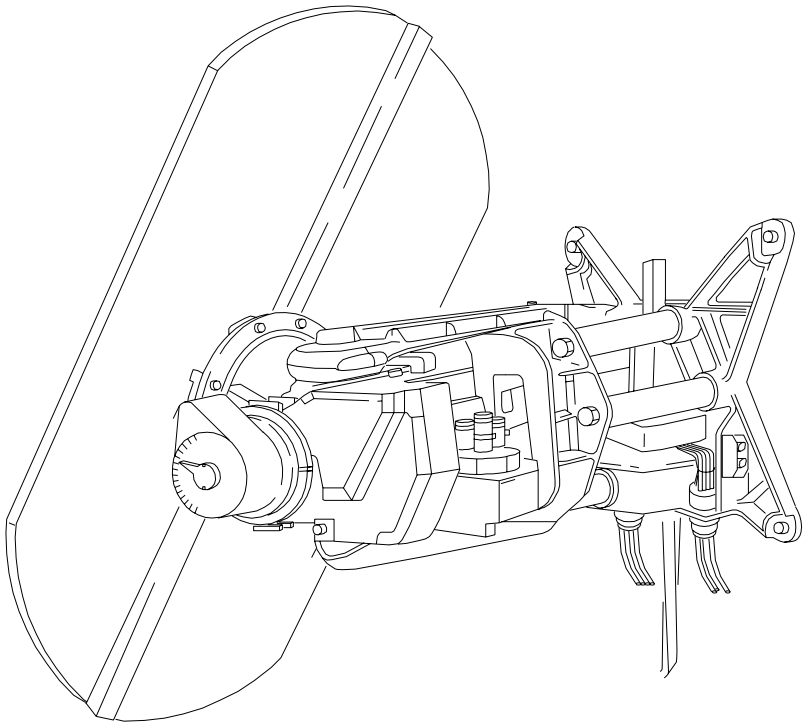




FLIGHT COMPARTMENT



WEATHER RADAR ANTENNA AND WAVEGUIDE, M269

A

1 IF INSTALLED

Weather Radar System - Component Location
Figure 102A (Sheet 1)

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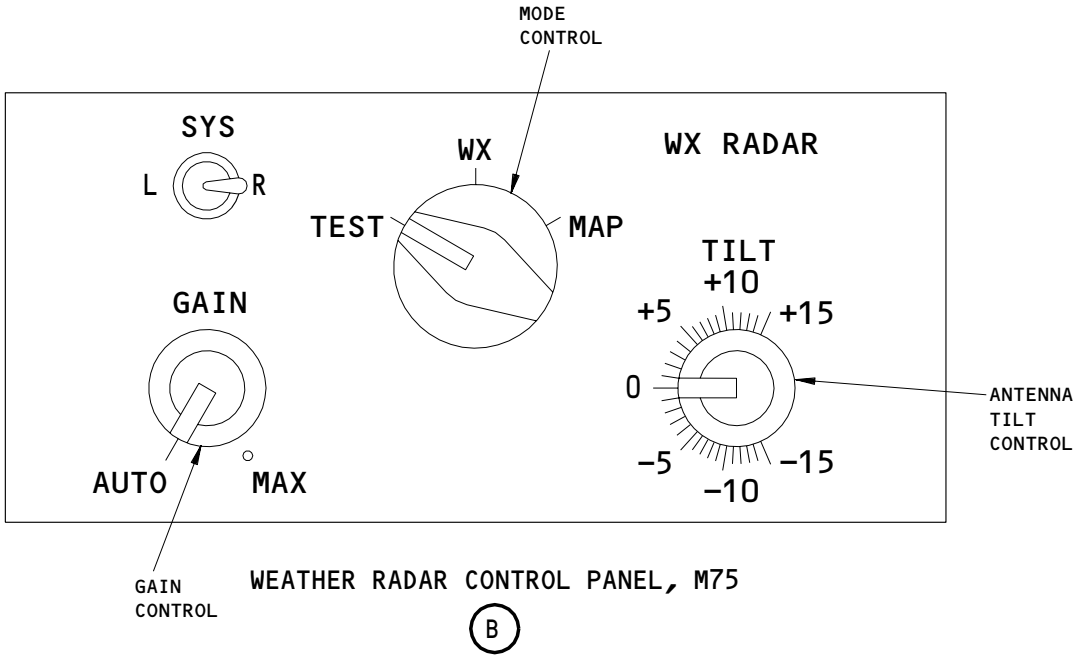

Weather Radar System - Component Location
Figure 102A (Sheet 2)

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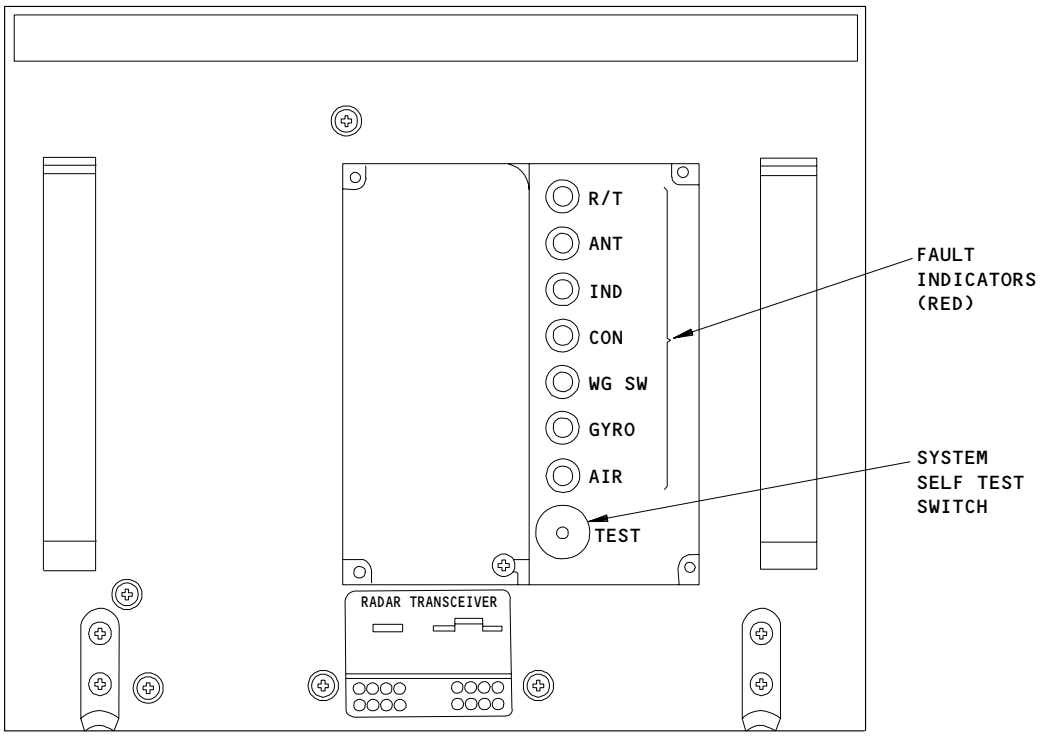

WEATHER RADAR TRANSCEIVER, M213, M214
(ALLIEDSIGNAL RDR-4A)

C

Weather Radar System - Component Location
Figure 102A (Sheet 3)

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- IRS (MM 34-21-00/501)
- EFIS (MM 34-22-00/501)
- WXR (MM 34-43-00/501)
- FMCS (MM 34-61-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11F2,11F23

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
- ELECTRICAL POWER IS ON (MM 24-22-00/201)

WARNING: WHEN YOU DO THE BITE TEST, MAKE SURE YOU SET THE WXR CONTROL TO A NON-RADIATING TEST MODE OR OBEY THE PRECAUTIONS FOR WXR OPERATION IN A RADIATION MODE. IF YOU DO NOT DO ONE OF THESE ALTERNATIVES, INJURY TO PERSONS CAN OCCUR.

WXR BITE PROCEDURE

1 ALIGN THE IRS IN THE "NAV" MODE (MM 34-21-00/501).
SET THE XCVR SWITCH ON THE CONTROL PANEL TO THE "SYS L (R)" POSITION.
SET THE MODE SWITCH ON THE WXR CONTROL PANEL TO THE "TEST" POSITION.
SET THE MODE SWITCH ON THE LEFT AND RIGHT EFIS CONTROL PANEL TO THE "MAP" POSITION.
SET THE WXR SWITCH ON THE LEFT AND RIGHT EFIS CONTROL PANEL TO THE "ON" (IN) POSITION.
DOES THE WXR TEST PATTERN AND THE MESSAGE, "WXR TEST", SHOW ON THE TWO EHSIs?

- YES → SEE SHEET 3 (BLOCK 2)
- NO → **21** DOES THE MESSAGE "WXR FAIL RT", SHOW ON THE LEFT (RIGHT) EHSI?

21 DOES THE MESSAGE "WXR FAIL RT", SHOW ON THE LEFT (RIGHT) EHSI?

- YES → **41** REMOVE THE LEFT (RIGHT) WXR XCVR, M213 (M214) (MM 34-43-01/401). LOOK AT THE AIR FILTER ON THE MOUNTING TRAY.
IF THE FILTER SHOWS BLOCKAGE, CLEAN OR REPLACE IT AS NECESSARY. INSTALL THE LEFT (RIGHT) XCVR, M213 (M214) (MM 34-43-01/401). DO THE PROCEDURE IN STEP 1 AGAIN.
IF THE FILTER IS OK, REPLACE THE LEFT (RIGHT) WXR XCVR, M213 (M214) (MM 34-43-01/401).
IF THE PROBLEM CONTINUES, EXAMINE AND REPAIR THE WXR WAVE GUIDE ASSEMBLY AS NECESSARY (MM 34-43-04/401).
- NO → **22** DOES THE MESSAGE "WXR FAIL ANT", SHOW ON THE LEFT (RIGHT) EHSI?

22 DOES THE MESSAGE "WXR FAIL ANT", SHOW ON THE LEFT (RIGHT) EHSI?

- YES → **42** MAKE SURE THE SCAN AND ELEVATION DISABLE SWITCHES ON THE WXR ANTENNA, M269, ARE IN THE ON POSITION.
IF THE SWITCHES ARE IN THE CORRECT POSITION, REPLACE THE WXR ANTENNA, M269 (MM 34-43-05/401).
- NO → SEE SHEET 2 (BLOCK 23)

WXR BITE Procedure
Figure 103 (Sheet 1)

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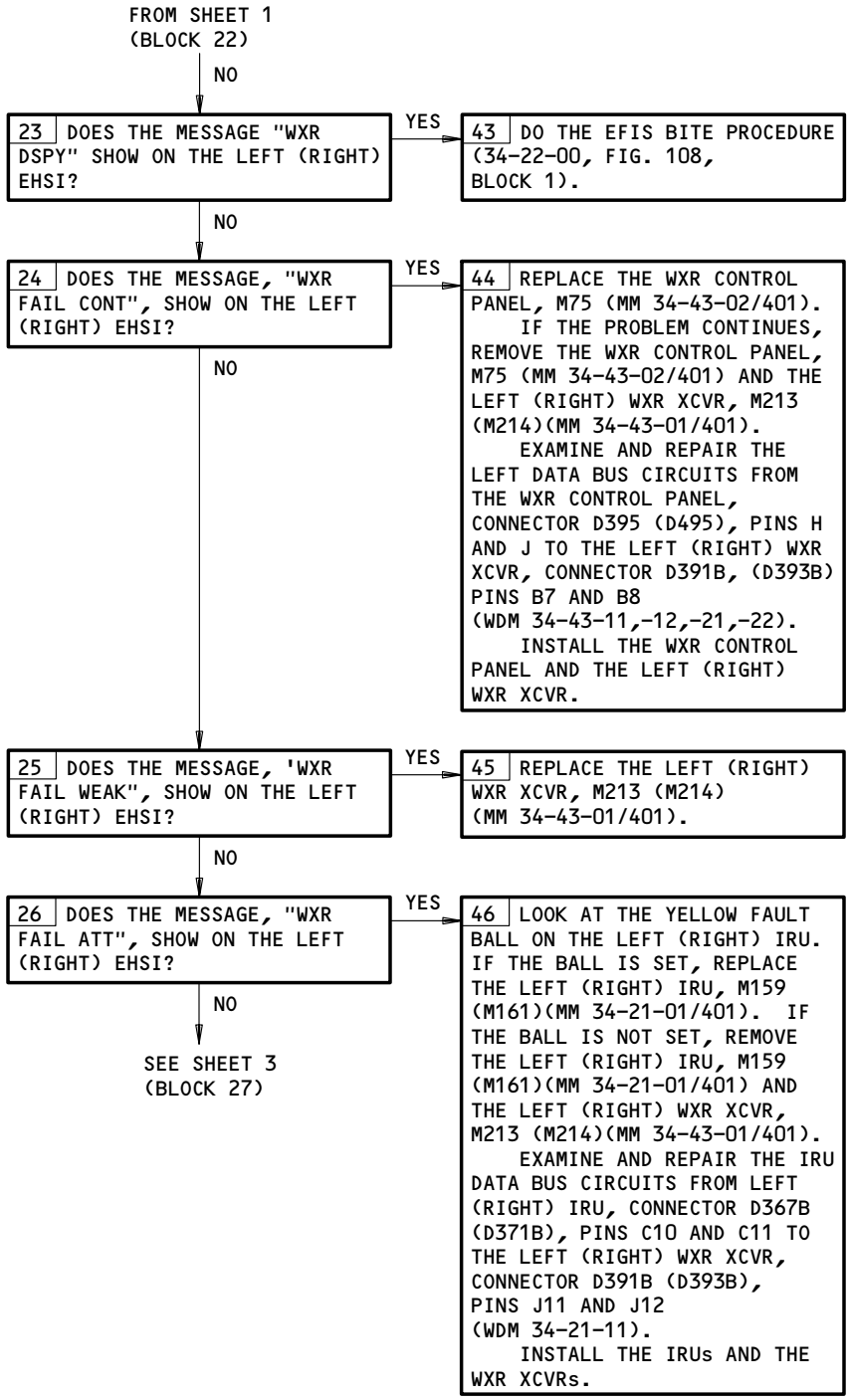

WXR BITE Procedure
Figure 103 (Sheet 2)

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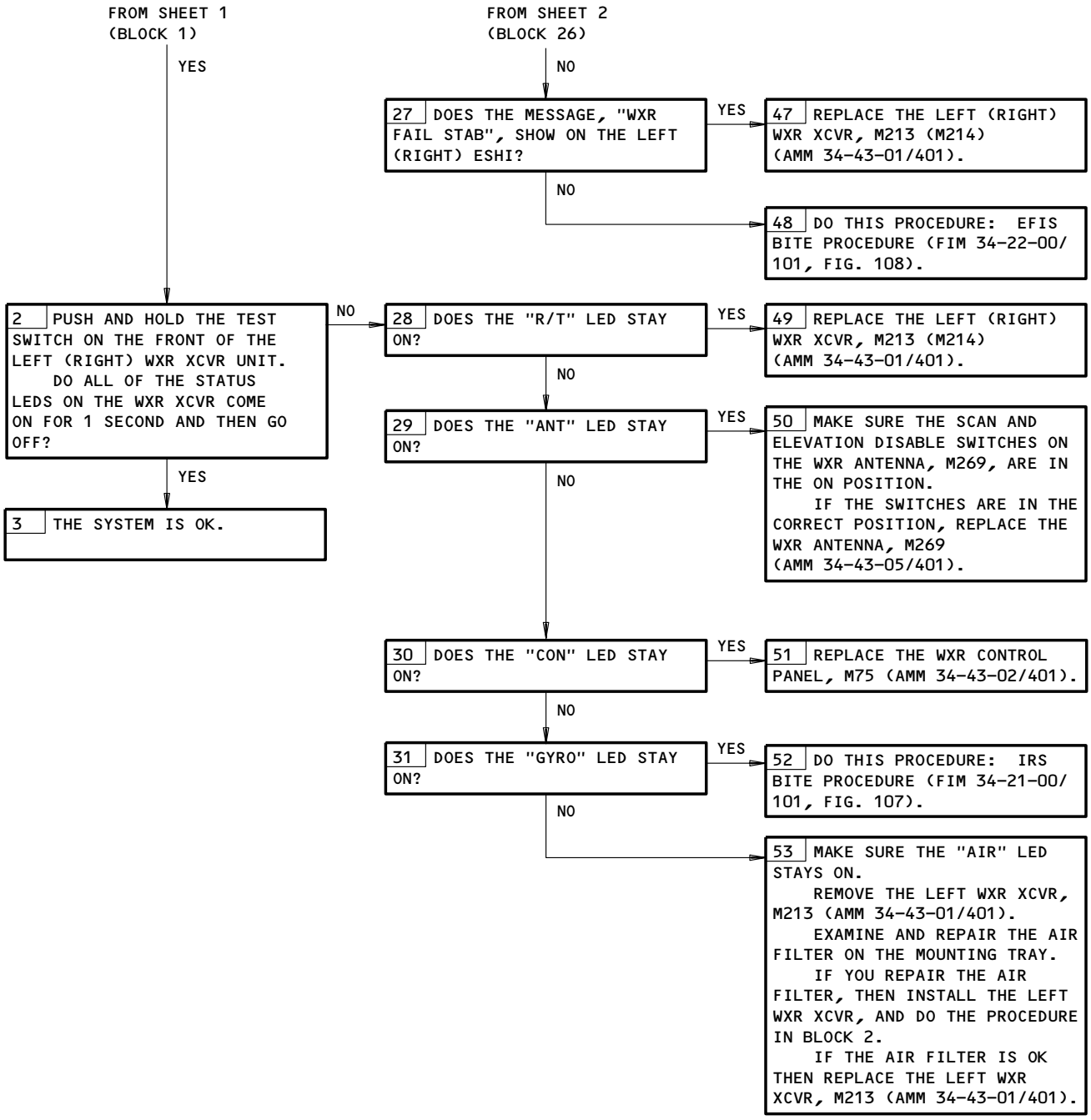

WXR BITE Procedure
Figure 103 (Sheet 3)

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
IRS (AMM 34-21-00/501)
EFIS (AMM 34-22-00/501)
WXR (AMM 34-43-00/501)
FMCS (AMM 34-61-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11F2

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

WARNING: DO NOT OPERATE WEATHER RADAR WHILE FUEL IS ADDED OR REMOVED FROM THE AIRPLANE. DO NOT TRANSMIT RF ENERGY WHILE FUEL IS ADDED OR REMOVED IN AN AREA 300 FEET OR LESS OR THE ANTENNA. THIS CAN CAUSE AN EXPLOSION.

MAKE SURE NO PERSONS ARE IN THE AREA 15 FEET OR LESS FROM THE ANTENNA WHEN IT TRANSMITS RF ENERGY. RF ENERGY CAN CAUSE INJURY TO PERSONS.

WXR Range Disagree Problems
Figure 104 (Sheet 1)

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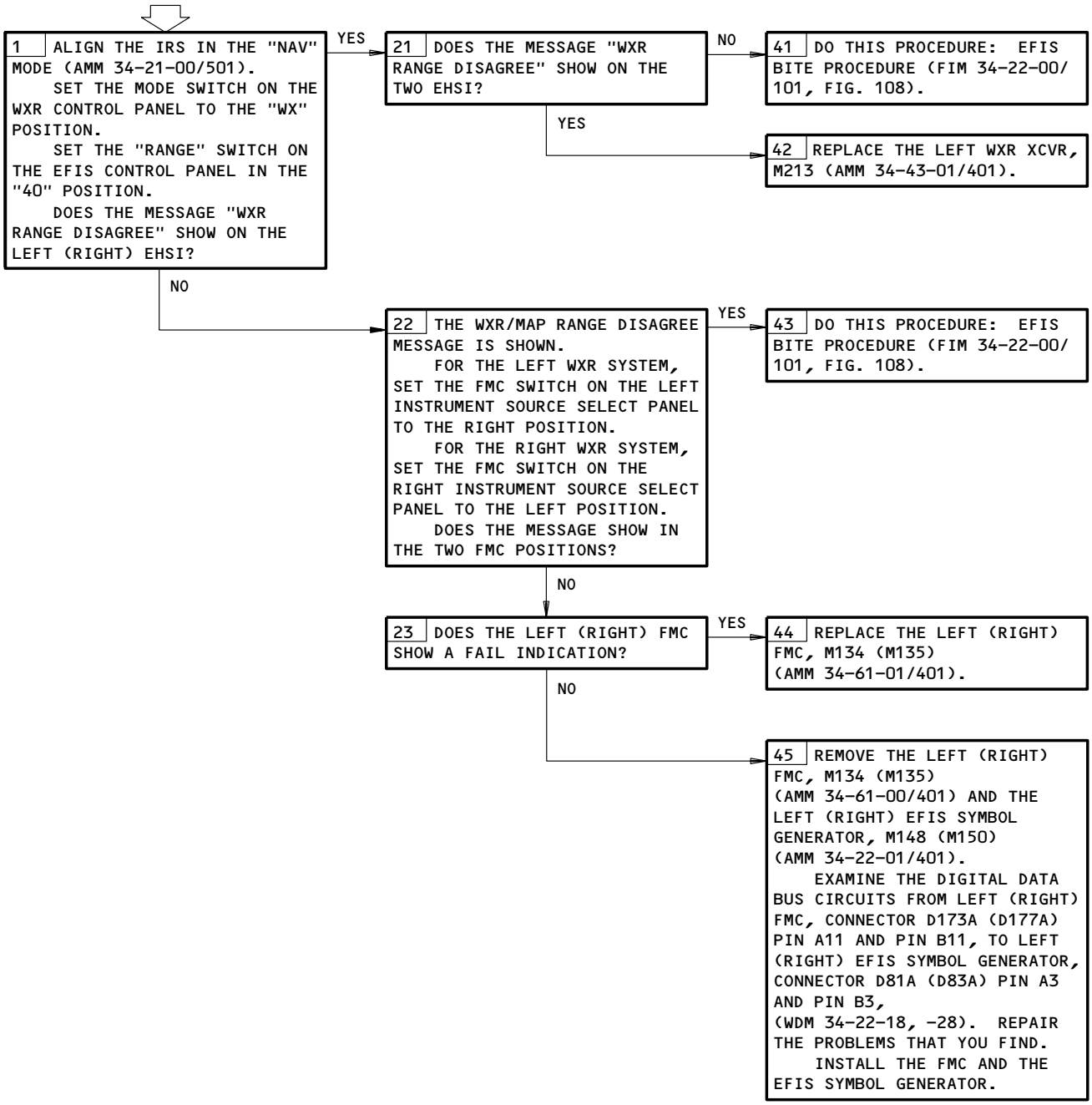
WXR RANGE DISAGREE PROBLEMS



WXR Range Disagree Problems
Figure 104 (Sheet 2)

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WEATHER RADAR BITE PROCEDURE FOR EXTERNAL FAULTS (WITH "ANTENNA TILT" FAULT MESSAGES)

PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- ADC (AMM 34-12-00/501) 1
- IRS (AMM 34-21-00/501)
- EFIS (AMM 34-22-00/501)
- RA (AMM 34-33-00/501) 1
- WXR (AMM 34-43-00/501)
- TCAS (AMM 34-45-00/501) 1
- GPWS (AMM 34-46-00/501) 1
- ATC (AMM 34-53-00/501) 1
- FMCS (AMM 34-61-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11F2

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

1 DO THE WEATHER RADAR SYSTEM SELF-TEST (AMM 34-43-00/501).
ARE "ANTENNA TILT" CODE MESSAGE(S), SHOWN ON NDs?

YES → 20 CHECK EICAS MESSAGES WITH FIG. 105 (SHEET 2).

NO → 2 THE SYSTEM IS OK.

1 AIRPLANES WITH OPERATIONAL PREDICTIVE WINDSHEAR SYSTEM (PWS)

Weather Radar Bite Procedure for External Faults
(With "Antenna Tilt" Fault Messages)
Figure 105 (Sheet 1)

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EXTERNAL FAULTS	WXR ANTENNA TILT CODE MESSAGES 1
ATTITUDE – LEFT	–1
ATTITUDE – RIGHT	+1
RADIO ALTITUDE – LEFT	–2
RADIO ALTITUDE – RIGHT	+2
DADC – LEFT	–3
DADC – RIGHT	+3
EFIS – LEFT	–4
EFIS – RIGHT	+4
DISCRETE QUALIFIER INPUTS	–5
PITCH/ROLL INPUTS OR AIR GROUND DISCRETE INPUT	–6
AIR GROUND DISCRETE INPUT	–7
WINDSHEAR INHIBIT INPUT	–8

ANTENNA TILT CODES FOR RADAR EXTERNAL FAULTS

1 WINDSHEAR POP–UP MODE WILL IMMEDIATELY EXIT THE SELF–TEST SEQUENCE.

Weather Radar Bite Procedure for External Faults
(With "Antenna Tilt" Fault Messages)
Figure 105 (Sheet 2)

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PREREQUISITES

MAKE SURE THESE SYSTEMS ARE OPERATIONAL:
- ADC (AMM 34-12-00/501)
- IRS (AMM 34-21-00/501)
- EFIS (AMM 34-22-00/501)
- RA (AMM 34-33-00/501)
- WXR (AMM 34-43-00/501)
- EGPWS (AMM 34-46-00/501)

WARNING: WHEN YOU DO THE BITE TEST, MAKE SURE THAT YOU OBEY THE PRECAUTIONS FOR WEATHER RADAR OPERATION IN THE RADIATION MODE. INJURY TO PERSONS CAN OCCUR.

WXR TILT CODE FAULT ISOLATION

1 DO ANY WEATHER RADAR TILT CODES SHOW ON THE DISPLAY?

YES → 21 DOES THE TILT CODE "-1" SHOW ON THE DISPLAY WHEN THE LEFT WEATHER RADAR RECEIVER/TRANSMITTER IS ACTIVE?

YES → 41 SELECT THE RIGHT WEATHER RADAR RECEIVER/TRANSMITTER, M214 ON THE WEATHER RADAR CONTROL PANEL.
IF THE TILT CODE "+1" SHOWS ON THE DISPLAY, THEN DO THIS PROCEDURE: IRU FAULT ISOLATION (FIM 34-21-00/101).
IF THE TILT CODE "+1" DOES NOT SHOW, REPLACE THE LEFT WEATHER RADAR RECEIVER/TRANSMITTER, M213 (AMM 34-43-01/401).
IF THE PROBLEM CONTINUES, EXAMINE THE DATA BUS FROM CONNECTOR D391B, PIN J11 AND PIN J12, AND D367B, PIN C10 AND PIN C11. REPAIR THE PROBLEMS THAT YOU FIND.

NO → 22 DOES THE TILT CODE "+1" SHOW ON THE DISPLAY WHEN THE LEFT WEATHER RADAR RECEIVER/TRANSMITTER IS ACTIVE?

YES → 42 SELECT THE RIGHT WEATHER RADAR RECEIVER/TRANSMITTER, M214 ON THE WEATHER RADAR CONTROL PANEL.
IF THE TILT CODE "-1" SHOWS ON THE DISPLAY, THEN DO THIS PROCEDURE: IRU FAULT ISOLATION (FIM 34-21-00/101).
IF THE TILT CODE "-1" DOES NOT SHOW, REPLACE THE LEFT WEATHER RADAR RECEIVER/TRANSMITTER, M213 (AMM 34-43-01/401).
IF THE PROBLEM CONTINUES, EXAMINE THE DATA BUS FROM CONNECTOR D391B, PIN G12 AND PIN G13, AND D371B, PIN C10 AND PIN C11. REPAIR THE PROBLEMS THAT YOU FIND.

NO → 2 THE SYSTEM IS OK.

NO → SEE SHEET 2 (BLOCK 23)

WXR Tilt Code Fault Isolation
Figure 106 (Sheet 1)

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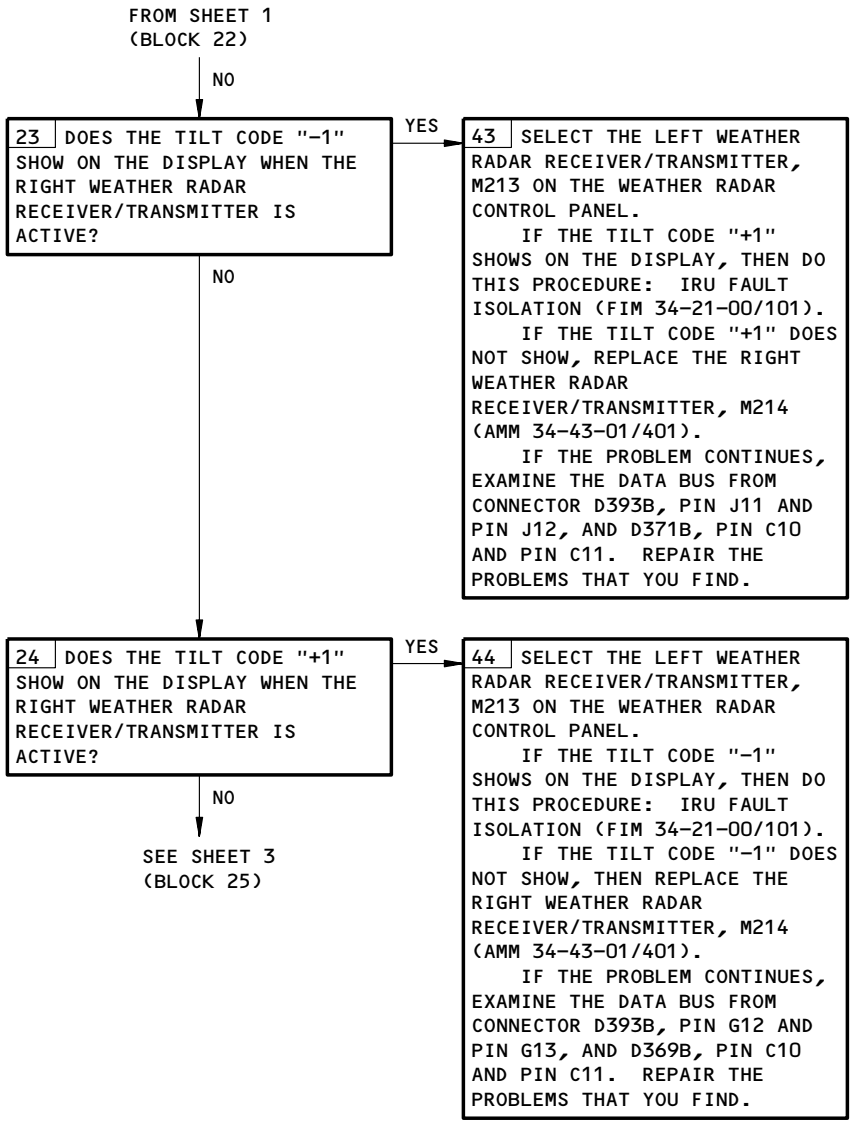

WXR Tilt Code Fault Isolation
Figure 106 (Sheet 2)

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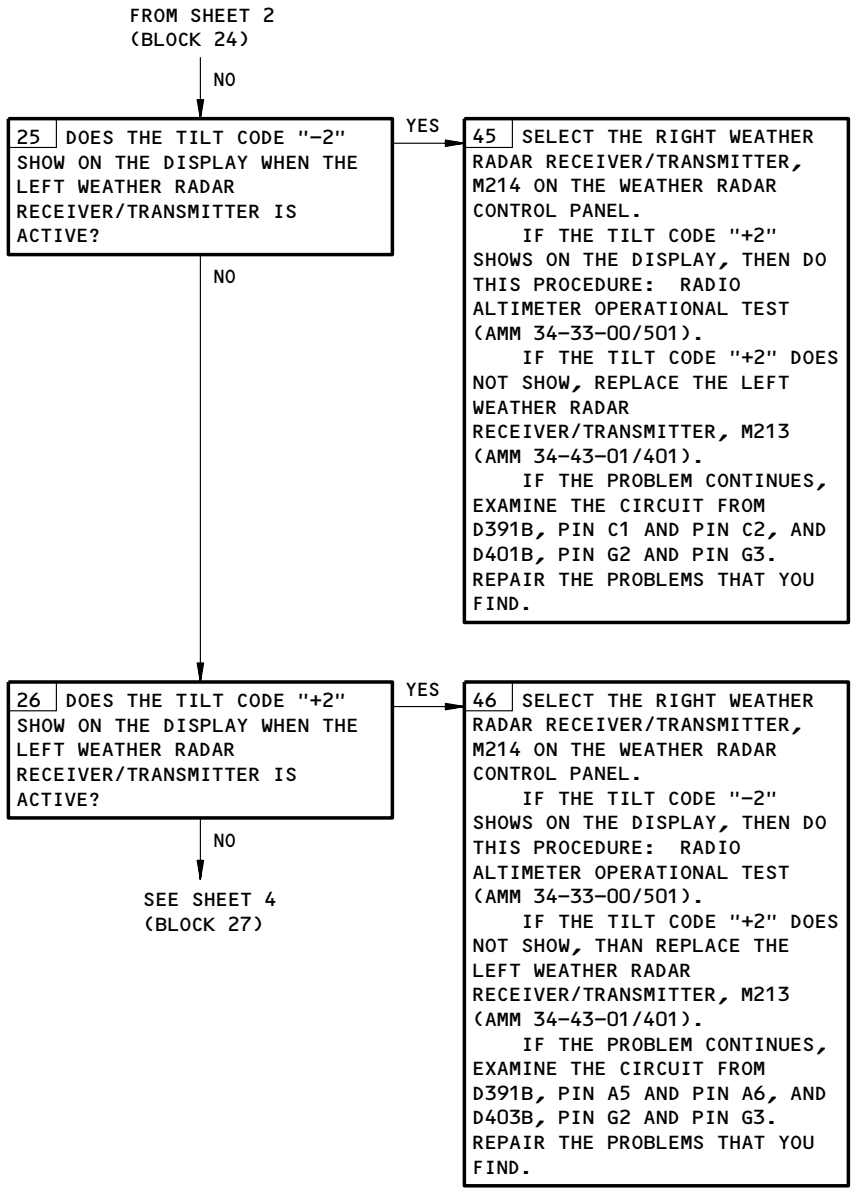

WXR Tilt Code Fault Isolation
Figure 106 (Sheet 3)

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FROM SHEET 3
(BLOCK 24)

NO

27 DOES THE TILT CODE "-2" SHOW ON THE DISPLAY WHEN THE RIGHT WEATHER RADAR RECEIVER/TRANSMITTER IS ACTIVE?

YES

47 SELECT THE LEFT WEATHER RADAR RECEIVER/TRANSMITTER, M213 ON THE WEATHER RADAR CONTROL PANEL.

IF THE TILT CODE "+2" SHOWS ON THE DISPLAY, THEN DO THIS PROCEDURE: RADIO ALTIMETER OPERATIONAL TEST (AMM 34-33-00/501).

IF THE TILT CODE "+2" DOES NOT SHOW, REPLACE THE RIGHT WEATHER RADAR RECEIVER/TRANSMITTER, M214 (AMM 34-43-01/401).

IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM D393B, PIN C1 AND PIN C2, AND D403B, PIN G2 AND PIN G3. REPAIR THE PROBLEMS THAT YOU FIND.

NO

28 DOES THE TILT CODE "+2" SHOW ON THE DISPLAY WHEN THE RIGHT WEATHER RADAR RECEIVER/TRANSMITTER IS ACTIVE?

YES

48 SELECT THE LEFT WEATHER RADAR RECEIVER/TRANSMITTER, M213 ON THE WEATHER RADAR CONTROL PANEL.

IF THE TILT CODE "-2" SHOWS ON THE DISPLAY, THEN DO THIS PROCEDURE: RADIO ALTIMETER OPERATIONAL TEST (AMM 34-33-00/501).

IF THE TILT CODE "-2" DOES NOT SHOW, THAN REPLACE THE RIGHT WEATHER RADAR RECEIVER/TRANSMITTER, M214 (AMM 34-43-01/401).

IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM D393B, PIN A5 AND PIN A6, AND D401B, PIN G2 AND PIN G3. REPAIR THE PROBLEMS THAT YOU FIND.

NO

SEE SHEET 5
(BLOCK 29)

WXR Tilt Code Fault Isolation
Figure 106 (Sheet 4)

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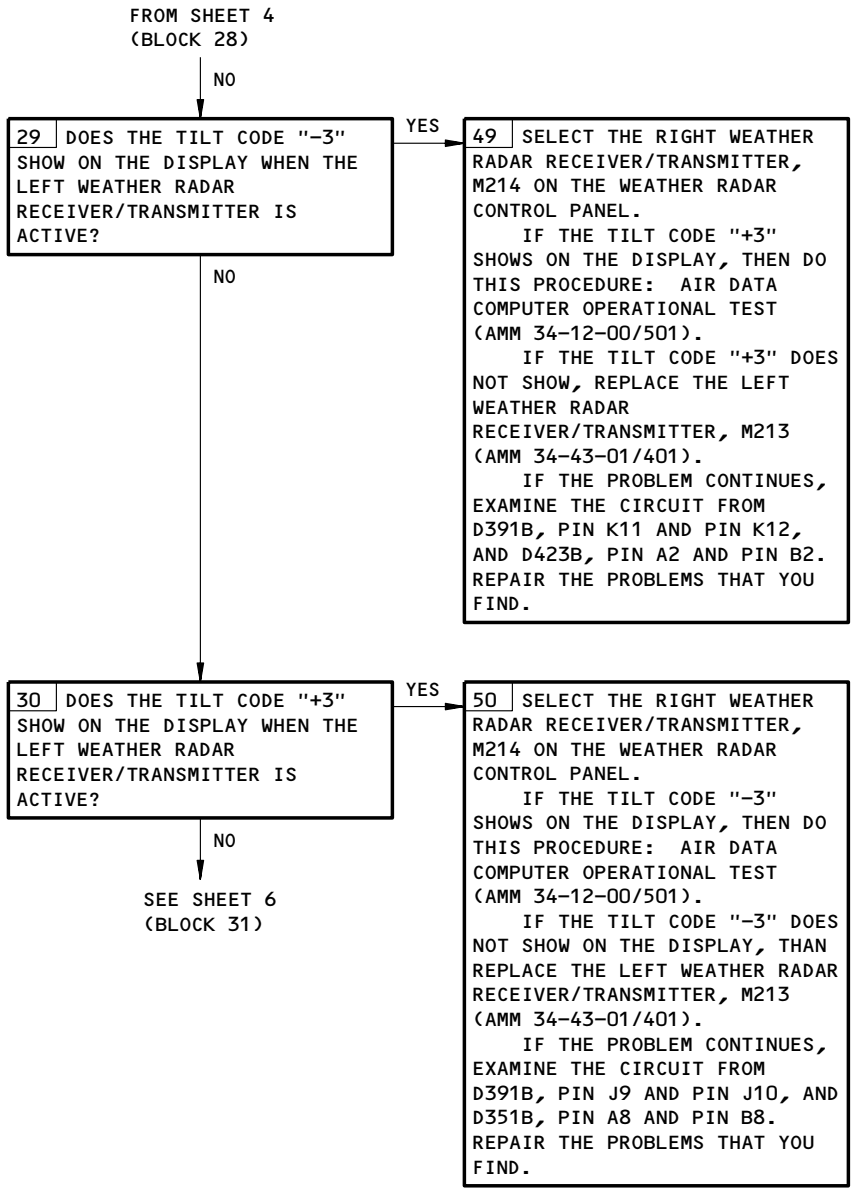

WXR Tilt Code Fault Isolation
Figure 106 (Sheet 5)

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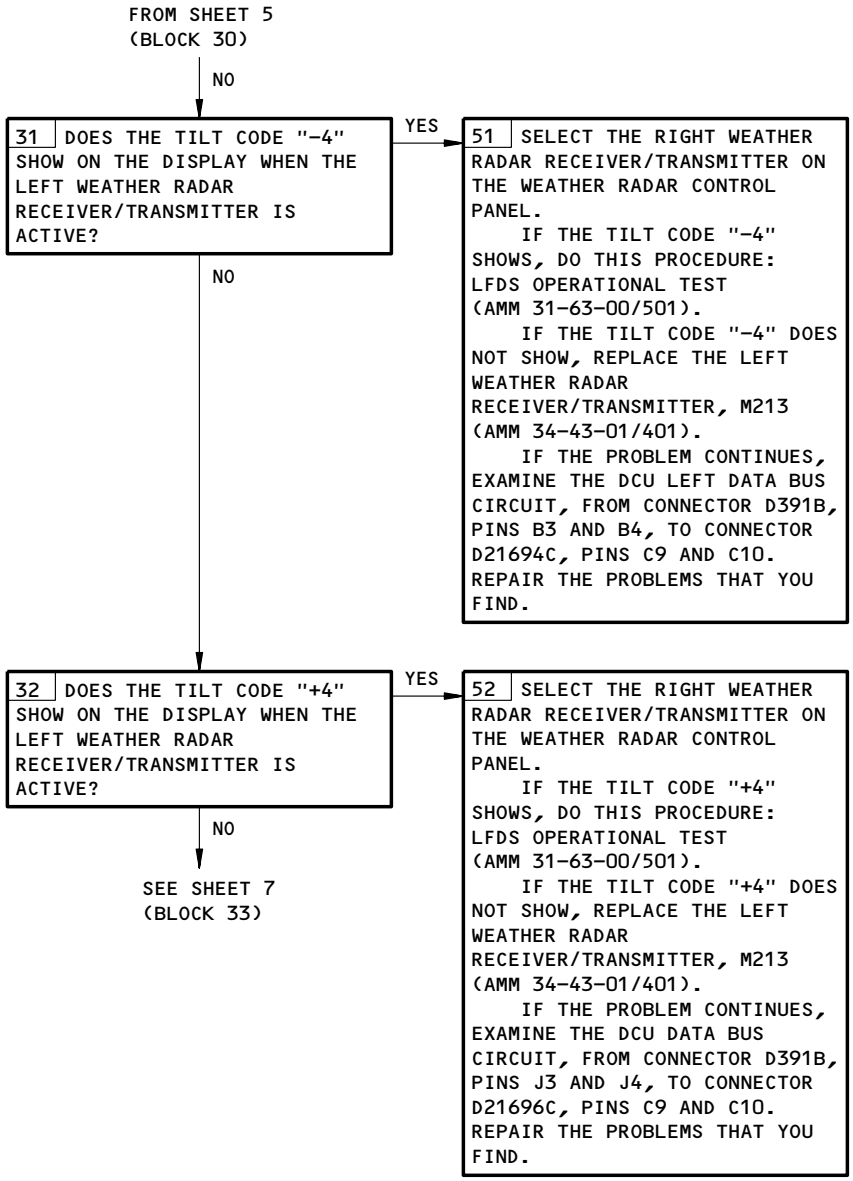

WXR Tilt Code Fault Isolation
Figure 106 (Sheet 6)

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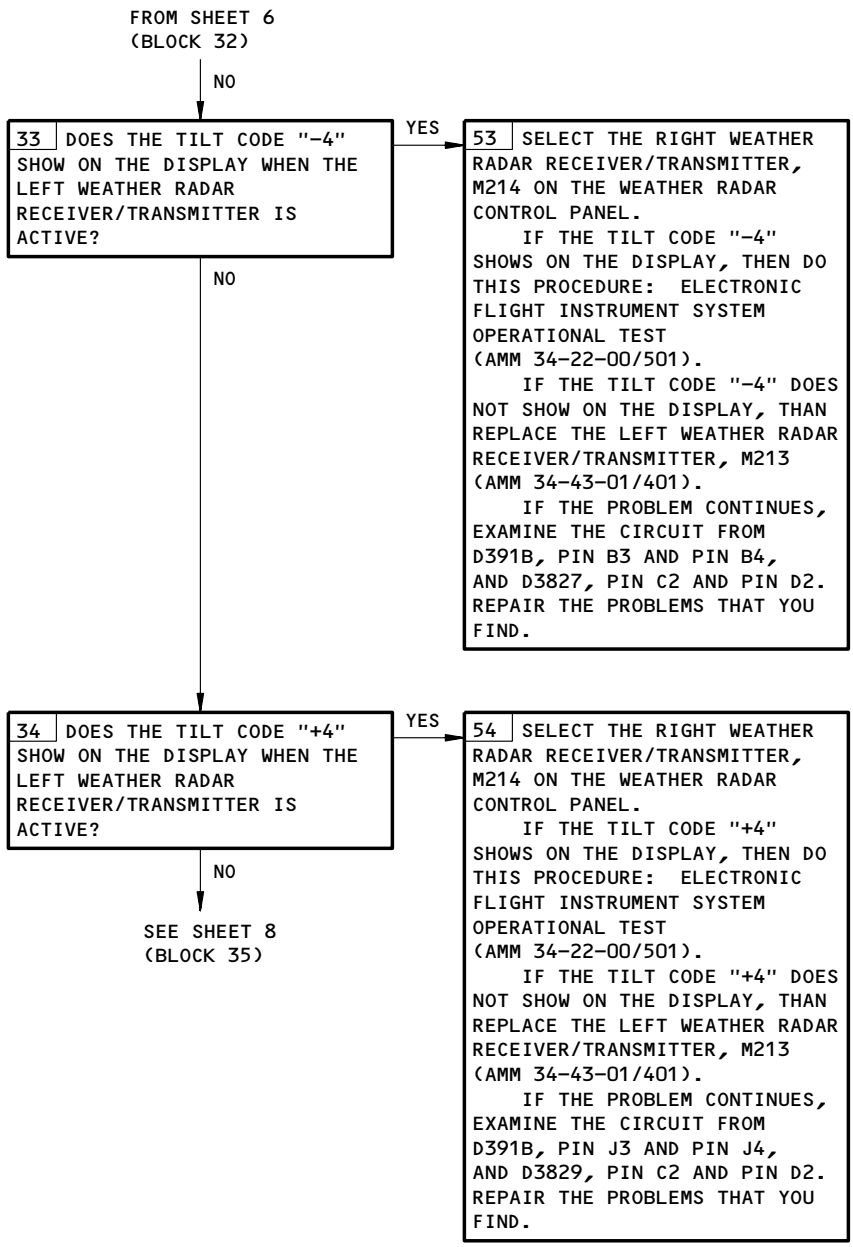

WXR Tilt Code Fault Isolation
Figure 106 (Sheet 7)

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1. Visual Check
   A. Procedure
      (1) Do a visual check of the weather radar LRUs below and make sure that the LRUs have no damage or missing hardware and that the mount screws are tight.
         (a) R/T mount
         (b) Antenna drive assembly
         (c) Antenna planar array
         (d) Antenna
         (e) Control Panel
      (2) Make sure the R/T hold-down screws are tight.
      (3) Make sure the system electrical connectors are connected correctly.
      (4) Make sure the waveguide connection to the antenna drive assembly is attached correctly.
      (5) Make sure there are no dirt or foreign objects in the waveguide drain hole.

         NOTE: The drain hole may be checked when there is a suspected problem with R/T sensitivity or the weather radar display is blank.

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2. ARINC 429 Data Bus
   A. General
      (1) The ARINC 429 data bus gives data necessary to make an analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminals ofthe LRU unit.

CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX. IF YOU TOUCH THE CONNECTORS, DAMAGE TO EQUIPMENT CAN OCCUR.

   B. Equipment
      (1) Standard multi-meter
      (2) Data Bus Analyzer - 429EBP
         (a) JcAIR Instrumentation (recommended)
            400 Industrial Parkway,
            Industrial Airport, KS 66031
         (b) Interface Technology (alternative)
            150 E. Arrow Highway,
            San Dimas, CA 91773
      (3) Breakout box
         (a) A34011-1 (recommended)
         (b) A34011-112 (alternative)

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WXR CP							
DIGITAL OUTPUT BUS CHART							
BUS NAME / SOURCE	TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
WXR CP(L)	A	1	D395	UF	429	LO	OUTPUT BUS L
WXR CP(L)	A	2	D395	HJ	429	LO	OUTPUT BUS R
WXR CP(R)	A	1	D495	UF	429	LO	OUTPUT BUS L
WXR CP(R)	A	2	D495	HJ	429	LO	OUTPUT BUS R

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WXR CP ID = 23								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITVE SENSE	UNITS
GAIN	A	270	BNR	10	00	N/A	N/A	dB
TILT	A	270	BNR	10	00	± 15	UP	DEG

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WXR CP				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
STABILIZATION ON	270	13	CODED 1	
MAP	270	16-14	CODED 010	
TEST	270	16-14	CODED 100	
WEATHER	270	16-14	CODED 001	

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TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS)

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ANTENNA - BOTTOM TCAS, M1707	1	1	BOTTOM OF FUSELAGE	34-45-02
ANTENNA - TOP TCAS, M1706	1	1	TOP OF FUSELAGE	34-45-02
CIRCUIT BREAKER -			FLIGHT COMPARTMENT, P11	
TCAS, C628		1	11F12	*
COMPUTER - (FIM 31-41-00/101)				
EICAS LEFT, M10181				
EICAS RIGHT, M10182				
COMPUTER - (FIM 34-46-00/101)				
GROUND PROXIMITY, M147				
COMPUTER - TCAS, M1705	2	1	119BL, MAIN EQUIP CENTER, E1-3	34-45-01
INDICATOR - (FIM 34-22-00/101)				
LEFT ELECTRONIC HORIZONTAL SITUATION, N5				
LEFT VERTICAL SPEED, N9				
RIGHT ELECTRONIC HORIZONTAL SITUATION, N44				
RIGHT VERTICAL SPEED, N49				
INTERROGATOR - (FIM 34-55-00/101)				
LEFT DME, M123				
RIGHT DME, M124				
MODULE - (FIM 31-51-00/101)				
LEFT SIREN/OWL (AURAL WARNING), M999				
RIGHT SIREN/OWL (AURAL WARNING), M619				
MODULE - (FIM 32-30-00/101)				
LANDING GEAR LEVER, M937				
PANEL - ATC CONTROL, M81	2	1	FLIGHT COMPARTMENT, P8	34-53-02
RELAY (FIM 31-01-36/101)				
SYS NO. 1 AIR/GND, K143				
RELAY (FIM 31-01-37/101)				
SYS NO. 2 AIR/GND, K201				
SWITCH - (FIM 34-12-00/101)				
LEFT ADC, S482				
RIGHT ADC, S483				
SWITCH - (FIM 34-21-00/101)				
IRS SOURCE SELECT, S12				
SYMBOL GENERATOR - (FIM 34-22-00/101)				
CENTER EFIS, M149				
LEFT EFIS, M148				
RIGHT EFIS, M150				
TRANSPONDER - (FIM 34-53-00/101)				
LEFT ATC, M112				
RIGHT ATC, M113				
UNIT - (FIM 31-31-00/101)				
FLT DATA ACQUISITION, M138				

* SEE THE WDM EQUIPMENT LIST

Traffic Alert and Collision Avoidance System (TCAS) - Component Index
Figure 101

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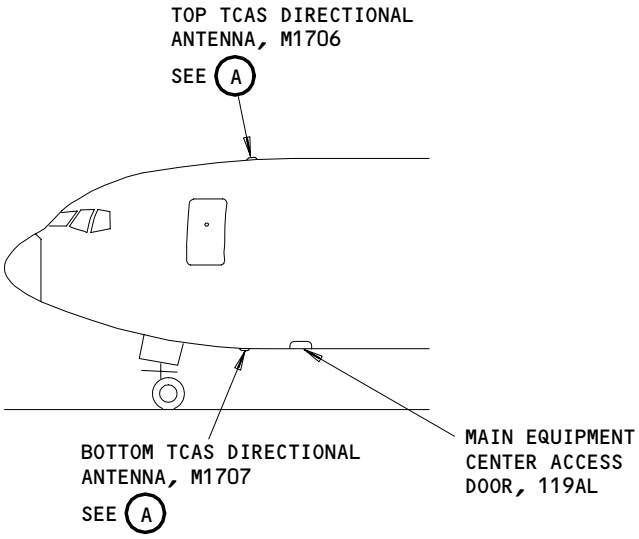

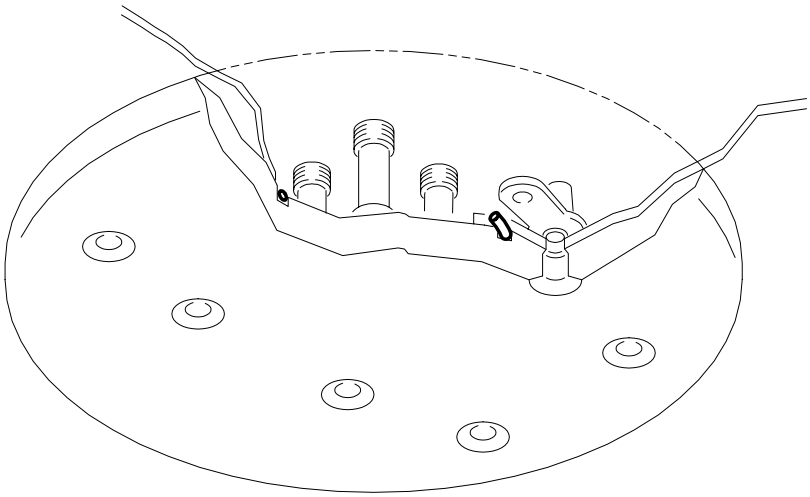

BOTTOM OR TOP TCAS DIRECTIONAL ANTENNA, M1707 OR M1706

A

Traffic Alert and Collision Avoidance System (TCAS) - Component Location
Figure 102 (Sheet 1)

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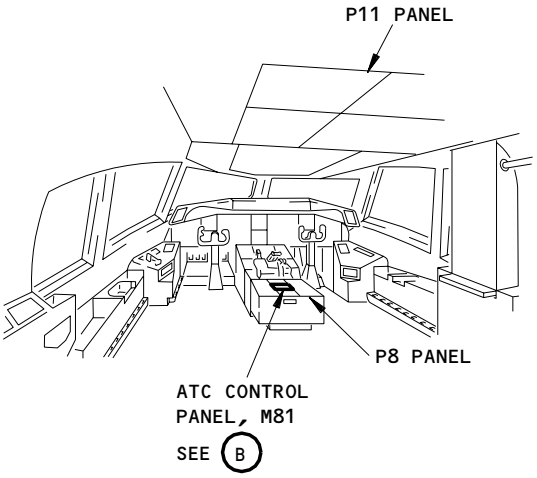
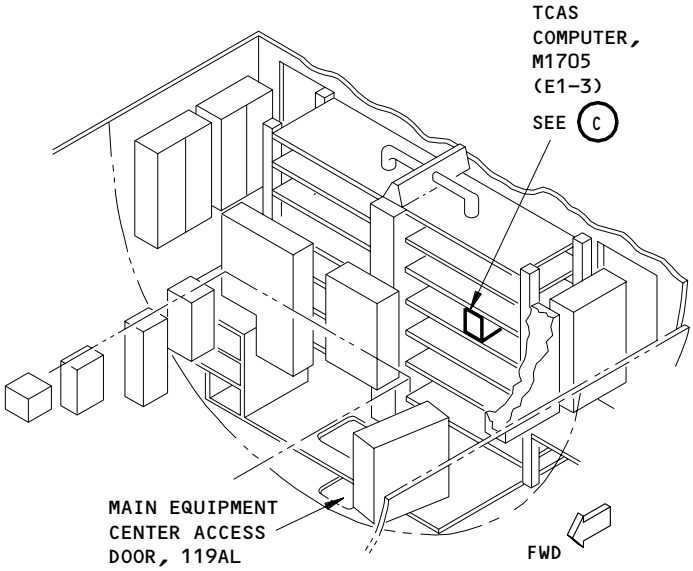
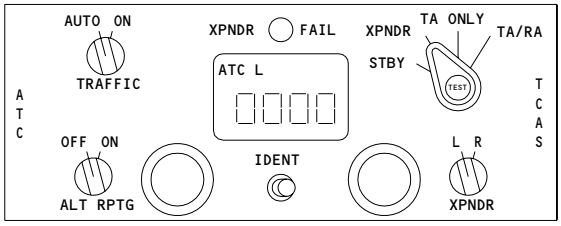


FLIGHT COMPARTMENT

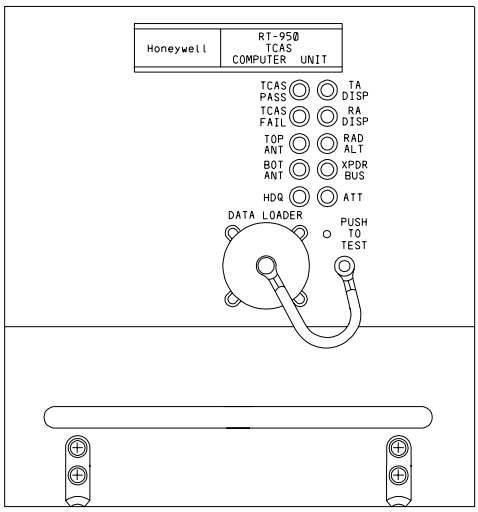


MAIN EQUIPMENT CENTER



TCAS/ATC CONTROL PANEL, M81

B



TCAS COMPUTER, M1705

C

Traffic Alert and Collision Avoidance System (TCAS) - Component Location
Figure 102 (Sheet 2)

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- ATC SYSTEM (AMM 34-53-00/501)
- EFIS SYSTEM (AMM 34-22-00/501)
- IRS SYSTEM (AMM 34-21-00/501)
- RA SYSTEM (AMM 34-33-00/501)

MAKE SURE THIS CIRCUIT BREAKER IS CLOSED:
- 11F12, TCAS

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
- ELECTRICAL POWER IS ON (AMM 24-22-00/201)
- ALIGN IRS (AMM 34-21-00/201)

TCAS BITE PROCEDURE

1 SET THE TRANSPONDER SELECT SWITCH ON THE TCAS/ATC CONTROL PANEL TO ATC L (R).
PUSH THE TEST SWITCH ON THE TCAS COMPUTER.
DOES THE "TCAS FAIL" INDICATOR COME ON AT THE END OF THE TEST?

YES → **50** REPLACE THE TCAS COMPUTER, M1705 (AMM 34-45-01/401).

NO ↓

2 DOES THE "XPDR BUS" INDICATOR COME ON AT THE END OF THE TEST?

YES → **51** REPLACE THE LEFT (RIGHT) ATC TRANSPONDER, M112 (M113)(AMM 34-53-01/401).
IF THE PROBLEM CONTINUES, REPLACE THE TCAS COMPUTER, M1705 (AMM 34-45-01/401).
IF THE PROBLEM CONTINUES, REMOVE THE TCAS COMPUTER AND THE LEFT (RIGHT) ATC TRANSPONDER.
EXAMINE THE CIRCUIT FROM THE TCAS COMPUTER, CONNECTOR D2463E, PINS J15,K15,F14 AND G14 (A14,B14,H14 AND J14), TO THE LEFT (RIGHT) ATC TRANSPONDER, CONNECTOR D331A (D359A), PINS E5,F5,G5 AND H5 (WDM 34-45-02).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE TCAS COMPUTER AND THE LEFT (RIGHT) ATC TRANSPONDER.

NO ↓

SEE SHEET 2
(BLOCK 3)

TCAS BITE Procedure
Figure 103 (Sheet 1)

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FROM SHEET 1
(BLOCK 2)

NO

3 DOES THE "TOP ANT" INDICATOR COME ON AT THE END OF THE TEST?

YES

10 REMOVE THE TCAS COMPUTER, M1705 (MM 34-45-01/401).
DO A CHECK OF THE UPPER ANTENNA CIRCUIT FROM THE TCAS COMPUTER, CONNECTOR D2463A, PINS C1,C2,C3 AND C4, TO THE UPPER ANTENNA, M1706, CONNECTORS D2465,D2529, D2531 AND D2533, PINS A1 AND C1 (WDM 34-45-11).
IS THE ANTENNA CABLE OK?

YES

52 REPLACE THE UPPER TCAS ANTENNA, M1706 (MM 34-45-02/401).
INSTALL THE TCAS COMPUTER, M1705 (MM 34-45-01/401).

NO

53 REPLACE THE ANTENNA CIRCUIT FROM THE TCAS COMPUTER, M1705, CONNECTOR D2463A, PINS C1,C2,C3 AND C4, TO THE UPPER TCAS ANTENNA, CONNECTORS D2465,D2529,D2531 AND D2533, PINS A1 AND C1 (WDM 34-45-11).
INSTALL THE TCAS COMPUTER, M1705 (MM 34-45-01/401).

NO

4 DOES THE "BOT ANT" INDICATOR COME ON AT THE END OF THE TEST?

YES

11 REMOVE THE TCAS COMPUTER, M1705 (MM 34-45-01/401).
DO A CHECK OF THE LOWER ANTENNA CIRCUIT FROM THE TCAS COMPUTER, CONNECTOR D24638, PINS C1,C2,C3 AND C4, TO THE LOWER ANTENNA, M1707, CONNECTORS D2467,D2613,D2615 AND D2617, PINS A1 AND C1 (WDM 34-45-11).
IS THE ANTENNA CABLE OK?

YES

54 REPLACE THE LOWER TCAS ANTENNA, M1707 (MM 34-45-02/401).
INSTALL THE TCAS COMPUTER, M1705 (MM 34-45-01/401).

NO

55 REPLACE THE ANTENNA CIRCUIT FROM THE TCAS COMPUTER, M1705, CONNECTOR D2463B, PINS C1,C2,C3 AND C4, TO THE LOWER TCAS ANTENNA, CONNECTORS D2467,D2613,D2615 AND D2617, PINS A1 AND C1 (WDM 34-45-11).
INSTALL THE TCAS COMPUTER, M1705 (MM 34-45-01/401).

NO

SEE SHEET 3
(BLOCK 5)

TCAS BITE Procedure
Figure 103 (Sheet 2)

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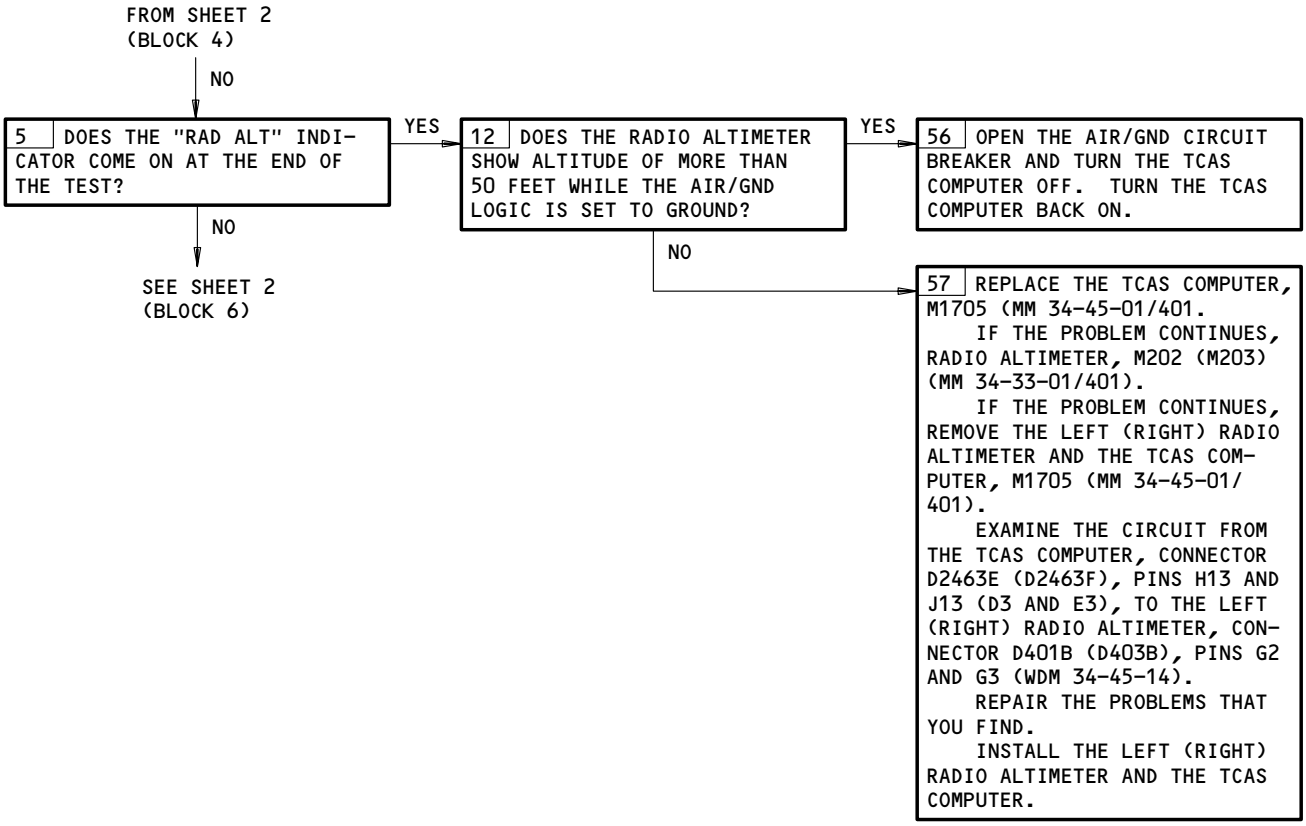

TCAS BITE Procedure
Figure 103 (Sheet 3)

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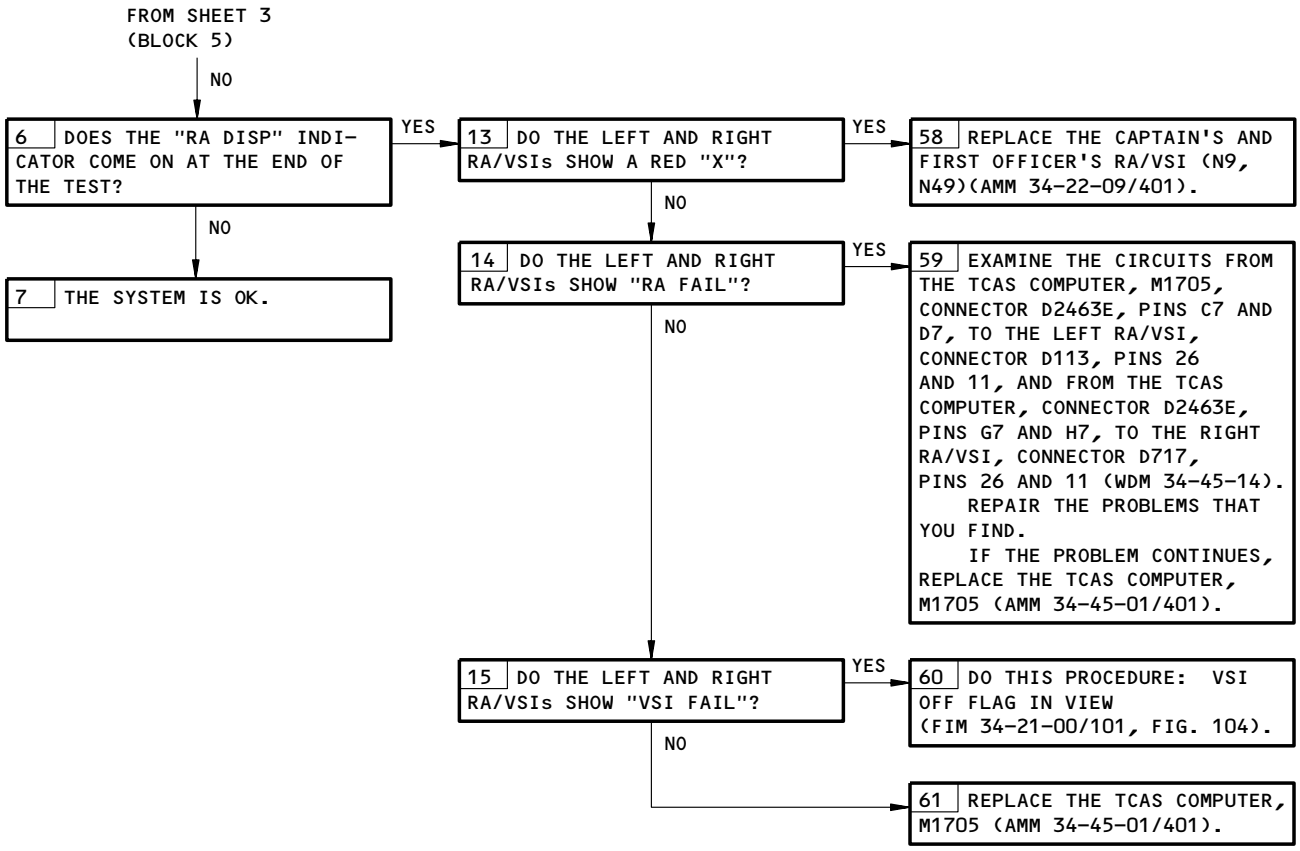

TCAS BITE Procedure
Figure 103 (Sheet 4)

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FROM SHEET 4
(BLOCK 15)

YES

16 SET THE RIGHT EFI SWITCH ON THE INSTRUMENT SOURCE SELECT PANEL TO NORM.
PUSH AND HOLD THE TEST SWITCH ON THE TCAS/ATC CONTROL PANEL FOR 1 SECOND.
DOES THE TCAS TEST DISPLAY SHOW ON THE RIGHT EFIS DISPLAYS?

NO → 61 EXAMINE THE CIRCUIT FROM THE TCAS COMPUTER, M1705, CONNECTOR D2463E, PINS G7 AND H7, TO THE RIGHT EFIS SG, M150, CONNECTOR D373A, PINS J9 AND K9.
REPAIR THE PROBLEMS THAT YOU FIND.

YES

17 SET THE RIGHT EFI SWITCH ON THE INSTRUMENT SOURCE SELECT PANEL TO ALTN.
PUSH AND HOLD THE TEST SWITCH ON THE TCAS/ATC CONTROL PANEL FOR 1 SECOND.
DOES THE TCAS TEST DISPLAY SHOW ON THE RIGHT EFIS DISPLAYS?

NO → 62 EXAMINE THE CIRCUIT FROM THE TCAS COMPUTER, M1705, CONNECTOR D2463E, PINS C7 AND D7, TO THE CENTER EFIS SG, M149, CONNECTOR D373A, PINS J9 AND K9.
REPAIR THE PROBLEMS THAT YOU FIND.

YES → 63 REPLACE THE TCAS COMPUTER, M1705 (MM 34-45-01/401).
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE TCAS COMPUTER, M1705, CONNECTOR D2463E, PIN C14, TO THE LEFT EFIS SG, M148, CONNECTOR D425E, PIN E11, AND THE CENTER EFIS SG, M149, CONNECTOR D413E, PIN E11.
REPAIR THE PROBLEMS THAT YOU FIND.
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE TCAS COMPUTER, M1705, CONNECTOR D2463E, PIN E13, TO THE RIGHT EFIS SG, M150, CONNECTOR D373E, PIN G11, AND THE CENTER EFIS SG, M149, CONNECTOR D413E, PIN G11.
REPAIR THE PROBLEMS THAT YOU FIND.

TCAS BITE Procedure
Figure 103 (Sheet 5)

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- ATC SYSTEM (AMM 34-53-00/501)
- WEU SYSTEM (AMM 31-51-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11B16, WARN SPKR L
- 11B18, WARN ELEX B
- 11E5, VSI LEFT
- 11E26, VSI RIGHT
- 11F12, TCAS
- 11H35, WARN SPKR R
- 11J34, WARN ELEX A

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
- ELECTRICAL POWER IS ON (AMM 24-22-00/201)
- ALIGN IRS (AMM 34-21-00/201)

TCAS VOICE ADVISORY ALERT PROBLEM

1 HOLD THE MOLD SWITCH ON THE ATC CONTROL PANEL TO THE TEST POSITION FOR ABOUT 2 SECONDS.
DOES THE COCKPIT SPEAKERS OR HEADSET SOUND "TCAS TEST PASS"?

NO → 20 REPLACE THE TCAS COMPUTER, M1705 (AMM 34-45-01/401).
IF THE PROBLEM CONTINUES, REPLACE THE LEFT AURAL WARNING SIREN/OWL MODULE, M999.
EXAMINE THE CIRCUIT FROM THE TCAS COMPUTER, CONNECTOR D2463E, PINS F3 AND G3, TO THE LEFT AURAL WARNING SIREN/OWL MODULE, CONNECTOR D811, PINS 62 AND 63.
REPAIR THE PROBLEMS THAT YOU FIND.

YES ↓

2 THE TCAS VOICE ADVISORY ALERT IS OK.

TCAS Voice Advisory Alert Problem
Figure 104

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1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR CAN CAUSE DAMAGE TO THE CONNECTORS.

      (1) The ARINC 429 data bus charts give data necessary to make an analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminal or at the LRU connectors.
   B. Equipment
      (1) Standard multimeter
      (2) 429EBP Data Bus Analyzer (recommended)
          JcAIR Instrumentation
          400 Industrial Parkway
          Industrial Airport, KS 66031

          429EBP Data Bus Analyzer (alternative)
          Interface Technology
          150 E. Arrow Highway,
          San Dimas, CA 91773
      (3) A34011-1 Breakout Box (recommended)
          A34011-112 Breakout Box (alternative)

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TCAS COMPUTER							
DIGITAL OUTPUT BUS CHART							
BUS NAME			CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
SOURCE	TYPE	BUS					
TCAS	A	1	RMP	15J 15K	429	HI	COORDINATION DATA
TCAS	A	2	RMP	14A 14B	429	HI	COORDINATION DATA
TCAS	A	1	RMP	7C 7D	429	HI	TA/RA DISPLAY #1
TCAS	A	2	RMP	7G 7H	429	HI	TA/RA DISPLAY #2

TCAS COMPUTER ID=035								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
INTRUDER ALTITUDE	A	131	BCD	2	00	± 12,700	N/A	FEET
INTRUDER BEARING	A	132	BCD	2	00	± 180	N/A	DEGREES
INTRUDER RANGE	A	130	BCD	2	00	128	N/A	NM
OWN AIRCRAFT ALT	A	203	BCD	2	00	131,072	N/A	FEET

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GROUND PROXIMITY WARNING SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
CIRCUIT BREAKER -	2		FLT COMPT, P11	
GND PROX, C592		1	11F4	*
COMPUTER - GROUND PROXIMITY WARNING, M147	1	1	119AL, MAIN EQUIP CTR, E1-5	34-46-01
LIGHT - PULL UP	2	1	FLT COMPT, P1, DISCRETE WARNING DISPLAY MODULE, M779 (REF)	*
LIGHT - WINDSHEAR, L890	2	1	FLT COMPT, P1-3	
MODULE - (FIM 33-16-00/101) DISCRETE WARNING DISPLAY, M779				
MODULE - (FIM 32-30-00/101) LANDING GEAR CONTROL LEVER, M937				
MODULE - (FIM 27-58-00/101) LEFT FLAP/STAB POSITION, M838				
PANEL - (FIM 28-43-00/101) MISCELLANEOUS TEST, M10398				
RELAY - (FIM 31-01-36/101) SYSTEM 1 AIR/GROUND, K149				
SWITCH - GND PROX TEST, YEIS4	2	1	FLT COMPT, P61, MISC TEST PANEL, M10398 (REF)	*
SWITCH-LIGHT - GND PROX/CONFIG GEAR OVRD, S604	2	1	FLT COMPT, P3-1	*
SWITCH-LIGHT - GND PROX FLAP OVRD, S603	2	1	FLT COMPT, P3-1	*
SWITCH-LIGHT - GND PROX G/S INHBT, S16	2	1	FLT COMPT, P1-3	*

* SEE THE WDM EQUIPMENT LIST

Ground Proximity Warning System - Component Index
Figure 101

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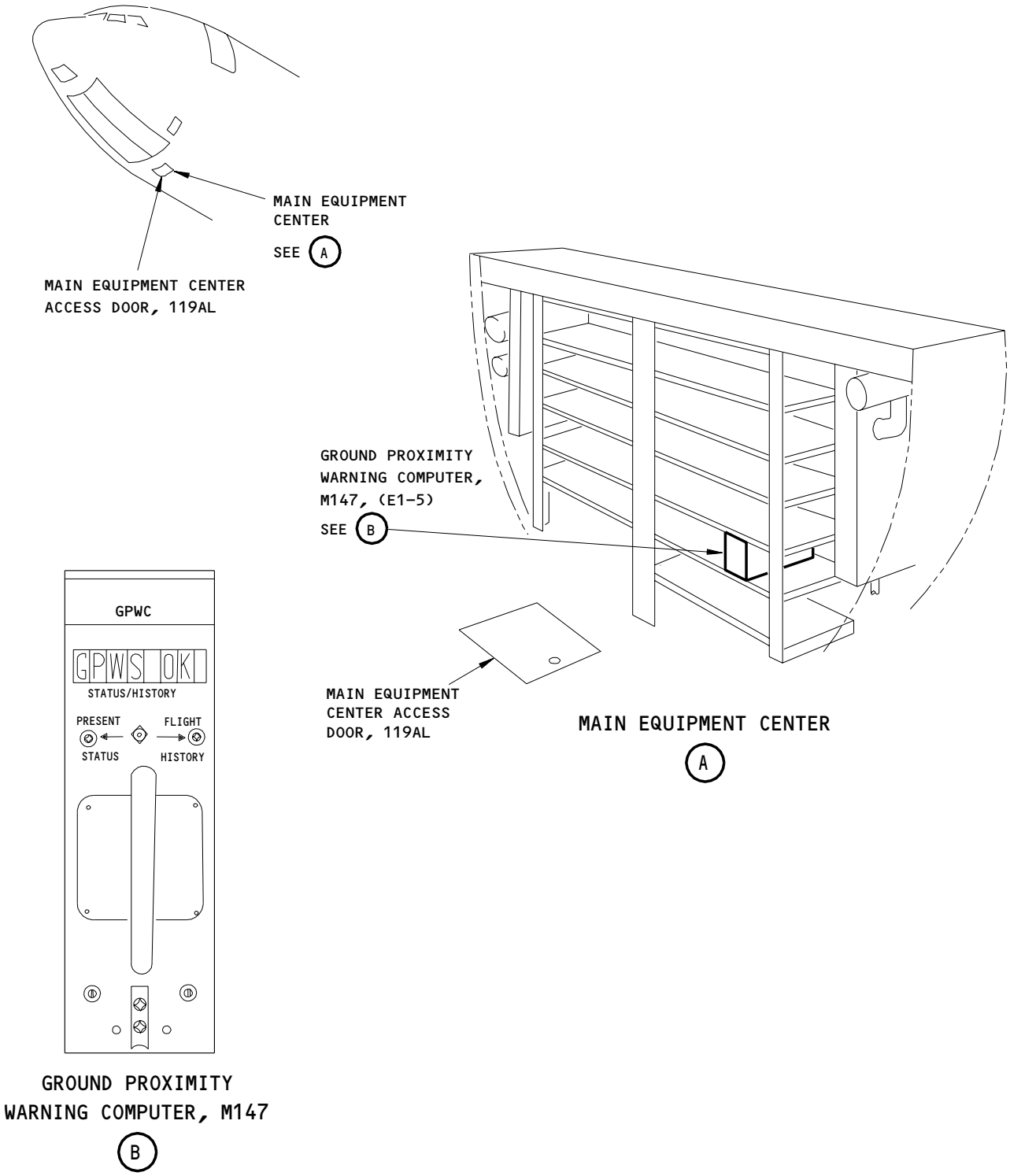

Ground Proximity Warning System - Component Location
Figure 102 (Sheet 1)

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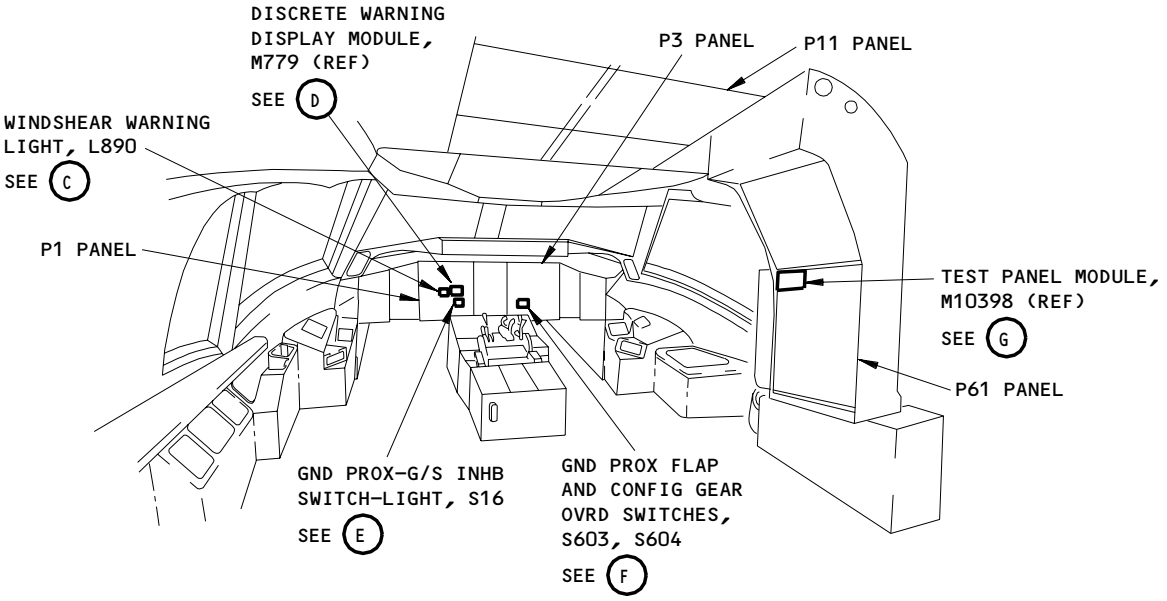
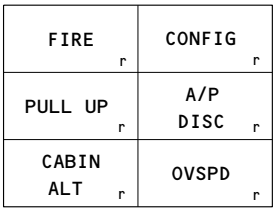


FLIGHT COMPARTMENT

WINDSHEAR WARNING LIGHT, L890

C

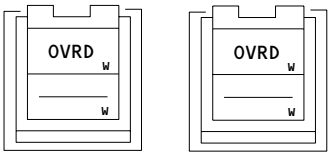


DISCRETE WARNING DISPLAY MODULE, M779 (REF)

D

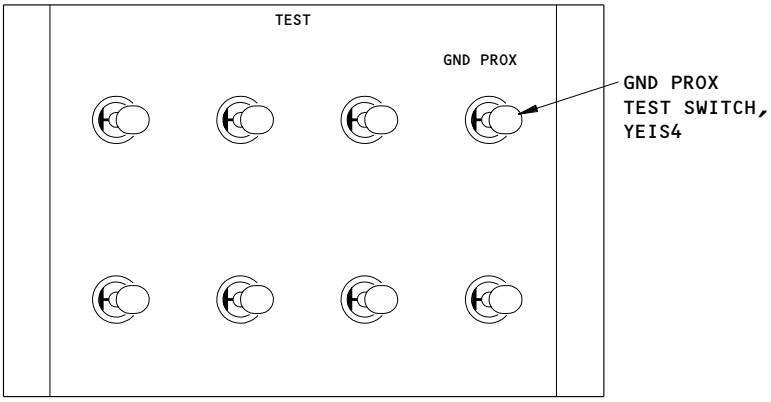
GND PROX-G/S INHB SWITCH-LIGHT, S16

E



GND PROX FLAP AND CONFIG GEAR OVRD SWITCHES, S603, S604

F



TEST PANEL MODULE, M10398 (REF)

G

Ground Proximity Warning System - Component Location
Figure 102 (Sheet 2)

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- ENGINE INDICATING AND CREW ALERTING SYSTEM (AMM 31-41-00/201)
- WARNING SYSTEM (AMM 31-51-00/501)
- AIR DATA COMPUTING SYSTEM (AMM 34-12-00/501)
- INERTIAL REFERENCE SYSTEM (AMM 34-21-00/501)
- ELECTRONIC FLIGHT INSTRUMENT SYSTEM (EFIS) (AMM 34-22-00/501)
- ILS (AMM 34-31-00/501)
- RADIO ALTIMETER SYSTEM (AMM 34-33-00/501)
- FLIGHT MANAGEMENT SYSTEM (AMM 34-61-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11B16, 11B18, 11F4, 11H35, 11J34

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

GROUND PROXIMITY WARNING COMPUTER BITE PROCEDURE

1 ENERGIZE AND ALIGN THE LEFT IRU (AMM 34-21-00/201).

MAKE SURE THE "OVRD" LIGHT IS OFF IN THESE SWITCHES ON THE P3-1 PANEL:
- "GND PROX/CONFIG GEAR OVRD" SWITCH
- "GND PROX/FLAP OVRD" SWITCH.

MOMENTARILY SET THE STATUS/HISTORY SWITCH ON THE GPWC TO THE "PRESENT STATUS" POSITION.

LOOK FOR THESE INDICATIONS ON THE GPWC BITE DISPLAY:

IN TEST
AIRCRAFT TYPE 767-"XXX"
FMC SELECTED
SYSTEM OK
SOFTWARE VERSION IS "XXX", "DD-MMM-YY"
DATABASE VERSION IS "XXX", "DD-MMM-YY"
1*XXXXX*
2*XXXXX*
3*XXXXX*
END TEST

DID SOME OF THESE GPWC INDICATIONS OCCUR?

YES → SEE SHEET 2 (BLOCK 2)

NO →

31 REMOVE THE GPWC, M147 (AMM 34-46-01/401).

IS THERE 115V AC AT THE GPWC, CONNECTOR D435C, PIN 2, AND A GROUND AT THE GPWC, CONNECTOR D435C, PIN 3 (WDM 34-46-11)?

YES →

71 REPLACE THE GPWC, M147 (AMM 34-46-01/401).

NO →

72 EXAMINE THE CIRCUIT FROM THE GPWC, CONNECTOR D435C, PIN 2, TO CIRCUIT BREAKER C592, (11F4) AND FROM THE GPWC, CONNECTOR D435C, PIN 3, TO GROUND (WDM 34-46-11). REPAIR THE PROBLEMS THAT YOU FIND.

INSTALL THE GPWC, M147 (AMM 34-46-01/401).

1 SOMETIMES THE EICAS MESSAGE, "GND PROX SYS", CAN SHOW AFTER THE FAULT IS CORRECTED. MOMENTARILY SET THE STATUS/HISTORY SWITCH ON THE GPWC TO THE "HISTORY" POSITION TO ERASE THE EICAS MESSAGE "GND PROX SYS".

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 1)

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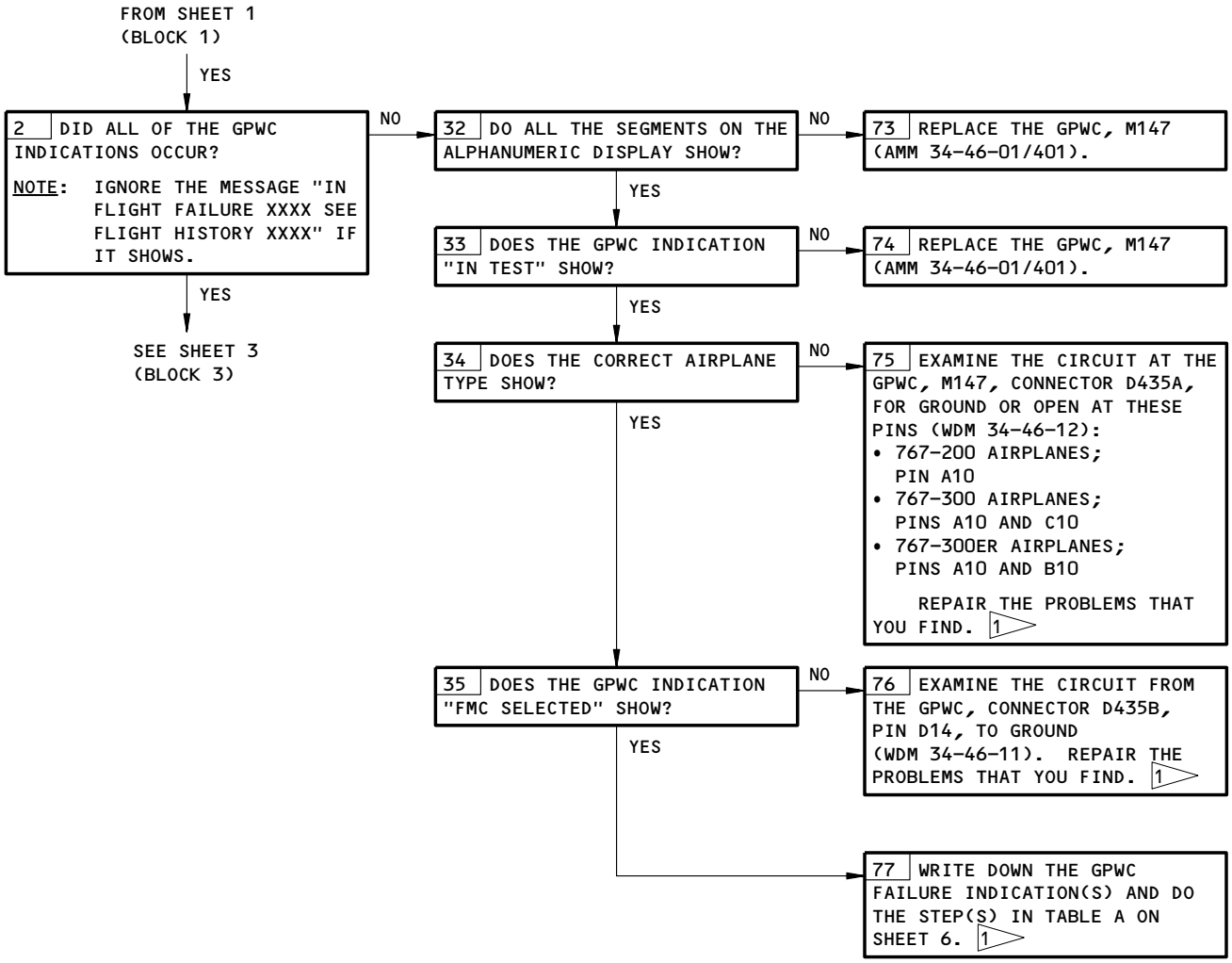

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 2)

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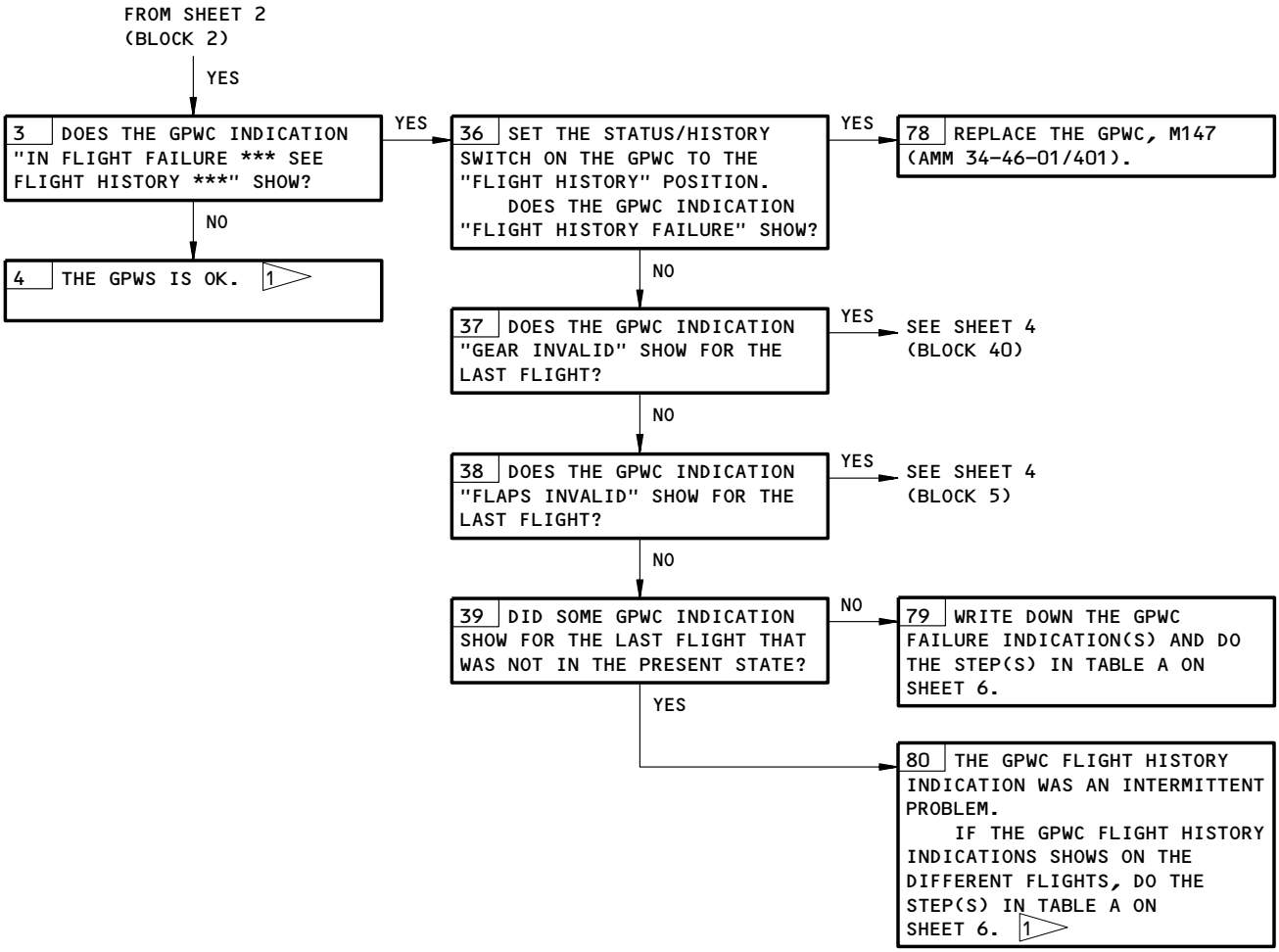

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 3)

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FROM SHEET 3
(BLOCK 38)

YES

FROM SHEET 3
(BLOCK 37)

YES

40 INSTALL THE LANDING GEAR GROUND LOCK PINS.
MAKE SURE LANDING GEAR HYDRAULICS ARE TURNED OFF.
SET THE LANDING GEAR LEVER TO THE "OFF" POSITION.
MOMENTARILY SET THE STATUS/HISTORY SWITCH ON THE GPWC TO THE "PRESENT STATUS" POSITION.
DOES "1*1XXXX*" SHOW AFTER THE DATABASE VERSION?

NO

81 THE GPWC FLIGHT HISTORY INDICATION WAS AN INTERMITTENT PROBLEM.
IF THE SAME GPWC INDICATION SHOWS ON DIFFERENT FLIGHTS, DO THE APPLICABLE STEP IN TABLE A ON SHEET 6. 1

YES

82 EXAMINE THE CIRCUIT FROM TERMINAL BLOCK TB119, PIN G17, THRU THE GND PROX/GEAR OVRD SWITCH, S604, TO GROUND (THE CIRCUIT SHOULD BE OPEN WITH THE SWITCH IN THE NORM POSITION)(WDM 34-46-12). 2
REPAIR THE PROBLEMS THAT YOU FIND. 1
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM GPWC, CONNECTOR D435B, PIN B9, TO THE LANDING GEAR MODULE, M937, CONNECTOR D232, PIN 9 (THE CIRCUIT SHOULD BE OPEN WITH THE LEVER IN THE "OFF" POSITION)(WDM 34-46-12; WDM 32-42-11; WDM 32-61-14) 2 . REPAIR THE PROBLEMS THAT YOU FIND. 1

5 MOMENTARILY SET THE STATUS/HISTORY SWITCH ON THE GPWC TO THE "PRESENT STATUS" POSITION.
DO A CHECK FOR THESE TWO GPWC INDICATIONS AFTER THE DATABASE VERSION:
- WITH THE FLAPS IN THE LANDING POSITION (25 OR 30 DEGREES), "1*X1XXX*" SHOWS
- WITH THE FLAPS AT LESS THAN 25 DEGREES, "1*X0XXX*" SHOWS.

DO EACH OF THE ABOVE GPWC INDICATIONS OCCUR?

YES

83 THE GPWC FLIGHT HISTORY INDICATION WAS AN INTERMITTENT PROBLEM.
IF THE SAME GPWC INDICATION SHOWS ON DIFFERENT FLIGHTS, DO THE APPLICABLE STEP IN TABLE A ON SHEET 6. 1

NO

SEE SHEET 5
(BLOCK 6)

2 THE ISOLATION DIODE IS LOCATED BETWEEN CONNECTOR D4525 AND TERMINAL BLOCK, TB119. MAKE SURE THE DIODE POLARITY IS CORRECT.

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 4)

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FROM SHEET 4
(BLOCK 5)

NO

6 WITH THE FLAPS IN THE LANDING POSITION (25 OR 30 DEGREES), DID "1*X1XXX*" SHOW AFTER THE DATABASE VERSION?

NO →

42 SET THE GND PROX/FLAP OVRD SWITCH, S603, ON THE P3-1 PANEL TO THE "OVRD" POSITION.
MOMENTARILY SET THE STATUS/HISTORY SWITCH ON THE GPWC TO THE "PRESENT STATUS" POSITION.
DOES "1*X1XXX*" SHOW AFTER THE DATABASE VERSION?

YES →

84 REPLACE THE LEFT FLAP/STAB POSITION MODULE, M838 (AMM 27-58-01/401). 1
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM TERMINAL BLOCK, TB119, PIN G19, THRU THE LEFT FLAP/STAB POSITION MODULE, M838, TO GROUND (WDM 34-46-12; WDM 27-58-21). 3 REPAIR THE PROBLEMS THAT YOU FIND. 1

NO →

85 EXAMINE THE CIRCUIT FROM THE GPWC, CONNECTOR D435B, PIN C9, TO TERMINAL BLOCK, TB119, PIN G19 (WDM 34-46-12). REPAIR THE PROBLEMS THAT YOU FIND. 1

YES →

43 DISCONNECT CONNECTOR D5305P ON THE P3-1 PANEL (WDM 34-46-12).
MOMENTARILY SET THE STATUS/HISTORY SWITCH ON THE GPWC TO THE "PRESENT STATUS" POSITION.
DO A CHECK FOR THESE TWO GPWC INDICATIONS AFTER THE DATABASE VERSION:
- WITH THE FLAPS IN THE LANDING POSITION (25 OR 30 DEGREES), "1*X1XXX*" SHOWS
- WITH THE FLAPS AT LESS THAN 25 DEGREES, "1*X0XXX*" SHOWS.

DO EACH OF THE ABOVE GPWC INDICATIONS OCCUR?

YES →

86 CONNECT CONNECTOR D5305P, ON THE P3-1 PANEL (WDM 34-46-12).
EXAMINE THE CIRCUIT FROM TERMINAL BLOCK, TB119, PIN G19, THRU THE GND PROX/FLAP OVRD SWITCH, S603, TO GROUND (WDM 34-46-12). REPAIR THE PROBLEMS THAT YOU FIND. 1

NO →

87 CONNECT CONNECTOR D5305P, ON THE P3-1 PANEL (WDM 34-46-12).
REPLACE THE LEFT FLAP/STAB POSITION MODULE, M838 (AMM 27-58-01/401). 1

3 THE ISOLATION DIODES ARE LOCATED BETWEEN CONNECTORS D5277 AND D2672. MAKE SURE THE DIODES' POLARITY IS CORRECT.

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 5)

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FAILURE INDICATION	REFER TO SHT-BLOCK
AIRCRAFT TYPE INVALID	13-23
AIR DATA INACTIVE	7-8
AIR/GROUND INVALID	13-21
AUDIO SELECT INVALID	13-22
BARO ALTITUDE INVALID	7-9
BARORATE INVALID	7-9
BODY PITCH RATE INVALID	10-16
CALLOUTS OPTION INVALID	14-24
COMPUTED AIRSPEED INVALID	7-9
CORRECTED BARO ALTITUDE INVALID	7-9
CORRECTED AOA #1 INVALID	11-18
CORRECTED AOA #2 INVALID	11-18
DSW #1 DATA INACTIVE	11-17
DSW #2 DATA INACTIVE	11-17
EFS DATA INACTIVE	7-9A
FLAP ANGLE #1 INVALID	11-18
FLAP ANGLE #2 INVALID	11-18
FLAPS INVALID	3-38
FLIGHT PATH ACCEL INVALID	10-16
FMC DATA INACTIVE	8-10
FMC LATITUDE INVALID	8-11
FMC LONGITUDE INVALID	8-11
FMC MAG TRACK INVALID	8-11
GEAR INVALID	3-37
GLIDESLOPE CANCEL INVALID	9-14
GLIDESLOPE INVALID	9-13
GPWS FAILED	7-7
ILS DATA INACTIVE	9-12
INDICATED AOA #1 INVALID	11-18
INDICATED AOA #2 INVALID	11-18
INERTIAL ALTITUDE INVALID	10-16
INERTIAL VERTICAL SPEED INVALID	10-16
IRS DATA INACTIVE	10-15
IRS LATITUDE INVALID	10-16
IRS LONGITUDE INVALID	10-16
IRS MAG TRACK INVALID	10-16
IRS MODE INVALID	10-16
LOCALIZER INVALID	9-13
PITCH ANGLE INVALID	10-16
QFE SELECTED	14-25
RADIO ALTIMETER DATA INACTIVE	12-19
RADIO ALTITUDE INVALID	13-20
ROLL ANGLE INVALID	10-16
RUNWAY HEADING INVALID	9-13
STICK SHAKER AOA #1 INVALID	11-18
STICK SHAKER AOA #2 INVALID	11-18
TRUE AIRSPEED INVALID	7-9

TABLE A

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 6)

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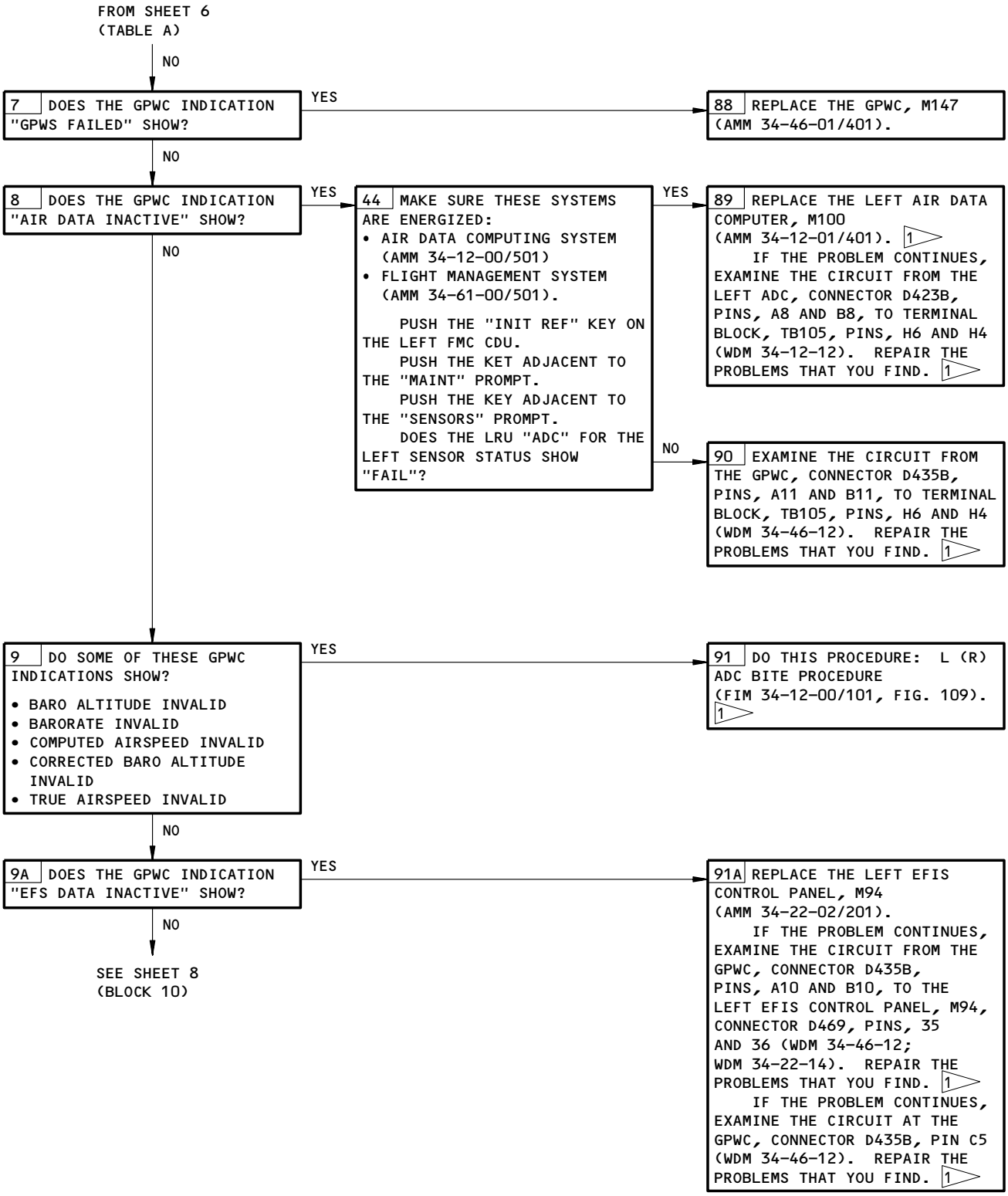

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 7)

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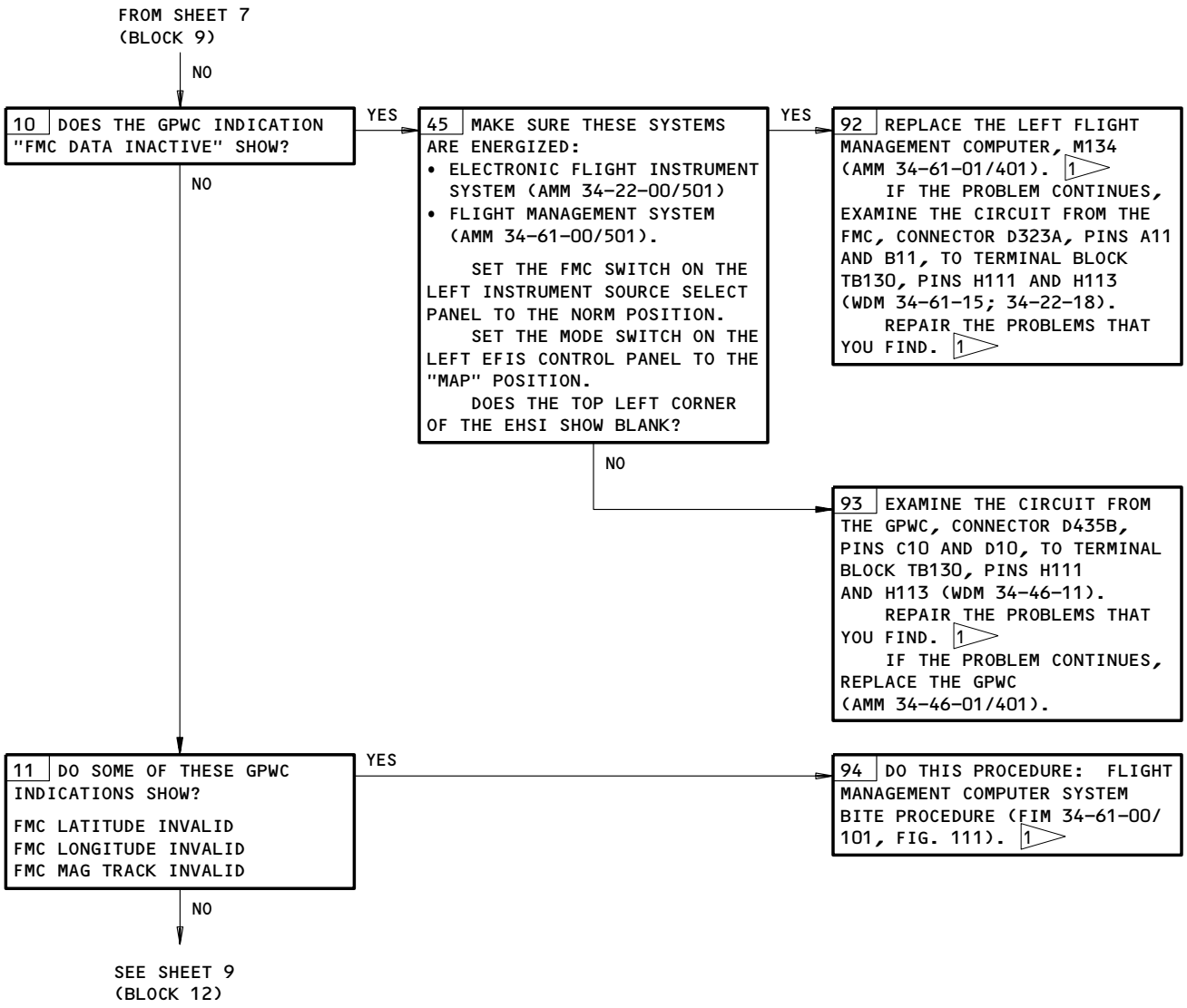

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 8)

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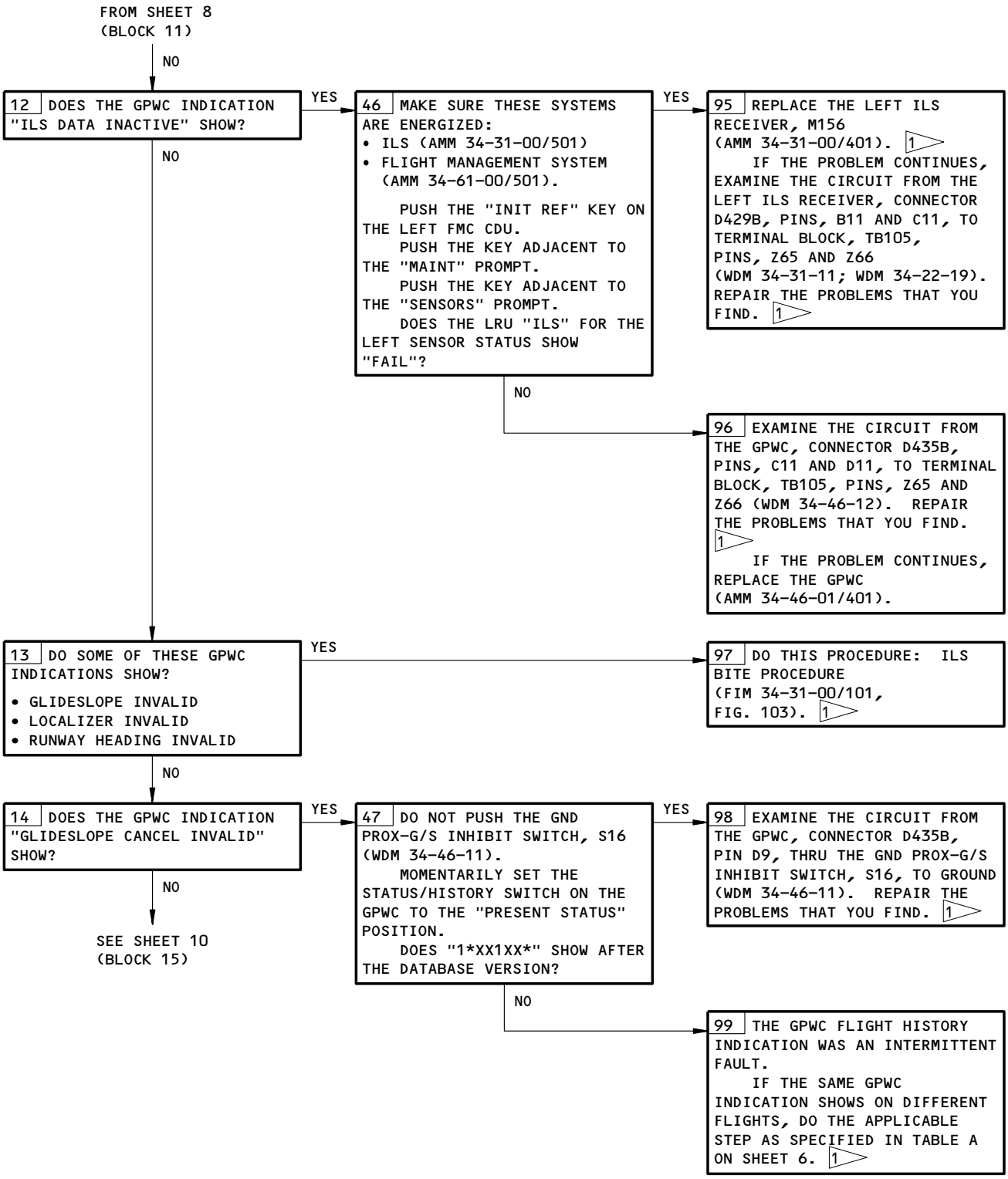

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 9)

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FROM SHEET 9
(BLOCK 14)

NO

15 DOES THE GPWC INDICATION "IRS DATA INACTIVE" SHOW?

YES

48 MAKE SURE THESE SYSTEMS ARE ENERGIZED:
- INERTIAL REFERENCE SYSTEM (AMM 34-21-00/501)
- FLIGHT MANAGEMENT SYSTEM (AMM 34-61-00/501).

PUSH THE "INIT REF" KEY ON THE LEFT FMC CDU.
PUSH THE KEY ADJACENT TO THE "MAINT" PROMPT.
PUSH THE KEY ADJACENT TO THE "SENSORS" PROMPT.
DOES THE LRU "ILS" FOR THE LEFT SENSOR STATUS SHOW "FAIL"?

YES

100 REPLACE THE LEFT INERTIAL REFERENCE UNIT, M159 (AMM 34-21-01/401). 1
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE IRU, CONNECTOR D367B, PINS C10 AND C11, TO TERMINAL BLOCK TB161, PINS G2 AND G1 (WDM 34-61-12).
REPAIR THE PROBLEMS THAT YOU FIND. 1

NO

101 EXAMINE THE CIRCUIT FROM THE GPWC, CONNECTOR D435B, PINS A6 AND B6, TO TERMINAL BLOCK TB161, PINS G2 AND G1 (WDM 34-46-12).
REPAIR THE PROBLEMS THAT YOU FIND. 1
IF THE PROBLEM CONTINUES, REPLACE THE GPWC (AMM 34-46-01/401).

NO

16 DO SOME OF THESE GPWC INDICATIONS SHOW?

BODY PITCH RATE INVALID
FLIGHT PATH ACCEL INVALID
INERTIAL ALTITUDE INVALID
INERTIAL VERTICAL SPEED INVALID
IRS LATITUDE INVALID
IRS LONGITUDE INVALID
IRS MAG TRACK INVALID
IRS MODE INVALID
PITCH ANGLE INVALID
ROLL ANGLE INVALID

YES

102 DO THIS PROCEDURE:
IRS BITE TEST (FIM 34-21-00/101, FIG. 107). 1

NO

SEE SHEET 11
(BLOCK 17)

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 10)

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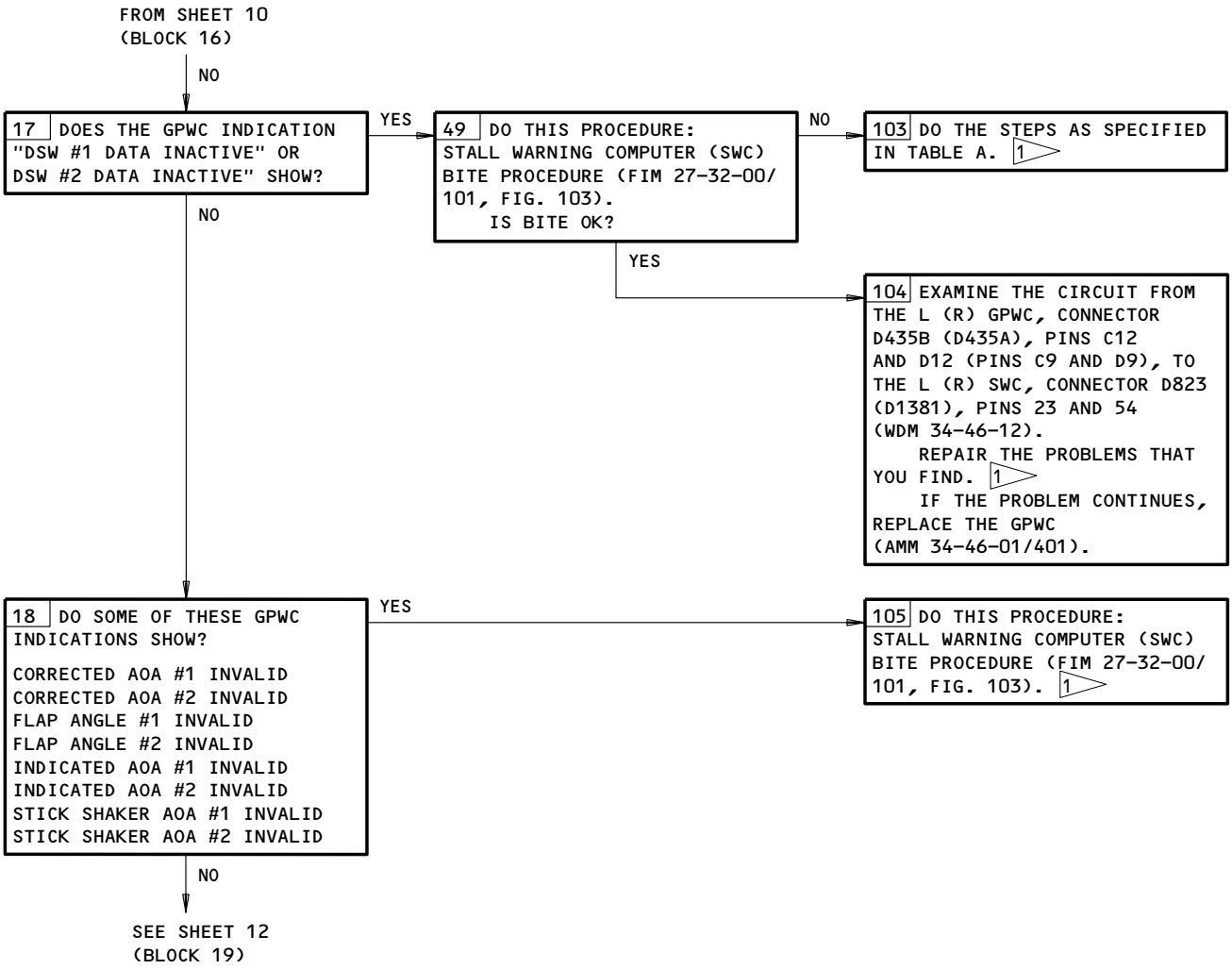

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 11)

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FROM SHEET 11
(BLOCK 18)

NO

19 DOES THE GPWC INDICATION "RADIO ALTIMETER DATA INACTIVE" SHOW?

YES

NO

SEE SHEET 13
(BLOCK 20)

50 MAKE SURE THESE SYSTEMS ARE ENERGIZED:
- ELECTRONIC FLIGHT INSTRUMENT SYSTEM (EFIS) (AMM 34-22-00/501)
- RADIO ALTIMETER SYSTEM (AMM 34-33-00/501).

IS THERE A YELLOW "RA" FLAG IN PLACE OF A NUMBER READOUT IN THE CORNER OF THE CAPTAIN'S EADI?

YES

NO

106 AIRPLANES WITH -209 GPWC AND PREVIOUS;
REPLACE THE LEFT RADIO ALTIMETER R/T UNIT, M202 (AMM 34-33-01/401). 1

AIRPLANES WITH -210 GPWC;
REPLACE THE LEFT (RIGHT, CENTER) RADIO ALTIMETER R/T UNIT, M202 (M203, M204) (AMM 34-33-01/401). 1

AIRPLANES WITH -209 GPWC AND PREVIOUS;
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE RA, CONNECTOR D401B, PIN G2 AND PIN G3, TO TERMINAL BLOCK TB130, PIN G27 AND PIN G28 OR PIN H121 AND PIN H123 (WDM 34-33-11). REPAIR THE PROBLEMS THAT YOU FIND. 1

AIRPLANES WITH -210 GPWC;
IF THE PROBLEM CONTINUES, EXAMINE THE CIRCUIT FROM THE RA, CONNECTOR D401B (D403B, D405B), PIN G2 AND PIN G3, TO TERMINAL BLOCK TB130 (TB119, TB127), PIN Z123 AND PIN Z124 (PIN YA10 AND PIN YC10, PIN Z15 AND PIN Z16) (WDM 34-33-11,-21,-31; WDM 34-22-29; WDM 34-22-39). REPAIR THE PROBLEMS THAT YOU FIND. 1

107 AIRPLANES WITH -209 GPWC AND PREVIOUS;
EXAMINE THE CIRCUIT FROM THE GPWC, CONNECTOR D435B, PIN A13 AND PIN B13, TO TERMINAL BLOCK TB130, PIN G27 AND PIN G28 OR PIN H121 AND PIN H123 (WDM 34-46-11). REPAIR THE PROBLEMS THAT YOU FIND. 1

AIRPLANES WITH -210 GPWC;
EXAMINE THE CIRCUIT FROM THE GPWC, CONNECTOR D435B (D435A, D435B), PIN A13 AND PIN B13 (PIN A8 AND PIN B8, PIN A12 AND PIN B12), TO TERMINAL BLOCK TB130 (TB119, TB127), PIN Z123 AND PIN Z124 (PIN YA10 AND PIN YC10, PIN Z15 AND PIN Z16) (WDM 34-46-11). REPAIR THE PROBLEMS THAT YOU FIND. 1

IF THE PROBLEM CONTINUES, REPLACE THE GPWC (AMM 34-46-01/401).

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 12)

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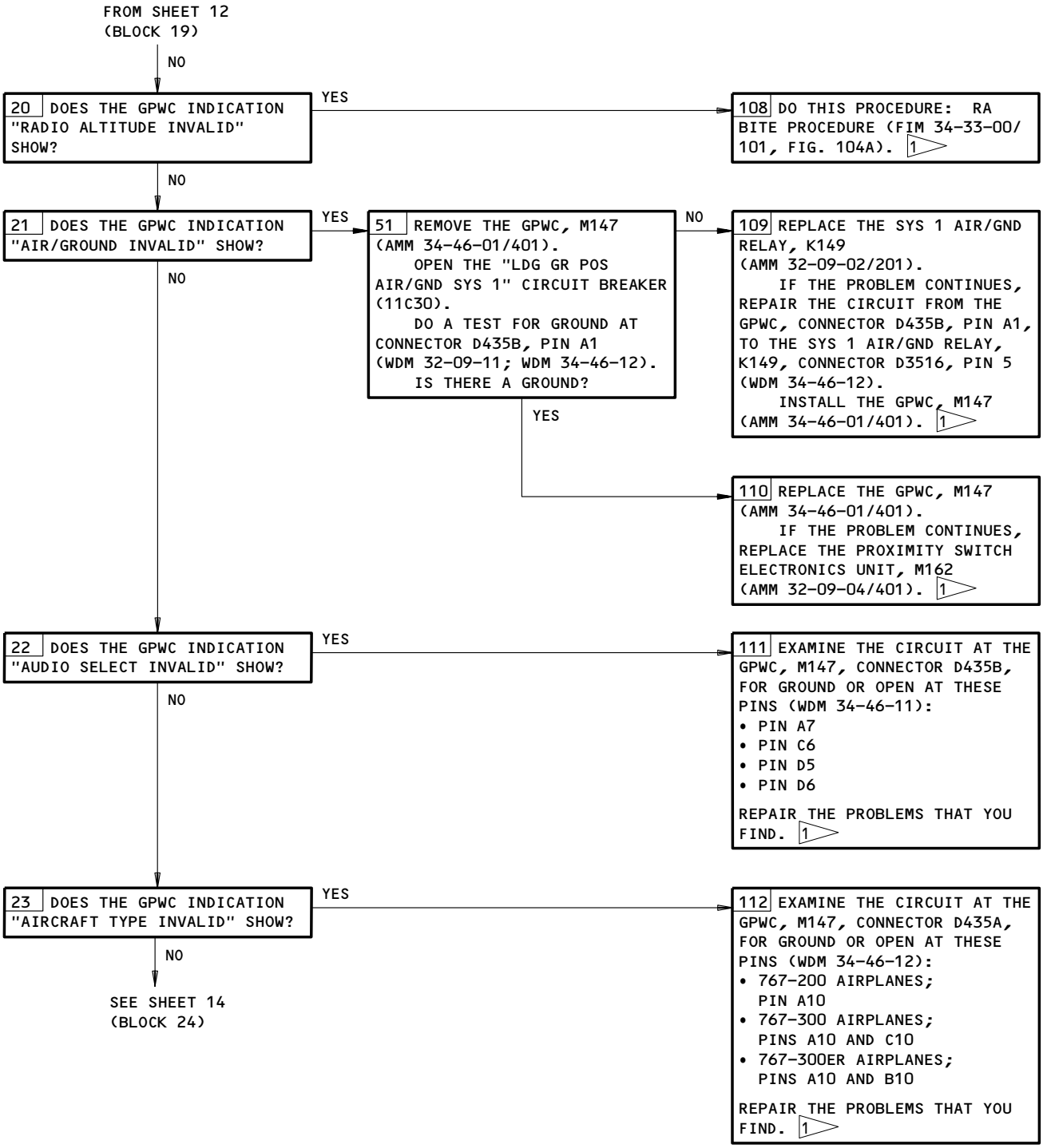

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 13)

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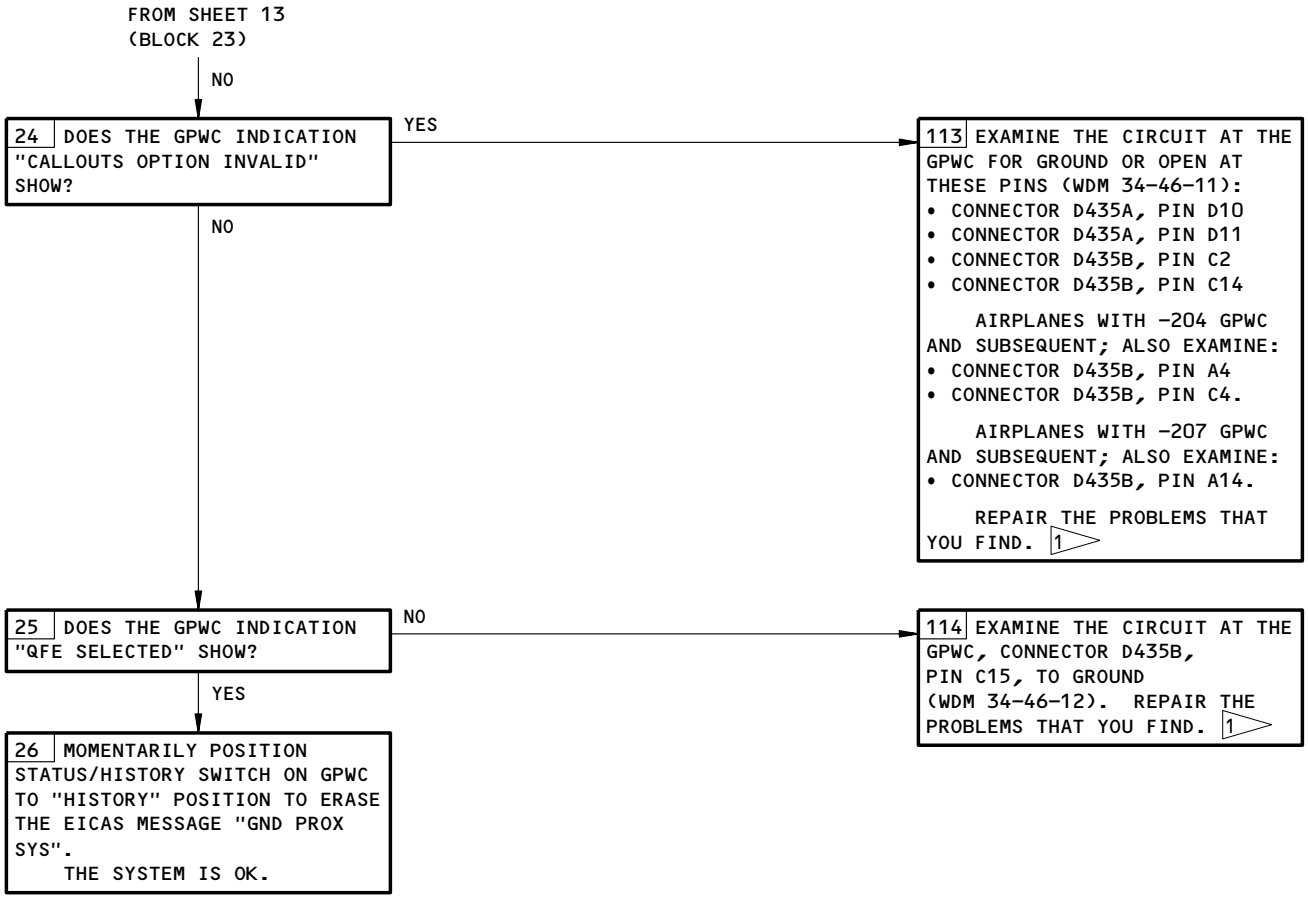

Ground Proximity Warning Computer BITE Procedure
Figure 103 (Sheet 14)

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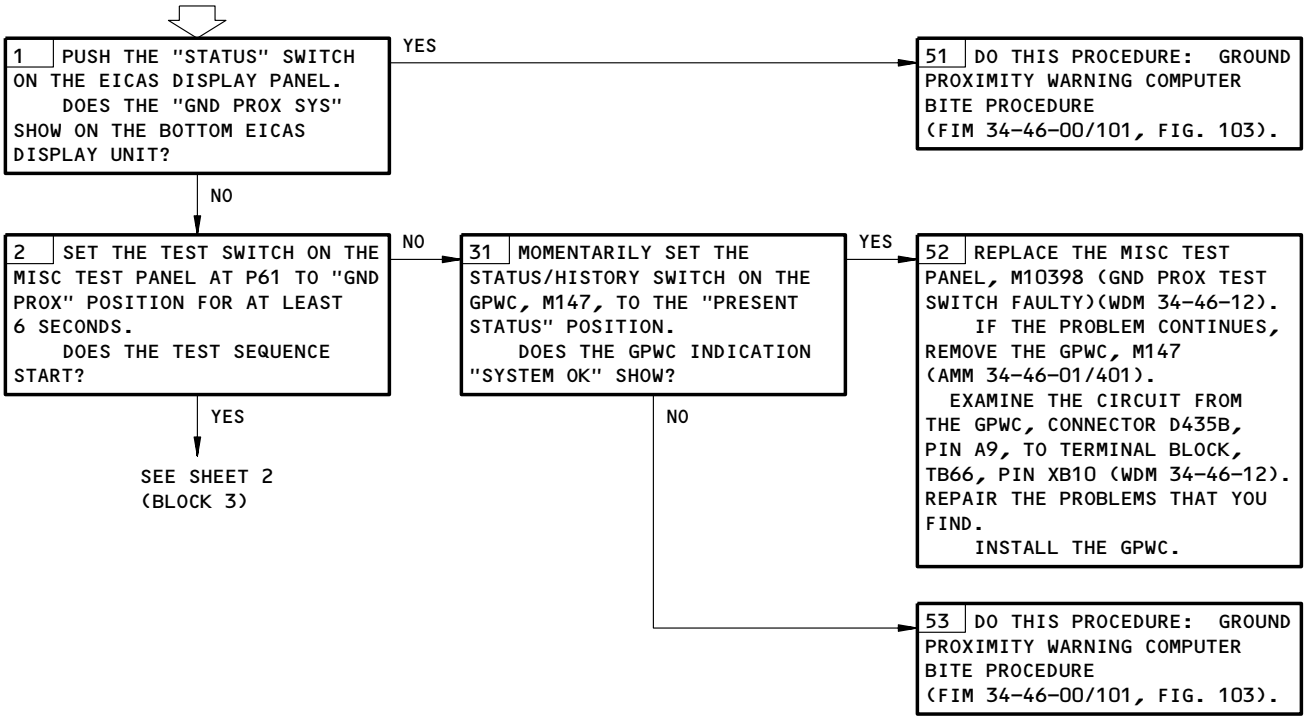
GROUND PROXIMITY WARNING SYSTEM SELF-TEST

PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- STALL WARNING COMPUTER (AMM 27-32-00/501)
- ENGINE INDICATING AND CREW ALERTING SYSTEM (AMM 31-41-00/501)
- WARNING SYSTEM (AMM 31-51-00/501)
- AIR DATA COMPUTING SYSTEM (AMM 34-12-00/501)
- INERTIAL REFERENCE SYSTEM (AMM 34-21-00/501)
- ELECTRONIC FLIGHT INSTRUMENT SYSTEM (EFIS) (AMM 34-22-00/501)
- ILS (AMM 34-31-00/501
- RADIO ALTIMETER SYSTEM (AMM 34-33-00/501)
- FLIGHT MANAGEMENT SYSTEM (AMM 34-61-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11B16, 11B18, 11F4, 11H35, 11J34

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



Ground Proximity Warning System Self-Test
Figure 104 (Sheet 1)

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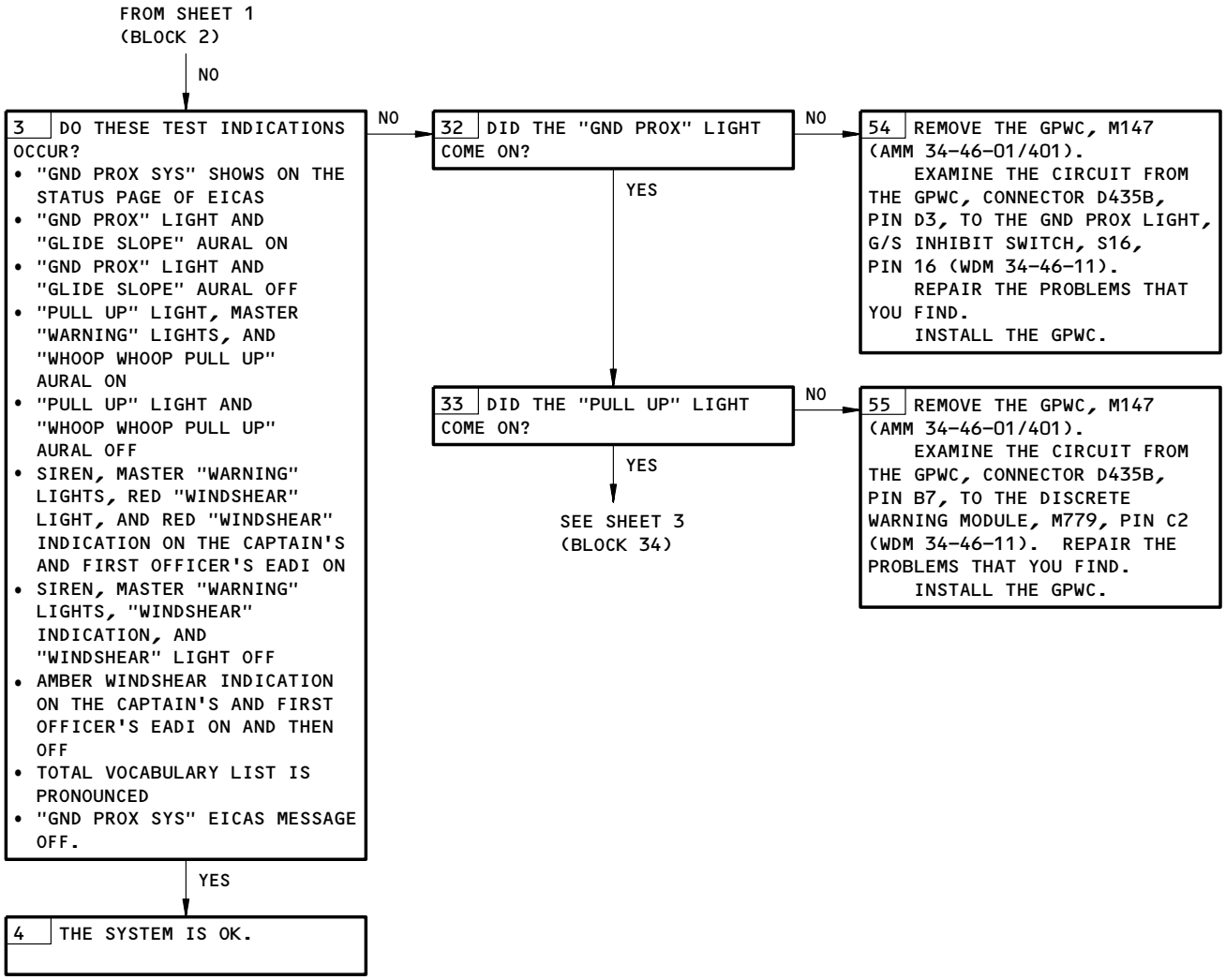

Ground Proximity Warning System Self-Test
Figure 104 (Sheet 2)

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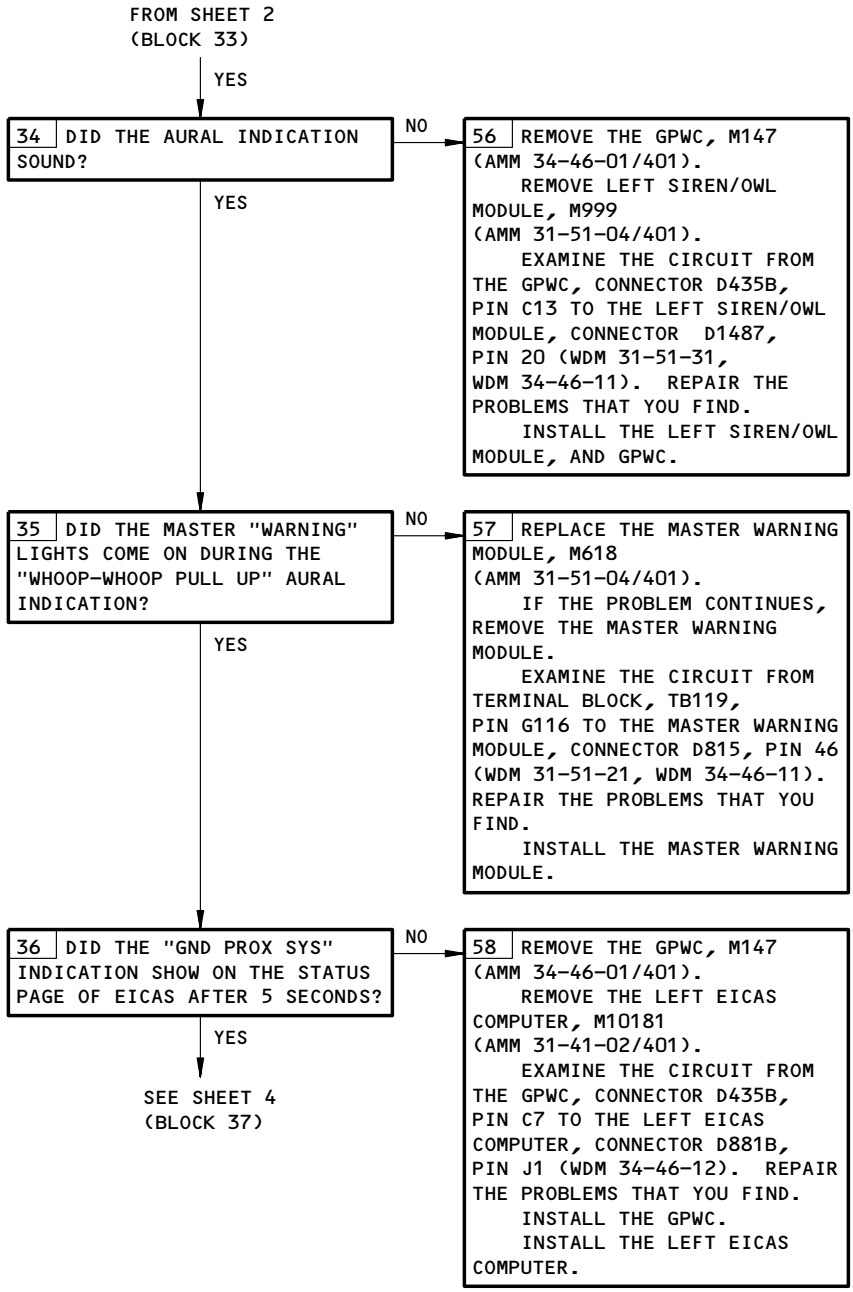

Ground Proximity Warning System Self-Test
Figure 104 (Sheet 3)

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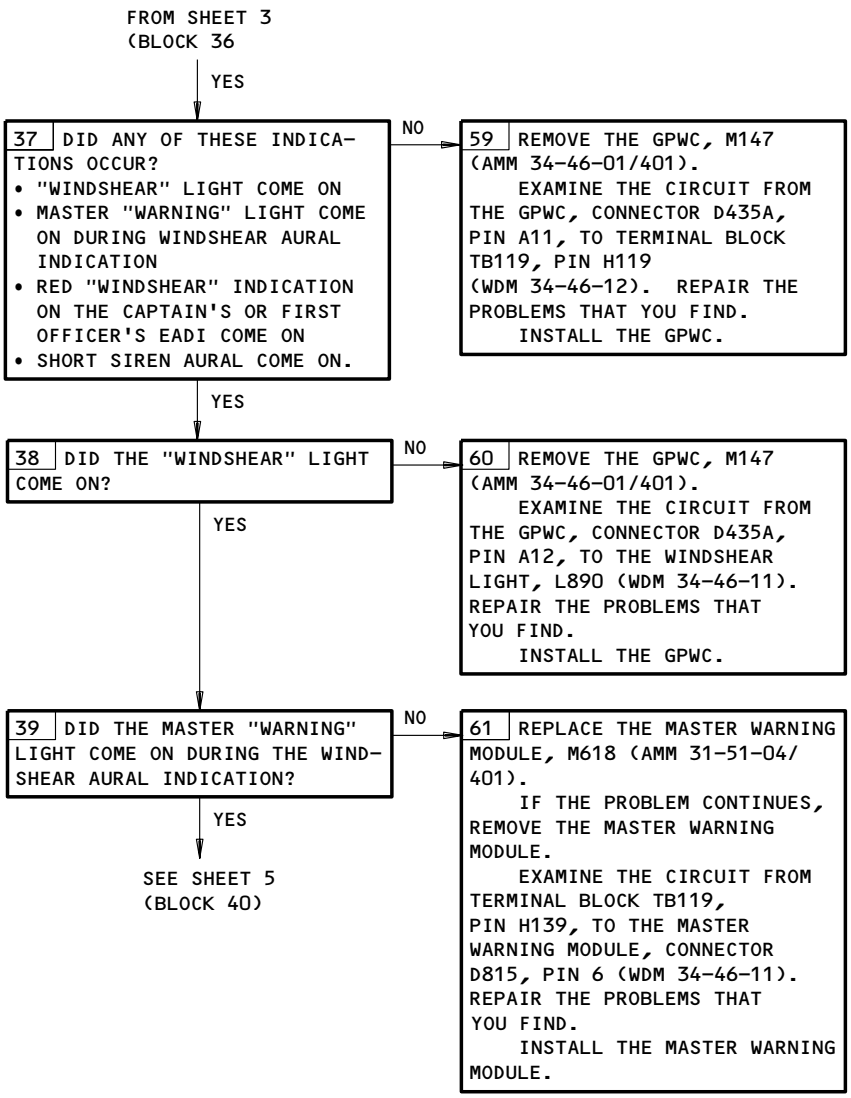

Ground Proximity Warning System Self-Test
Figure 104 (Sheet 4)

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FROM SHEET 4
(BLOCK 39)

YES

40 DID THE RED "WINDSHEAR" INDICATION SHOW ON THE CAPTAIN'S EADI?

NO → **62** REPLACE THE LEFT EFIS SYMBOL GENERATOR, M148 (AMM 34-22-01/401).
IF THE PROBLEM CONTINUES, REMOVE THE LEFT EFIS SYMBOL GENERATOR.
EXAMINE THE CIRCUIT FROM TERMINAL BLOCK TB119, PIN H139, TO THE LEFT EFIS SYMBOL GENERATOR, CONNECTOR D425A, PIN C14 (WDM 34-46-11; 34-22-16). REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE LEFT EFIS SYMBOL GENERATOR.

YES

41 DID THE RED "WINDSHEAR" INDICATION SHOW ON THE FIRST OFFICER'S EADI?

NO → **63** REPLACE THE RIGHT EFIS SYMBOL GENERATOR, M150 (AMM 34-22-01/401).
IF THE PROBLEM CONTINUES, REMOVE THE RIGHT EFIS SYMBOL GENERATOR.
EXAMINE THE CIRCUIT FROM TERMINAL BLOCK TB119, PIN H139, TO THE RIGHT EFIS SYMBOL GENERATOR, CONNECTOR D373A, PIN C14 (WDM 34-46-11; 34-22-26). REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE RIGHT EFIS SYMBOL GENERATOR.

YES

42 DID THE AMBER "WINDSHEAR" INDICATION SHOW ON THE CAPTAIN'S OR FIRST OFFICER'S EADI?

NO → **64** REPLACE THE GPWC, M147 (AMM 34-46-01/401).
IF THE PROBLEM CONTINUES, REMOVE THE GPWC.
EXAMINE THE CIRCUIT FROM THE GPWC, CONNECTOR D435A, PIN B12, TO TERMINAL BLOCK TB119, PIN G110 (WDM 34-46-11). REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE GPWC.

YES

SEE SHEET 6
(BLOCK 43)

Ground Proximity Warning System Self-Test
Figure 104 (Sheet 5)

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FROM SHEET 5
(BLOCK 42)

YES

43 DID THE AMBER "WINDSHEAR" INDICATION SHOW ON THE CAPTAIN'S EADI?

NO

65 REPLACE THE LEFT EFIS SYMBOL GENERATOR, M148 (AMM 34-22-01/401).
IF THE PROBLEM CONTINUES, REMOVE THE LEFT EFIS SYMBOL GENERATOR.
EXAMINE THE CIRCUIT FROM TERMINAL BLOCK TB119, PIN G110, TO THE LEFT EFIS SYMBOL GENERATOR, CONNECTOR D425A, PIN D14 (WDM 34-46-11; 34-22-16). REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE LEFT EFIS SYMBOL GENERATOR.

YES

66 REPLACE THE RIGHT EFIS SYMBOL GENERATOR, M150 (AMM 34-22-01/401).
IS THE PROBLEM CONTINUES, REMOVE THE RIGHT EFIS SYMBOL GENERATOR.
EXAMINE THE CIRCUIT FROM TERMINAL BLOCK TB119, PIN G110, TO THE RIGHT EFIS SYMBOL GENERATOR, CONNECTOR D373A, PIN D14 (WDM 34-46-11; 34-22-26). REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE RIGHT EFIS SYMBOL GENERATOR.

Ground Proximity Warning System Self-Test
Figure 104 (Sheet 6)

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1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR YOU CAN CAUSE DAMAGE TO THE CONNECTORS.

      (1) The ARINC 429 data bus charts give data necessary to make an analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminal or at the LRU connectors.
SAS   (2) The SAS data was changed to show only the -207 GPWC and subsequent
SAS   per SAS COC No. PR 34-01-96, dated September 20, 1996.
   B. Equipment
      (1) Standard multi-meter
      (2) 429EBP Data Bus Analyzer (recommended)
          JcAIR Instrumentation
          400 Industrial Parkway
          Industrial Airport, KS 66031

          429-2 Data Bus Analyzer (alternative)
          Interface Technology
          150 E. Arrow Highway
          San Dimas, CA 91773
      (3) A34011-1 Breakout Box (recommended)
          A34011-112 Breakout Box (alternative)

GPWC DIGITAL OUTPUT BUS CHART							
BUS NAME SOURCE	TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
GPWC	A	1	B	C01 D01	429	LO	WARN MODE & MAINT

GPWC(ID = 23) OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
WARNING MODE+MAINT	A	270	DIS	12.5	00	N/A	N/A	N/A

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GPWC DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
SINK RATE	270	11	TRUE	NOT TRUE
PULL UP	270	12	TRUE	NOT TRUE
TERRAIN	270	13	TRUE	NOT TRUE
DON'T SINK	270	14	TRUE	NOT TRUE
TOO LOW GEAR	270	15	TRUE	NOT TRUE
TOO LOW FLAP	270	16	TRUE	NOT TRUE
TOO LOW TERRAIN	270	17	TRUE	NOT TRUE
GLIDESLOPE	270	18	TRUE	NOT TRUE
MINIMUMS	270	19	TRUE	NOT TRUE
TERRAIN PULL UP	270	20	TRUE	NOT TRUE
TOO LOW TERRAIN	270	22	TRUE	NOT TRUE
WIND SHEAR	270	23	TRUE	NOT TRUE

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SAS ENHANCED GROUND PROXIMITY WARNING SYSTEM - TROUBLE SHOOTING
SAS
SAS 1. General
SAS A. Overview
SAS (1) The EGPWC contains extensive Built In Test or BIT capability. The
SAS BIT functions provide high confidence that the Warning Computer and
SAS interface signal sources are operating properly and that the EGPWS
SAS will perform its intended function. Detected failures are indicated
SAS via the GND PROX SYS EICAS message and Terrain INOP lights and by
SAS the ARINC 429 output. Failures detected during flight are saved in
SAS the flight history and are annunciated during Level 4 of the cockpit
SAS self test. BIT status is also available through the RS-232 port by
SAS use of a PC, terminal or during ATP.
SAS B. EGPWS BITE
SAS (1) The EGPWC BITE is comprised of three types of functions: Operation
SAS Monitoring, Operational Tests, and Restricted Tests.
SAS (a) Operation Monitoring
SAS 1) Operation Monitoring consists of software checks that are
SAS performed as part of the normal Warning Computer
SAS processing. Operational Monitoring includes checks of data
SAS values and program flow control variables used for the
SAS warning computations to ensure they are within expected
SAS ranges. The status of various EGPWC hardware sub-systems
SAS is continuously verified and includes core processor
SAS checks, voice generator circuitry checks and ARINC 429
SAS wrap-around tests. Operational Monitoring also includes
SAS extensive testing of the input signals to ensure the EGPWC
SAS is using proper data for its calculations.
SAS (b) Operation Tests
SAS 1) Operation Tests are run during normal operation and do not
SAS disrupt the EGPWC warning calculations or annunciations.
SAS Operations Tests include CPU instruction set tests, A/D
SAS tolerance tests, ROM check-sum verification tests and
SAS non-destructive RAM tests. Operation Tests are scheduled
SAS by the operating system to be performed between the
SAS routines required for normal operation.
SAS (c) Restricted Tests
SAS 1) Restricted Tests destroy data or take an excessive amount
SAS of time to complete and cannot be used during normal system
SAS operation. These tests are usually run during system power
SAS up or during a cockpit initiated self test. These tests
SAS primarily consist of more thorough hardware checks that
SAS would disrupt normal operation if continuously run.

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SAS (d) EGPWC Front Panel
SAS 1) To aid in troubleshooting the EGPWC, the front panel of the Warning Computer contains EGPWS Status LED's, a Self Test interface, a PCMCIA interface, and a test plug.
SAS (e) EGPWS Status LED's
SAS 1) The EGPWC front panel Status LED's consist of three LED's - a yellow External Fault LED, a green Computer OK LED and a red Computer Fail LED. The yellow External Fault LED indicates that a fault external to the EGPWC exists. All external faults should be fixed prior to removing and replacing the EGPWC. The green Computer OK LED indicates that the EGPWC is operating correctly with no internal faults. The red Computer Fail LED indicates that the EGPWC has an internal fault.
SAS (f) Self Test Interface
SAS 1) The EGPWC front panel self test interface consists of a self test switch and a headphone jack which can be used to activate all of the self test features. The front panel audio jack is a standard 600Ω monophonic audio output compatible with standard 2-connector audio plug headphones.
SAS (g) Front Panel PCMCIA Interface
SAS 1) The EGPWC front panel PCMCIA interface allows data upload and download capabilities. Instructions on the use of the PCMCIA interface will be supplied in the Service Bulletin accompanying the software update.
SAS (h) Front Panel Test Plug (RS-232 Port)
SAS 1) The EGPWC front panel test plug (RS-232 port) provides various communications support capabilities, discretes used for file downloading and power outputs for a portable data loader. This port serves as access to signal monitoring, flight history, initiating BITE tests, updating databases and other functions. The interface is full duplex and is intended for human interaction, but can also be used for custom interface programs such as the Honeywell WinVIEWS utility.
SAS (i) The procedures that follow assume that all the wiring is OK.
SAS 1) If the corrective action does not correct the failure, use the appropriate wiring diagram to make sure all wiring and connections are correct.
SAS C. Prepare for Troubleshooting
SAS (1) Supply electrical power (AMM 24-22-00/201).
SAS (2) Make sure these circuit breakers on the P11 Panel are closed:
SAS (a) 11F4, GND PROX
SAS (b) 11F3, TERR DSPL
SAS (c) 11F5, Left RAD ALTM
SAS (d) 11F20, Center RAD ALTM

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SAS (e) 11F26, Right RAD ALTM
SAS (f) 11A10, Left AIR DATA CMPTR
SAS (g) 11E10, Left ILS
SAS (h) 11E9, Left FMCS CMPTR
SAS (i) 11J34, WARN ELEX A
SAS (j) 11B18, WARN ELEX B
SAS (k) 11F8, Left EFIS SYM GEN
SAS (l) 11F9, Center EFIS SYM GEN
SAS (m) 11F29, Right EFIS SYM GEN
SAS (n) 11E4, Left EFIS CONT PNL
SAS (o) 11E25, Right EFIS CONT PNL
SAS (p) 11E6, Left HSI
SAS (q) 11E27, Right HSI
SAS (3) Make sure the Left and Right IRU are in the NAV mode and aligned
SAS (AMM 34-21-00/201).
SAS (4) Make sure that the flaps are up, and that the landing gear lever is
SAS in the OFF or DN position.
SAS (5) Set a valid ILS frequency on both ILS's and then make sure that the
SAS GS flag on captain's EADI is out of view.
SAS D. Self Test Function
SAS (1) The EGPWC support a cockpit operated self test sequence that
SAS indicates the operational status of the system. The self test aural
SAS annunciate the status of the major functions of the system:
SAS Glideslope, GPWS, Bank Angle, Altitude Callouts, Windshear Detection
SAS and Terrain Awareness and activates the outputs (lights and
SAS displays) for visual verification. The EGPWC self test also
SAS provides maintenance information detailing the cause of detected
SAS faults, historical information of faults and warnings occurring
SAS during flight, and EGPWC and installation configuration information.
SAS The self test aural will be heard in the cockpit and through the
SAS headphone jack on the EGPWC front panel.
SAS E. The EGPWC self test is divided into six levels:
SAS (1) Level 1 - Enunciates the current status of each of the major
SAS functions of the EGPWS. This is the normal pre-takeoff test
SAS performed by the flight crew. This level can be initiated both on
SAS the ground and during flight above 1000 feet of radio altitude.
SAS There is a short and a long Level 1 test. The short test is
SAS intended to provide a go/no go confidence test. The long test
SAS enunciates all configured and activated warning, caution and
SAS altitude callout voices. The long Level 1 test can be only
SAS initiated on ground.
SAS (2) Level 2 - Identifies all failures current within the system. Level
SAS 2 is accessed by maintenance personnel to help resolve INOP
SAS conditions. Level 2 can only be accessed on the ground.

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SAS (3) Level 3 — Identifies the configuration status of the Warning Computer and the installation. Level 3 can only be accessed on the ground.
SAS (4) Level 4 — Enunciates faults that have occurred during past flights. This information can be used to resolve system problems reported by the flight crews. Level 4 can only be accessed on the ground.
SAS (5) Level 5 — Enunciates warnings that have occurred during past flights. This information can be used to resolve system problems reported by the flight crews. Level 5 can only be accessed on the ground.
SAS (6) Level 6 — Enunciates state changes in the input discretes. This information can be used to verify the installation and operation of the discrete inputs. Level 6 can only be accessed on the ground.
SAS F. The following sections detail the operation of each self test level.
SAS
SAS NOTE: In the following sections, reference is made to a "short cancel" and a "long cancel". A "short cancel" is defined as depressing the self test switch (either in the cockpit or on the EGPWC front panel) for less than 2 seconds. A "long cancel" is defined as depressing the self test switch for more than 2 seconds.
SAS
SAS (1) Self Test Level 1
SAS (a) Level 1 testing enunciates the current status of each of the major functions of the EGPWS: Descent below glideslope, GPWS, bank angle protection, altitude callouts, windshear detection, and terrain awareness.
SAS (b) The Level 1 self test is comprised of three parts: preamble, short test and long test.
SAS (c) The preamble and short test portion of the Level 1 test is initiated by momentarily pressing the GND PROX test switch.
SAS (d) The long test portion is initiated by depressing the GND PROX test switch for a period between 2 and 5 seconds.
SAS (e) The Level 1 test can only be initiated when the aircraft is on the ground or if radio altitude is greater than 1000 feet radio altitude.
SAS (f) All interfacing systems should be powered on and operating prior to conducting a Level 1 self test.

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SAS (g) The Terrain Display must be placed in a mode, which will allow the terrain display to be shown (e.g. Map mode) prior to starting the test in order to see the Terrain Display test pattern, requiring the selection of "WXR/TERR" prior to starting the test. The WXR should be placed in TEST mode.

1) Preamble – The preamble checks the program pin connections and the internal memory prior to starting the self test. If any faults are detected, the self test will ennunciate the detected fault and terminate the self test process.

2) Short Test – The short self test is initiated holding the GND PROX test switch in Test position for less than 2 seconds. The normal Level 1 short self test sequence is as follows:

a) GND PROX SYS EICAS message and Terrain INOP light turn on
b) GND PROX light turn on
c) Voice: "GLIDESLOPE"
d) GND PROX light turn off
e) GPWS PULL UP light turns on
f) Voice: "PULL UP"
g) GPWS PULL UP light turn off
h) WINDSHEAR light turns on and red WINDSHEAR annunciation is displayed on the Captain's and F/O's EADI's
i) Voice: (SIREN) "WINDSHEAR, WINDSHEAR, WINDSHEAR"
j) WINDSHEAR light and EADI WINDSHEAR annunciations turn off
k) Amber WINDSHEAR annunciation is displayed on the EADI's
l) Amber WINDSHEAR annunciations turn off
m) GPWS PULL UP light turns on
n) Voice: "TERRAIN TERRAIN PULL UP"
o) GPWS PULL UP light turn off
p) Captain's and F/O's TERR select switch ON legend is illuminated
q) Terrain Displays show terrain test pattern
r) GND PROX light turn on
s) GND PROX light turn off
t) Terrain Displays return to normal
u) ALL INOP lights and EICAS messages turn off

3) Long Test

a) The long self test enunciates all activated alert voices, including warning, caution and altitude callout voices.
b) The long self test is initiated by holding the GND PROX test switch in Test position for more than 2 seconds.
1. GND PROX SYS EICAS message and Terrain INOP light turn on

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SAS 2. GND PROX light turn on
SAS 3. Voice: "GLIDESLOPE"
SAS 4. GND PROX light turn off
SAS 5. GPWS PULL UP light turns on
SAS 6. Voice: "PULL UP"
SAS 7. GPWS PULL UP light turn off
SAS 8. WINDSHEAR light turns on and red WINDSHEAR
SAS annunciation is displayed on the Captain's and
SAS F/O's EADI's
SAS 9. Voice: (SIREN) "WINDSHEAR, WINDSHEAR, WINDSHEAR"
SAS 10. WINDSHEAR light and EADI WINDSHEAR annunciations
SAS turn off
SAS 11. Amber WINDSHEAR annunciation is displayed on the
SAS EADI's
SAS 12. Amber WINDSHEAR annunciations turn off
SAS 13. GPWS PULL UP light turns on
SAS 14. Voice: "TERRAIN TERRAIN PULL UP"
SAS 15. GPWS PULL UP light turn off
SAS 16. Captain's and F/O's TERR select switch ON legend is
SAS illuminated
SAS 17. Terrain Displays show terrain test pattern
SAS 18. GND PROX light turn on
SAS 19. GND PROX light turn off
SAS 20. Voice: "SINKRATE"
SAS 21. Voice: "PULL UP"
SAS 22. Voice: "TERRAIN"
SAS 23. Voice: "PULL UP"
SAS 24. Voice: "DON'T SINK DON'T SINK"
SAS 25. Voice: "TOO LOW TERRAIN"
SAS 26. Voice: "TOO LOW GEAR"
SAS 27. Voice: "TOO LOW FLAPS"
SAS 28. Voice: "TOO LOW TERRAIN"
SAS 29. Voice: "GLIDESLOPE"
SAS 30. Voice: "BANK ANGLE BANK ANGLE"
SAS 31. Voice: "PLUS HUNDRED"
SAS 32. Voice: "MINIMUMS"
SAS 33. Voice: "TWENTY FIVE HUNDRED"
SAS 34. Voice: "ONE THOUSAND"
SAS 35. Voice: "FIVE HUNDRED"
SAS 36. Voice: "FIFTY"
SAS 37. Voice: "FORTY"
SAS 38. Voice: "THIRTY"
SAS 39. Voice: "TWENTY"
SAS 40. Voice: "TEN"
SAS 41. Voice: (SIREN) "WINDSHEAR WINDSHEAR WINDSHEAR"
SAS 42. Voice: "TOO LOW TERRAIN"

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SAS 43. Voice: "CAUTION TERRAIN CAUTION TERRAIN"
SAS 44. Voice: "TERRAIN TERRAIN PULL UP"
SAS 45. Voice: "CAUTION OBSTACLE CAUTION OBSTACLE"
SAS 46. Voice: "OBSTACLE OBSTACLE PULL UP"
SAS 47. Terrain Displays return to normal
SAS 48. All INOP lights, switch legends and EICAS messages turn off
SAS 4) Voice Messages
SAS a) The Level 1 Self Test will detect and annunciate any current failure conditions, which affect the operation of the major EGPWS functions. The following table identifies the response for the faults annunciated during the test.

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SAS

VOICE MESSAGE	RESPONSE
Program Pin Parity Error	Probable error in writing for the program pins. Verify the program pins are wired correctly and configure the parity pin for ODD parity.
Aircraft Configuration Data Base CRC Failed	Remove and replace EGPWC.
Aircraft Configuration Data Base Failed	Remove and replace EGPWC.
Aircraft Type Invalid	Probable error in aircraft type program pins. Verify the aircraft type program pin connection.
Glideslope INOP	Perform a Level 2 self test to troubleshoot the problem.
GPWS INOP	Perform a Level 2 self test to troubleshoot the problem.
Bank Angle INOP	Perform a Level 2 self test to troubleshoot the problem.
Callouts INOP	Perform a Level 2 self test to troubleshoot the problem.
Windshear INOP	Perform a Level 2 self test to troubleshoot the problem.
Terrain INOP	Perform a Level 2 self test to troubleshoot the problem.
Internal GPS not navigating	Position information not available from GPS. See par. G.(1) for troubleshooting.
Response includes aural "Terrain Inhibited"	Indicates that the "Terrain Awareness and TCF Inhibit" input to the EGPWC is selected.

SAS

(2) Self Test Level 2

(a) A Level 2 self test tells the maintenance crew if there are any faults currently in the system.

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SAS (b) Level 2 is accessed while the aircraft is on the ground by
SAS pressing the GND PROX test switch within 3 seconds of the end
SAS of the Level 1 test or a short cancel during a Level 1 self
SAS test. The message "CURRENT FAULTS" will be enunciated when
SAS Level 2 starts. The Level 2 test is not accessible while
SAS airborne.
SAS (c) During the Level 2 self test, a short or a long cancel
SAS terminates the self test and "PRESS TO CONTINUE" is enunciated
SAS for proceeding to Level 3 self test.
SAS (d) If no faults currently exist, the message "NO FAULTS" will be
SAS enunciated.
SAS (e) If a fault is detected, it will be classified as either an
SAS internal or external fault. Internal faults are defined as
SAS those faults that originate within the EGPWC. Internal faults
SAS will turn on the red COMPUTER FAIL LED on the EGPWC front
SAS panel. External faults are defined as those faults that
SAS originate from sources outside the EGPWC. External faults will
SAS turn on the amber EXTERNAL FAULT LED on the EGPWC front panel.
SAS 1) Internal Faults
SAS a) An internal fault indicates a problem with the Warning
SAS Computer. The system should be checked and the Warning
SAS Computer should be removed and replaced if required.
SAS The following figure lists the internal fault messages
SAS and the probable maintenance response.

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SAS

LEVEL 2 SELF TEST ANNUNCIATION - INTERNAL FAULTS (EXAMPLES)	
Annunciation	ROM FAILED RAM FAILED NVM RAM FAILED NVM FAILED WATCHDOG TIMER FAILED EXCESSIVE WATCHDOG TIMEOUTS FAILURE ANALOG CONVERTER FAILED VOICE GENERATOR FAILED ARINC 429 TRANSMITTER FAILED ARINC 429 RECEIVER FAILED APPLICATION DATABASE FAILED APPLICATION DATABASE CRC FAILED TERRAIN DATABASE FAILED ENVELOPE MODULATION DATABASE FAILED CONFIGURATION DATABASE FAILED SYSTEM OR MODE TASK FAILED SUPPORT TASK FAILED INTERNAL GPS FAILED
Probable Cause	EGPWC failure
Action	Remove and replace the EGPWC.

2) External Faults

a) ARINC 429 bus activity, ARINC 429 signal faults, input discrete monitoring, analog input wire monitoring and analog signal faults are categorized as external faults. The following figure lists the types of messages and the probable maintenance response required for an external fault. For example, if the computer airspeed on air data computer 1 is failed (SSM=Fail Warning) the following messages will be annunciated:

"CURRENT FAULTS"
"EGPWC OK"
"EXTERNAL FAULTS"
"AIR DATA BUS 1 COMPUTED AIRSPEED FAULT"
"PRESS TO CONTINUE"

LEVEL 2 SELF TEST ANNUNCIATION - EXTERNAL FAULTS (EXAMPLES)

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SAS

Annunciation	<BUS> Inactive
Example	ILS BUS 1 Inactive
Probable Cause	Input source is not powered or a wiring problem exists between the source LRU and the Warning Computer.
Action	Verify input source LRU is powered. Verify wiring from source to LRU.

Annunciation	<BUS> <SIGNAL> FAULT
Example	ILS BUS 1 GLIDESLOPE FAULT
Probable Cause	Input signal SSM = Fail Warning, or Input signal is not being transmitted (incorrect update rate).
Action	Repair input signal.

Annunciation	<BUS> WIRING FAULT
Example	RADIO ALTIMETER 1 WIRING FAULT
Probable Cause	Open wire monitor has detected no connection from the SOURCE LRU.
Action	Verify wiring from the LRU.

Annunciation	FLAP SWITCH FAULT
Probable Cause	Electrical short at the flap discrete input.
Action	Verify wiring from the flap override switch and/or flap input discretes.

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Annunciation	GEAR SWITCH FAULT
Probable Cause	Electrical short at the gear discrete input.
Action	Verify wiring from the gear override switch and/or gear input discretes.
Annunciation	GLIDESLOPE CANCEL INVALID
Probable Cause	Electrical short at the glideslope cancel input.
Action	Verify wiring from the glideslope cancel input.
Annunciation	FLAP ANGLE UNREASONABLE
Probable Cause	Electrical short at the flap discrete input(s).
Action	Verify wiring from the flap input discrete(s).
Annunciation	SELF TEST INVALID
Probable Cause	Electrical short at the self test input.
Action	Verify wiring from the self test discrete.
Annunciation	MOMENTARY TERRAIN SELECT 1 (OR 2) INVALID
Probable Cause	Electrical short at the Terrain Select input(s).
Action	Verify wiring from the terrain "ON" switches.

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SAS

Annunciation	PROGRAM PIN READ ERROR
Probable Cause	Wiring error to the program pins.
Action	Verify wiring to each program pin.
Annunciation	PROGRAM PIN PARITY ERROR
Probable Cause	Wiring error to the program pins.
Action	Verify wiring to each program pin. Verify ODD parity selected.
Annunciation	AIRCRAFT TYPE INVALID
Probable Cause	Wiring error to the Aircraft Type program pins.
Action	Verify wiring to the Aircraft Type program pins.
Annunciation	CALLOUTS OPTION INVALID
Probable Cause	Wiring error to the Callouts Options program pins.
Action	Verify wiring to the Callout Options program pins.
Annunciation	AUDIO MENU INVAID
Probable Cause	Wiring error to the Audio Menu program pins.
Action	Verify wiring to the Audio Menu program pins.

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SAS

Annunciation	PROGRAM PIN <XX> INVALID (where XX is a number)
Probable Cause	Invalid option selected.
Action	Verify wiring to all program pins.

SAS (3) Self Test Level 3

SAS (a) A Level 3 self test enunciates Warning Computer configuration information. This information is determined by the wiring of the program pins, from data stored in the computer ROM and by identification resistors on each of the internal circuit boards.

SAS (b) Level 3 is accessed while the aircraft is on the ground by pressing the GND PROX test switch within 3 seconds of the "PRESS TO CONTINUE" message at the end of the Level 2 test. The message "SYSTEM CONFIGURATION" will be enunciated when Level 3 starts.

SAS (c) During a Level 3 self test a short cancel bumps the enunciation to the next Level 3 item (e.g. from terrain database information to envelope modulation database information). A long cancel terminates the self test level and "PRESS TO CONTINUE" is enunciated for proceding to Level 4 self test.

SAS (d) The following information is given in the Level 3 self test:

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INFORMATION	VERIFICATION
EGPWC Part Number	See IPC or other approved source
EGPWC Serial Number	See identification label on unit
Application Software Number	Any number accepted
Configuration Software Version	Any number accepted
Envelope Modulation Database Version	Any number accepted
Aircraft Type	222
Altitude Callout Menu	97
EGPWC Mod Status	Any number accepted
Terrain Database Version	See IPC or other approved source
Boot Code Version	Any number accepted
Audio Menu	0
Internal GPS Selected	-
Triple Radio Altimeter Selected	-
Bank Angle Selected	-
Peaks Enabled	-
Mode 6 Low Volume Selected	-

(4) Self Test Level 4

(a) A Level 4 self test enunciates the faults recorded over the last 10 flight legs.

(b) A Level 4 self test can only be accessed on the ground by pressing the GND PROX test switch within 3 seconds of the "PRESS TO CONTINUE" message at the end of Level 3. The message "Fault History" is enunciated when Level 4 starts.

(c) During a Level 4 self test, a short cancel bumps to the next flight leg with faults (if any). A long cancel will terminate the self test level and "PRESS TO CONTINUE" will be enunciated for proceeding to Level 5 self test.

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SAS (d) If no faults occured within the previous 10 flight legs the
SAS message "NO FAULTS" will be given. If a fault did occur within
SAS the previous 10 flight legs, the aural messages enunciated
SAS would be the same as given in Level 2 with the added
SAS information of which flight leg the fault occurred. For
SAS example, if radio altimeter bus 1 failed 4 flights earlier the
SAS messages would be:
SAS
SAS "FLIGHT 4"
SAS "EGPWC OK"
SAS "EXTERNAL FAULTS"
SAS "RADIO ALTIMETER BUS 1 INACTIVE"
SAS "PRESS TO CONTINUE"
SAS
SAS NOTE: Flight 1 was the most recent flight.

SAS (5) Self Test Level 5
SAS (a) A Level 5 self test enunciates all the alerts (cautions and
SAS warnings) recorded over the last 10 flight legs.
SAS (b) A Level 5 self test can only be accessed on the ground by
SAS pressing the GND PROX test switch within 3 seconds of the
SAS "PRESS TO CONTINUE" message at the end of Level 4. The message
SAS "WARNING HISTORY" is enunciated when Level 5 starts.
SAS (c) During a Level 5 self test performing a short cancel bumps to
SAS the next flight leg with warnings (if any). A long cancel will
SAS terminate the self test level and "PRESS TO CONTINUE" will be
SAS enunciated for proceeding to Level 6 self test.
SAS (d) If no alerts were issued within the previous 10 flight legs the
SAS message "NO WARNINGS" will be enunciated. If an alert was
SAS given with the last 10 flight legs the flight leg and alert
SAS message will be enunciated. For example, if a glideslope alert
SAS was given 7 flight legs earlier the messages would be:
SAS
SAS "WARNING HISTORY"
SAS "FLIGHT 7"
SAS "GLIDESLOPE"
SAS "PRESS TO CONTINUE"
SAS (6) Self Test Level 6
SAS (a) A Level 6 self test enunciates any change in status of the
SAS discrete inputs for the selected aircraft type. This feature
SAS is provided for production aircraft testing of the discrete
SAS input wiring and is intended to match the maintenance display
SAS feature provided on the MK V front panel display.

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SAS (b) A Level 6 self test can only be accessed on the ground by
SAS pressing the GND PROX test switch within 3 seconds of the
SAS "PRESS TO CONTINUE" message at the end of Level 5. The message
SAS "DISCRETE INPUT TEST, PRESS TO CANCEL" is enunciated when Level
SAS 6 starts and will be repeated approximately every 60 seconds
SAS until the test is terminated.
SAS (c) A short or long cancel will terminate the self test level and
SAS the message "END OF SELF TEST" will be enunciated.
SAS (d) The Level 6 self test monitors each input discrete for a state
SAS change. If a state change occurs, the EGPWC will enunciate the
SAS functional name of the discrete followed by its new state. For
SAS example if the Glideslope Cancel discrete input is defined as
SAS GND = CANCEL, and the discrete transitions from OPEN to GND,
SAS the message "GLIDESLOPE CANCELLED" will be issued. If the
SAS input is reset (transitions from GND to OPEN), the message
SAS "GLIDESLOPE ENABLED" will be issued.
SAS (e) The following table defines the audio phrase for each input
SAS discrete. Note that not all of the discretes are used on all
SAS aircraft. The self test discrete cannot be tested in a Level 6
SAS self test.

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SAS

NAME	STATE ==>	AUDIO PHRASE
Capt TERR Switch *)	True => False =>	Display Discrete 1 True Display Discrete 1 False
F/O TERR Switch *)	True => False =>	Display Discrete 2 True Display Discrete 2 False
Capt WXR Switch *)	True => False =>	Weather Discrete 1 True Weather Discrete 1 False
F/O WXR Switch *)	True => False =>	Weather Discrete 1 True Weather Discrete 2 False
Landing Flaps Discrete or Flap Override	Selected => Not Selected =>	Landing Flaps Not Landing Flaps
Landing Gear Discrete or Gear Override **)	Selected => Not Selected =>	Landing Gear Down Landing Gear Up
Air/Ground Discrete	In Air => On Ground =>	Not On Ground On Ground
Glideslope Cancel Discrete	Cancel => Normal =>	Glideslope Cancelled Glideslope Enabled
Terrain Awareness and TCF Inhibit	Disabled => Normal =>	Terrain Off Terrain On

*) One "True" ennunciation and one "False" enunciation is given for each activation of the switch.

**) Landing Gear Handle must be pulled or in OFF position to toggle the discrete with the Gear Override Switch.

SAS G. Recommended Maintenance Response To Status LED's

SAS (1) In general, if the GND PROX SYS message appears on EICAS, the EGPWC front panel LED's should be checked. The following table shows the recommended maintenance action in response to the front panel LED's.

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SAS

EXTERNAL FAULT	COMPUTER OK	COMPUTER FAIL	CORRECTIVE ACTION
OFF	OFF	OFF	Ensure that the EGPWC is installed in the rack correctly and power to the EGPWC is turned on.
OFF	OFF	RED	Troubleshoot internal faults using the Level 2 self test, if possible. Remove and replace the EGPWC, if required.
OFF	GREEN	OFF	Normal operation.
OFF	GREEN	RED	Remove and replace the EGPWC.
YELLOW	OFF	OFF	Remove and replace the EGPWC.
YELLOW	OFF	RED	Troubleshoot internal faults using the Level 2 self test, if possible. Remove and replace the EGPWC, if required.
YELLOW	GREEN	OFF	Troubleshoot external faults using the Level 2 self test.
YELLOW	GREEN	RED	Remove and replace the EGPWC.

SAS

SAS H. Recommended Maintenance Response to Terrain INOP Light

SAS (1) A Terrain INOP light may not always imply an external or internal failure of the EGPWC. The Terrain INOP light may turn on if the required accuracy of the position information is not being received from the GPS (e.g. weak GPS signal in the hangar), IRS or the FMC. Therefore, if the Terrain INOP light is reported to be on or was on, perform a Level 2 self test and a Level 4 check to consult the fault history. If GPS faults are present, use a Time Domain Reflectometer (TDR) to check the coax cable and antenna. A normal antenna will draw a slow descending line from the antenna position. A relative sharp descending/ascending line show a short/open in the antenna or antenna coax plug. Replace or repair as necessary.

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Not Used
Figure 101

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VOR SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ANTENNA - DUAL VOR, M262	2	1	326A, VERTICAL STABILIZER	34-51-03
CIRCUIT BREAKER -	2		FLT COMPT, P11	
VOR/MKR LEFT, C595		1	11A1	*
VOR RIGHT, C596		1	11E33	*
INDICATOR - (FIM 34-22-00/101)				
LEFT RADIO DISTANCE MAGNETIC, N3				
RIGHT RADIO DISTANCE MAGNETIC, N43				
PANEL - (FIM 34-22-00/101)				
LEFT EFIS CONTROL, M94				
RIGHT EFIS CONTROL, M93				
PANEL - LEFT VOR CONTROL M91	2	1	FLT COMPT, P55	34-51-02
PANEL - RIGHT VOR CONTROL, M92	2	1	FLT COMPT, P55	34-51-02
RECEIVER - LEFT VOR/MARKER, M186	2	1	119AL, MAIN EQUIP CTR, E2-2	34-51-01
RECEIVER - RIGHT VOR/MARKER, M187	2	1	119AL, MAIN EQUIP CTR, E2-3	34-51-01
RELAY - (FIM 31-01-36/101)				
LEFT FMC TUNING, K757				
SYS NO. 1 AIR/GND, K124				
RELAY - (FIM 31-01-37/101)				
RIGHT FMC TUNING, K758				
SYS NO. 2 AIR/GND, K214				

* SEE THE WDM EQUIPMENT LIST

VOR System - Component Index
Figure 101

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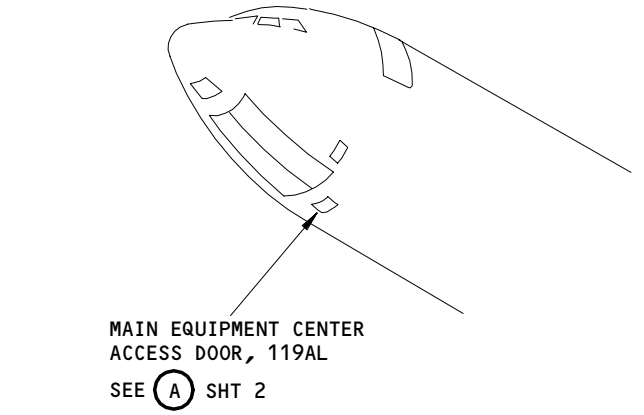

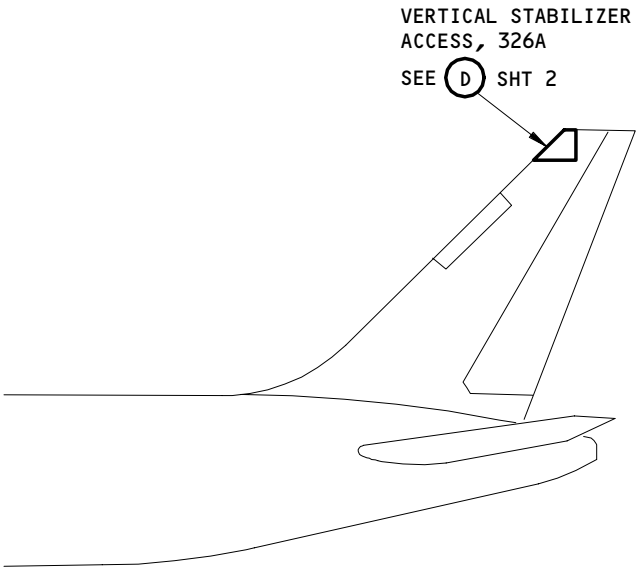

VOR System - Component Location
Figure 102 (Sheet 1)

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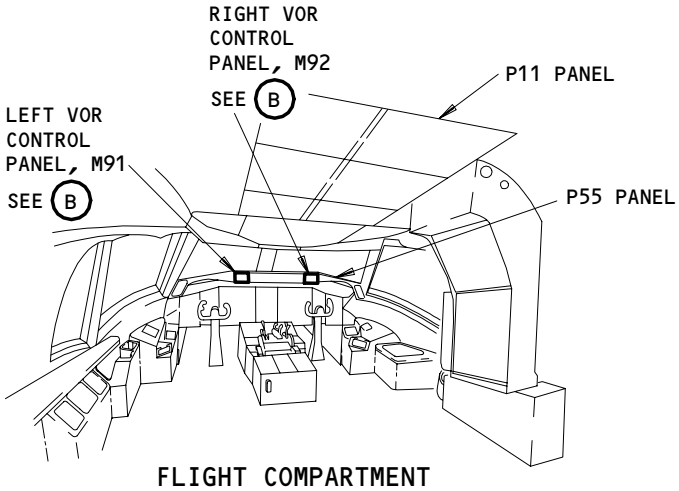
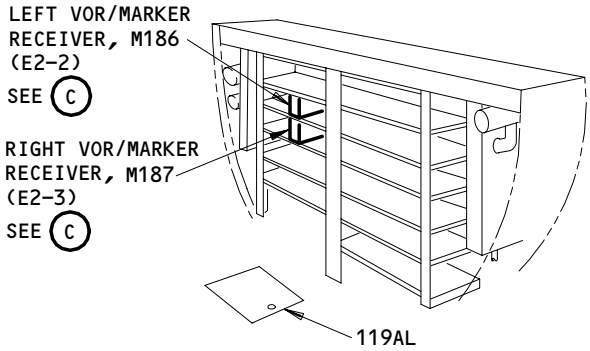
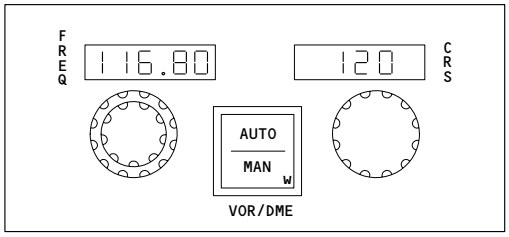


FLIGHT COMPARTMENT



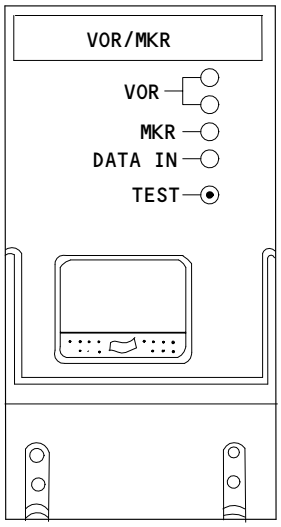
MAIN EQUIPMENT CENTER

A FROM SHT 1



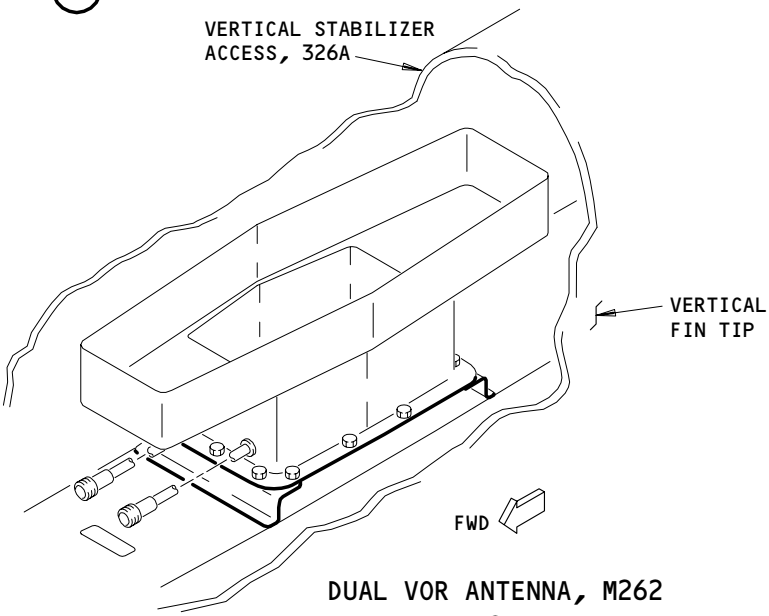
LEFT OR RIGHT VOR CONTROL PANEL,
M91 OR M92

B



LEFT OR RIGHT
VOR/MARKER RECEIVER,
M186 OR M187

C



DUAL VOR ANTENNA, M262

D FROM SHT 1

VOR System - Component Location
Figure 102 (Sheet 2)

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PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
IRS INITIALIZED (MM 34-21-00/501)
EFIS (MM 34-22-00/501)

CB'S: 11A1,11A6,11E4,11E25,11E33,11F25

VOR BITE PROCEDURE

1 ENERGIZE AND ALIGN THE IRS. SET THE MODE SWITCH ON THE EFIS CONTROL PANEL TO THE VOR-EXP POSITION. TURN THE LEFT AND RIGHT BEARING SOURCE SWITCHES ON EACH RDMI TO THE VOR POSITION. PUSH AND HOLD THE TEST SWITCH ON THE L (R) VOR RECEIVER.
DOES THIS SEQUENCE OCCUR ON THE RDMIs:

1. THE L (R) BEARING FLAGS SHOW FOR ABOUT 6 SECONDS
2. THE BEARING FLAGS DO NOT SHOW WHILE THE THIN BEARING POINTERS SHOW 180 ±2 DEGREES UNTIL THE END OF THE TEST?

NO → **10** DO THE TWO RDMIs SHOW INCORRECTLY?

YES → SEE SHEET 2 (BLOCK 2)

10 DO THE TWO RDMIs SHOW INCORRECTLY?

NO → **20** REPLACE THE L (R) RDMI, N3 (N43)(MM 34-22-05/401).
IF THE PROBLEM CONTINUES, REMOVE THE L (R) RDMI, N3 (N43). FOR A L VOR PROBLEM, EXAMINE AND REPAIR THE CIRCUIT FROM THE L (R) RDMI, CONNECTOR D645 (D647), PINS 38 AND 39 TO TB130, PINS G12 AND G13. FOR A R VOR PROBLEM, EXAMINE AND REPAIR THE CIRCUIT FROM THE L (R) RDMI, CONNECTOR D645 (D647), PINS 48 AND 49 TO TB243, PINS YA9 AND YA10 (WDM 34-22-81,-91).
INSTALL THE L (R) RDMI.

YES → **21** REPLACE THE L (R) VOR/MKR RECEIVER, M186 (M187) (MM 34-51-01/401).
IF THE PROBLEM CONTINUES, REMOVE THE L (R) VOR/MKR RECEIVER, M186 (M187). FOR A L VOR PROBLEM, REMOVE THE L (R) RDMI, N3 (N43). EXAMINE AND REPAIR THE CIRCUIT FROM THE L VOR/MKR RECEIVER, CONNECTOR D329B, PINS B13 AND C13 TO THE L (R) RDMI, CONNECTOR D645 (D647), PINS 38 AND 39. FOR THE R VOR PROBLEM, EXAMINE AND REPAIR THE CIRCUIT FROM THE R VOR/MKR RECEIVER, CONNECTOR D357B, PINS B13 AND C13 TO TB243, PINS YA9 AND YA10 (WDM 34-51-11,-21).
INSTALL THE L (R) VOR/MKR RECEIVER.
INSTALL THE L (R) RDMI.

VOR BITE Procedure
Figure 103 (Sheet 1)

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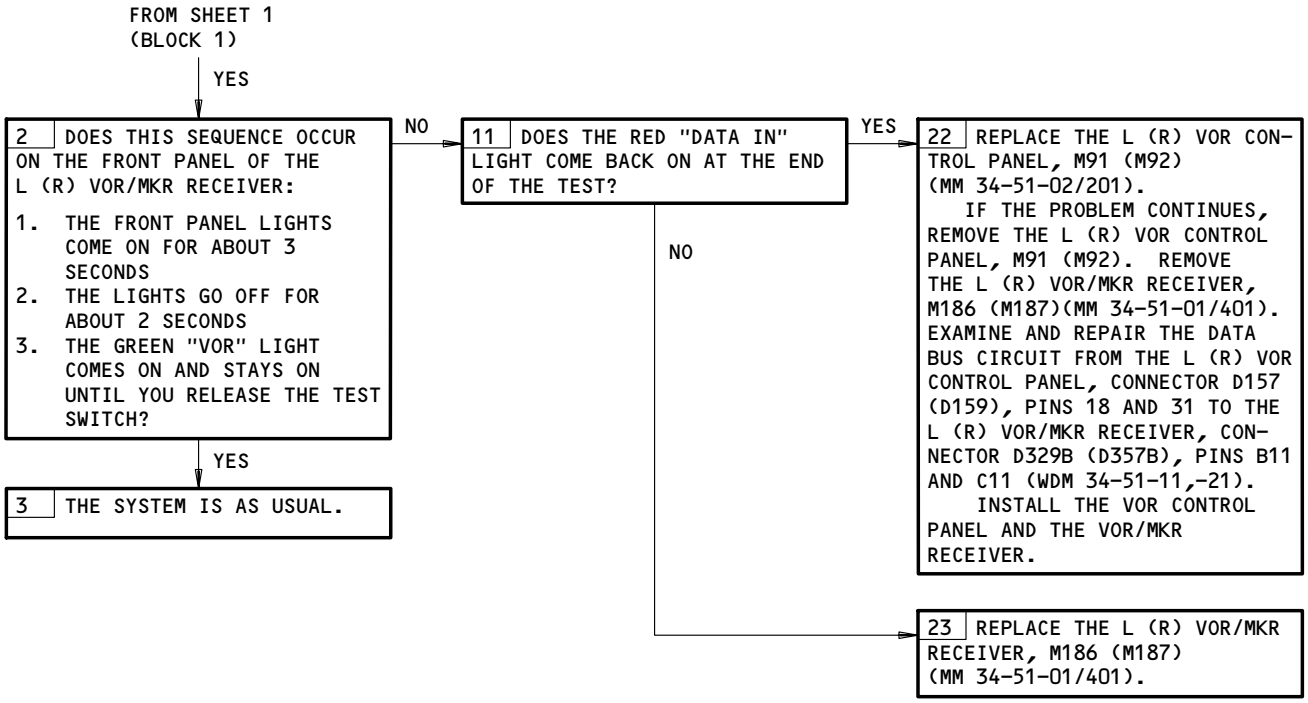

VOR BITE Procedure
Figure 103 (Sheet 2)

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PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
IRS INITIALIZED (MM 34-21-00/501)
EFIS (MM 34-22-00/501)
FMCS (MM 34-61-00/501)

CB'S: 11A1,11A6,11E33,11F25

VOR FLAG ON RDMIS, NO FLAG ON EHSI VORCP DISPLAY INOP

1 ON THE L (R) EFIS CONTROL PANEL, PUT THE MODE SELECT SWITCH IN VOR. PUSH AND HOLD THE TEST SWITCH ON THE L (R) VOR/MKR RECEIVER, AS APPLICABLE.
DOES THE RED "VOR" LIGHT COME BACK ON AT THE END OF THE TEST (ABOUT 6 SECONDS)?

- YES → **21** REPLACE THE L (R) VOR/MKR RECEIVER, M186 (M187) (MM 34-51-01/401).
- NO ↓

2 DOES THE RED "DATA IN" LIGHT COME BACK ON AT THE END OF THE TEST (ABOUT 6 SECONDS)?

- YES → **22** REPLACE THE L (R) VOR CONTROL PANEL, M91 (M92) (MM 34-51-02/201).
IF THE PROBLEM CONTINUES, REMOVE THE L (R) VOR CONTROL PANEL, M91 (M92). REMOVE THE L (R) VOR/MKR RECEIVER, M186 (M187)(MM 34-51-01/401). EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) VOR CONTROL PANEL, CONNECTOR D157 (D159), PINS 18 AND 31 TO THE L (R) VOR/MKR RECEIVER, CONNECTOR D329B (D357B), PINS B11 AND C11 (WDM 34-51-11,-21).
INSTALL THE VOR CONTROL PANEL AND THE VOR/MKR RECEIVER.
- NO ↓

3 PUSH THE "INIT REF" KEY ON THE L (R) FMC CDU.
SET "MAINT" ON THE INIT/REF INDEX.
SET "SENSORS" ON THE MAINTENANCE INDEX.
DOES THE LRU "FMC" FOR THE L (R) SENSOR STATUS SHOW "FAIL"?

- YES → **23** REPLACE THE L (R) FMC, M134 (M135)(MM 34-61-01/401).
- NO → **24** REPLACE THE L (R) VOR CONTROL PANEL, M91 (M92) (MM 34-51-02/201).

VOR Flag on RDMIs, No Flag on EHSI, VORCP Display Inop
Figure 104

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AUTOTUNE - VOR FLAG IN VIEW ON RDMIS, MANUAL OPERATION NORMAL

PREREQUISITES
ELECTRICAL POWER (MM 24-22-00/201)
IRS INITIALIZED (MM 34-21-00/501)
EFIS (MM 34-22-00/501)
FMCS (MM 34-61-00/501)

CB'S: 11A1,11A6,11E33,11F25

1 SET THE NAV SWITCH OF THE L (R) INSTRUMENT SOURCE SELECT PANEL TO THE FMC-R (FMC-L) POSITION. SET THE L (R) EFIS MODE SELECT SWITCH TO THE MAP OR PLAN POSITION.
DOES THE VOR FLAG SHOW ON THE RDMIs?

NO → **21** PUSH THE "INIT REF" KEY ON L (R) FMC CDU.
PUSH THE KEY ADJACENT TO THE "MAINT" PROMPT ON THE INIT/REF INDEX.
PUSH THE KEY ADJACENT TO THE "SENSORS" PROMPT ON THE MAINTENANCE INDEX.
DOES THE LRU "FMC" FOR THE L (R) SENSOR STATUS SHOW "FAIL"?

YES → **31** REPLACE THE L (R) FMC, M134 (M135)(MM 34-61-01/401).

NO → **32** REMOVE THE L (R) FMC, M134 (M135)(MM 34-61-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM TB133 (TB145), PINS G23 AND G24 (G24 AND G25) TO THE L (R) FMC, CONNECTOR D323A (D353B), PINS G9 AND H9 (H79 AND H81) (WDM 34-51-11,-21).
INSTALL THE FMC RECEIVER.

YES ↓

2 PUSH AND HOLD THE TEST SWITCH ON THE L (R) VOR RECEIVER.
DOES THE RED "VOR" LIGHT COME BACK ON AT THE END OF THE TEST?

YES → **33** REPLACE THE L (R) VOR RECEIVER, M186 (M187) (MM 34-51-01/401).

NO → **34** REMOVE THE L (R) VOR RECEIVER, M186 (M187) (MM 34-51-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) VOR RECEIVER, CONNECTOR D329B (D357B), PINS B9 AND C9 TO THE TB133 (TB145), PINS H33 AND H35 (H79 AND H81) (WDM 34-51-11,-21).
INSTALL THE VOR RECEIVER.

Autotune - VOR Flag In View On RDMIs, Manual Operation Normal
Figure 105

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PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A1,11A6,11E33,11F25

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)
IRS IS ALIGNED (AMM 34-21-00/501)

NOTE: AIRPLANES WITH THE -411 EFIS SYMBOL GENERATOR AND ON;
IF YOU PUSH THE "INOP" SWITCH ON THE EFIS CONTROL PANEL WHEN IN THE MAP MODE, A VOR FLAG WILL SHOW ON THE EHSI. MAKE SURE THE "INOP" SWITCH IS NOT SET.

VOR FLAG ON EHSI, RDMI DISPLAYS ARE NORMAL

1 REMOVE THE LEFT (RIGHT) EFIS SG, M148 (M150) (AMM 34-22-01/401).
MAKE SURE THE INPUT BUS FROM THE LEFT (RIGHT) VOR RECEIVER, CONNECTOR D329B (D357B), PINS B13 AND C13, IS ACTIVE AT THE LEFT (RIGHT) EFIS SG, CONNECTOR D425A (D373D), PINS J3 AND K3 (WDM 34-51-11,-21).
IS THE BUS ACTIVE?

YES → 21 REPLACE THE LEFT (RIGHT) EFIS SYMBOL GENERATOR, M148 (M150)(AMM 34-22-01/401).

NO → 22 EXAMINE THE DATA BUS CIRCUIT FROM TB130 (TB119), PINS G12 AND G13, TO THE LEFT (RIGHT) EFIS SG, CONNECTOR D425A (D373D), PINS J3 AND K3 (WDM 34-51-11,-21).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE EFIS SYMBOL GENERATOR.

VOR Flag on EHSI, RDMI Displays Are Normal
Figure 106

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PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A1,11A6,11E33,11F25

MAKE SURE THE AIRPLANE IS IN THIS CONFIGURATION:
ELECTRICAL POWER IS ON (AMM 24-22-00/201)
IRS INITIALIZED (AMM 34-21-00/501)

VOR DISPLAY PROBLEMS ON L (R) RDMI AND EHSI

1 PUSH AND HOLD THE TEST SWITCH ON THE L (R) VOR RECEIVER.
DOES THE RED "VOR" LIGHT COME BACK ON AT THE END OF THE TEST?

YES → 21 REPLACE THE L (R) VOR RECEIVER, M186 (M187) (AMM 34-51-01/401).

NO → 22 DO THIS PROCEDURE: "VOR FLAG ON THE EHSI, RDMI DISPLAYS ARE NORMAL" (FIM 34-51-00/101, FIG. 106).

VOR Display Problems on L (R) RDMI and EHSI
Figure 107

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
IRS INITIALIZED (AMM 34-21-00/501)
EFIS (AMM 34-22-00/501)
FMCS (AMM 34-61-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A1, 11A6, 11E33, 11F25

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

VOR INDICATIONS NORMAL, FREQ DISPLAY ON VORCP ABNORMAL

1 REPLACE THE L (R) VOR CONTROL PANEL, M91 (M92) (AMM 34-51-02/201).
IS THE DISPLAY CORRECT?

YES → 21 THE VOR SYSTEM IS AS USUAL.

NO ↓

2 PUSH THE "INIT REF" KEY ON L (R) FMC CDU.
PUSH THE KEY ADJACENT TO THE "MAINT" PROMPT ON THE INIT/REF INDEX.
PUSH THE KEY ADJACENT TO THE "SENSORS" PROMPT ON THE MAINTENANCE INDEX.
DOES THE LRU "VOR" FOR THE L (R) SENSOR STATUS SHOW "FAIL"?

NO → 22 REMOVE THE L (R) VOR CONTROL PANEL, M91 (M92) (AMM 34-51-02/201).
EXAMINE THE DATA BUS CIRCUIT FROM TB133 (TB145), PINS G29 AND G30 TO THE L (R) VOR CONTROL PANEL, CONNECTOR D157 (D159), PINS 8 AND 21 (WDM 34-51-11, WDM 34-51-21). REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE VOR CONTROL PANEL.

YES ↓

3 ON THE L (R) FMC CDU, DOES THE LRU FMC FOR THE L (R) SENSOR STATUS SHOW "FAIL"?

YES → 23 REPLACE THE L (R) FMC, M134 (M135)(AMM 34-61-01/401).

NO → 24 REMOVE THE L (R) VOR/MARKER RECEIVER, M186 (M187)(AMM 34-51-01/401).
EXAMINE THE DATA BUS CIRCUIT FROM THE L (R) VOR/MARKER RECEIVER, CONNECTOR D329B (D357B), PINS A4 AND B4 TO TB133 (TB145), PINS G29 AND G30 (WDM 34-51-11, WDM 34-51-21). REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE L (R) VOR/MARKER RECEIVER.

VOR Indications Normal, Freq Display on VORCP Abnormal
Figure 108

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BRG FLAG ON RDMIs, LATERAL DEV BAR MISSING ON EHSI IN VOR MODE, VORCP FREQ SELECT OK

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A1,11A6,11E33,11F25

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

NOTE: THE VOR FLAG IS SHOWN ON THE RDMI AND THE LATERAL DEVIATION BAR IS NOT SHOWN ON THE EHSI WHEN THE VOR SIGNAL IS NOT AVAILABLE.

1 REMOVE THE L (R) VOR/MARKER RECEIVER, M186 (M187) (AMM 34-51-01/401).
DO THE ANTENNA CABLE CHECK PROCEDURE (AMM 20-10-32/201) AT THE L (R) VOR/MARKER RECEIVER, CONNECTOR D329C (D357B), PINS 1 AND C1 (WDM 34-51-11,-21).
IS THE VOR ANTENNA CABLE OK?

YES → 20 INSTALL THE L (R) VOR/MARKER RECEIVER, M186 (M187) (AMM 34-51-01/401).
REPLACE THE VOR ANTENNA, M262 (AMM 34-51-03/401).

NO → 21 REPLACE THE VOR ANTENNA CABLE CIRCUIT FROM THE L (R) VOR/MARKER RECEIVER, CONNECTOR D329C (D357B), PINS 1 AND C1, TO THE VOR ANTENNA, CONNECTOR D35 (D37)(WDM 34-51-11,-21).
INSTALL THE L (R) VOR/MARKER RECEIVER, M186 (M187) (AMM 34-51-01/401).

Brg Flag on RDMIs, Lateral Dev Bar Missing on EHSI in VOR Mode, VORCP Freq Select OK
Figure 109

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1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR YOU CAN CAUSE DAMAGE TO THE CONNECTORS.

      (1) The ARINC 429 data bus charts give data necessary to make an analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminal or at the LRU connector.
   B. Equipment
      (1) Standard multi-meter
      (2) 429EBP Data Bus Analyzer (recommended)
          JcAIR Instrumentation
          400 Industrial Parkway,
          Industrial Airport, KS 66031

          429-2 Data Bus Analyzer (alternative)
          Interface Technology
          150 E. Arrow Highway,
          San Dimas, CA 91773
      (3) A34011-1 Breakout Box (recommended)
          A34011-112 Breakout Box (alternative)

VOR								
DIGITAL OUTPUT BUS CHART								
BUS NAME								
SOURCE		TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
VOR	(L R)	A	1	B	A04 B04	429	LO	OMNIBEARING #1
VOR	(L R)	A	2	B	B13 C13	429	LO	OMNIBEARING #2

VOR ID=11								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
SELECTED COURSE #1	A	024	BCD	5	00	0-359	CW FROM NORTH	DEG
VOR FREQUENCY	A	034	BCD	5	00	108-117.95	ALWAYS POSITI	MHZ
VOR OMNIBEARING	A	222	BNR	16	00	± 180	CW FROM NORTH	DEG

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VOR				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
400 HZ MKR BEACON	222	11	PRESENT	NOT PRES
1300 HZ MKR BEACON	222	12	PRESENT	NOT PRES
4000 HZ MKR BEACON	222	13	PRESENT	NOT PRES

VOR CP							
DIGITAL OUTPUT BUS CHART							
BUS NAME			CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
SOURCE	TYPE	BUS					
VORCP (L R)	A	1		18 31	429	LO	VOR FREQUENCY
VORCP (L R)	A	2		16 29	429	LO	DME FREQUENCY

VOR CP ID=B1								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
SEL RUNWAY HDG-D	A	017	BCD	5	00	0-359	CW FROM NORTH	DEG
SELECTED COURSE #1	A	024	BCD	5	00	0-359	CW FROM NORTH	DEG
ILS FREQUENCY	A	033	BCD	5	00	108-111.95	ALWAYS POSITI	MHZ
VOR FREQUENCY	A	034	BCD	5	00	108-117.95	ALWAYS POSITI	MHZ
DME FREQUENCY	A	035	BCD	5	00	108-135.95	ALWAYS POSITI	MHZ

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VOR CP				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
VOR/ILS FREQ	034	14	ILS	VOR
DME MODE 1	035	11	CODED	
DME MODE 2	035	12	CODED	
DME MODE 3	035	13	CODED	
ILS/VOR FREQ	035	14	ILS	VOR

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AIR TRAFFIC CONTROL (ATC) SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ANTENNA - BOTTOM ATC, M259	1	1	BOTTOM OF FUSELAGE	34-53-03
ANTENNA - TOP ATC, M261	1	1	TOP OF FUSELAGE	34-53-03
CIRCUIT BREAKER -	2		FLIGHT COMPARTMENT, P11	
ATC ANT SWITCH, C4423		1	11F11	*
ATC LEFT, C616		1	11F7	*
ATC RIGHT, C617		1	11F28	*
COMPUTER - (FIM 31-41-00/101)				
EICAS LEFT, M10181				
EICAS RIGHT, M10182				
COMPUTER - (FIM 34-45-00/101)				
TCAS, M1705 1				
PANEL - ATC CONTROL, M81	2	1	FLIGHT COMPARTMENT, P8	34-53-02
RELAY - (FIM 31-01-36/101)				
SYS NO. 1 AIR/GND, K143				
RELAY - (FIM 31-01-37/101)				
SYS NO. 2 AIR/GND, K200				
SWITCH - (FIM 34-12-00/101)				
LEFT ADC, S482				
RIGHT ADC, S483				
SWITCH - BOTTOM ATC ANT, S10564	3	1	119AL, MAIN EQUIP CENTER, E2-2	34-53-04
SWITCH - TOP ATC ANT, S10563	3	1	119AL, MAIN EQUIP CENTER, E2-3	34-53-04
TRANSPONDER - LEFT ATC, M112	2	1	119AL, MAIN EQUIP CENTER, E2-2	34-53-01
TRANSPONDER - RIGHT ATC, M113	2	1	119AL, MAIN EQUIP CENTER, E2-3	34-53-01

* SEE THE WDM EQUIPMENT LIST

1 AIRPLANES WITH TCAS

Air Traffic Control (ATC) System - Component Index
Figure 101

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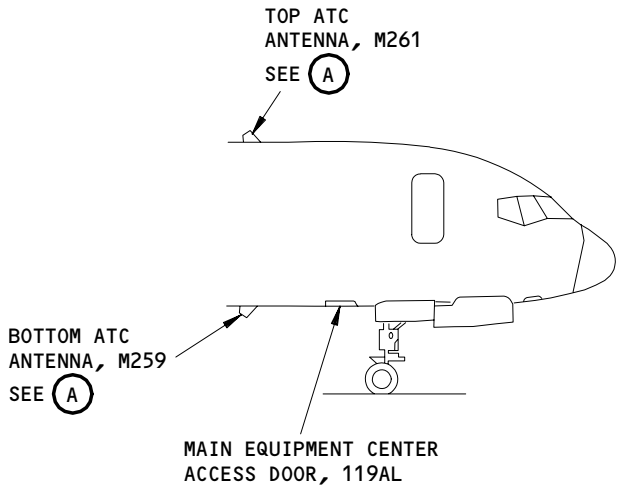

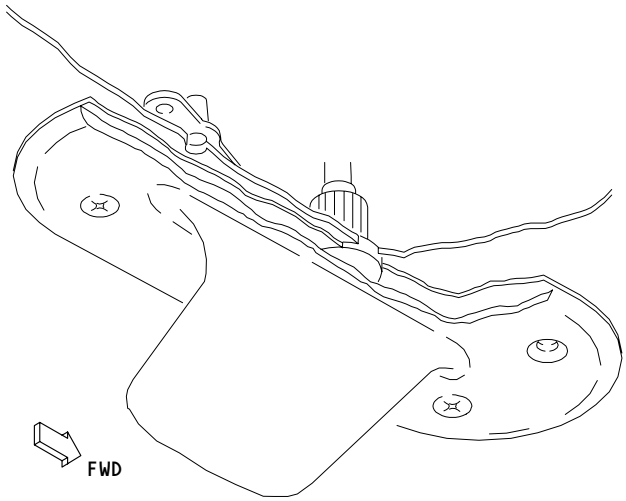

BOTTOM OR TOP ATC ANTENNA, M259 OR M261

A

Air Traffic Control (ATC) System - Component Location
Figure 102 (Sheet 1)

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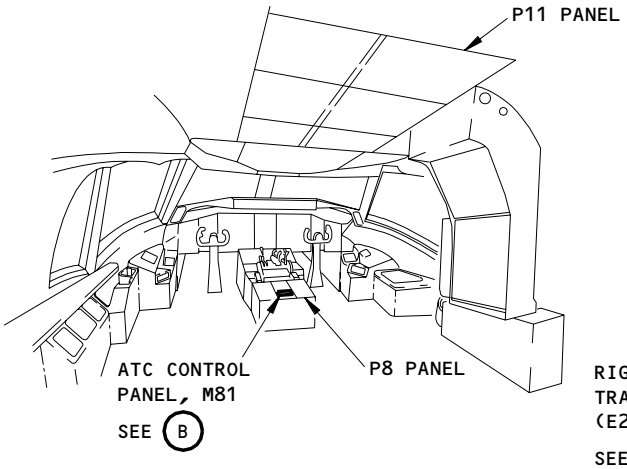
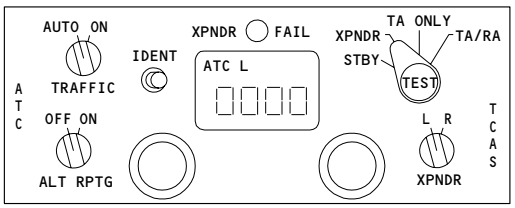
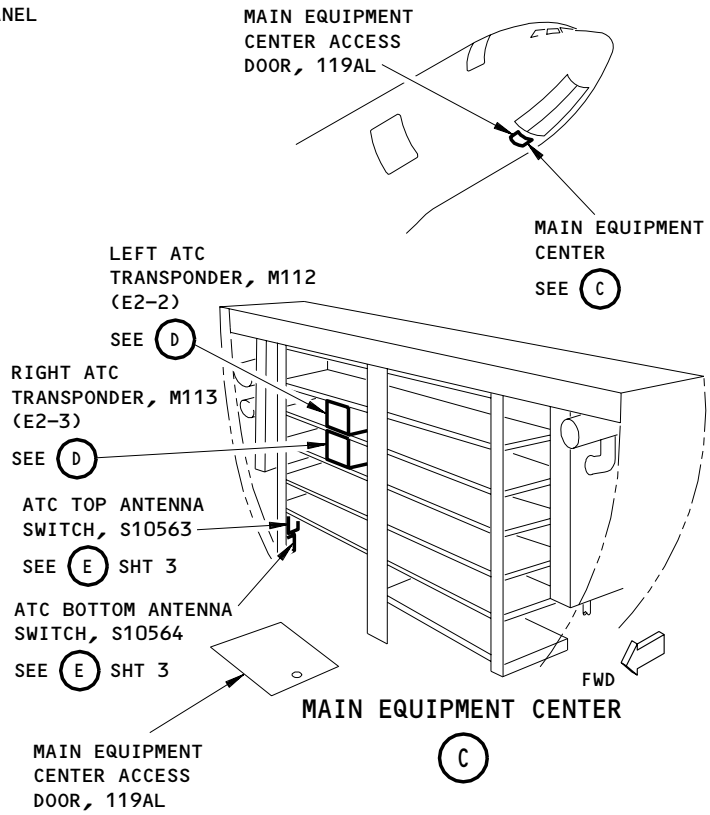


FLIGHT COMPARTMENT



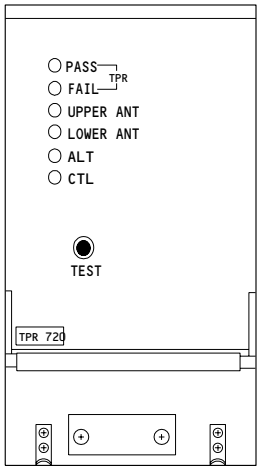
ATC/MODE S CONTROL PANEL, M81

B



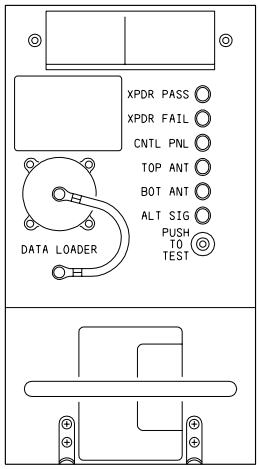
MAIN EQUIPMENT CENTER

C



LEFT OR RIGHT ATC TRANSPONDER, M112 OR M113

D 1



LEFT OR RIGHT ATC TRANSPONDER, M112 OR M113

D 2

1 AIRPLANES WITH ROCKWELL COLLINS MODE-S TRANSFORMER

2 AIRPLANES WITH ACSS MODE-S TRANSFORMER

Air Traffic Control (ATC) System - Component Location
Figure 102 (Sheet 2)

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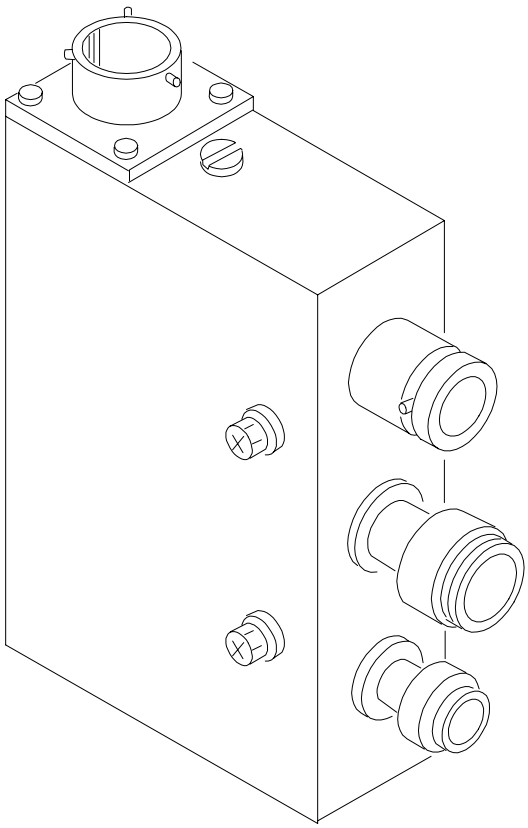

TOP OR BOTTOM ATC ANTENNA SWITCH,
S10563 OR S10564

E

Air Traffic Control (ATC) System - Component Location (Detail from Sht 2)
Figure 102 (Sheet 3)

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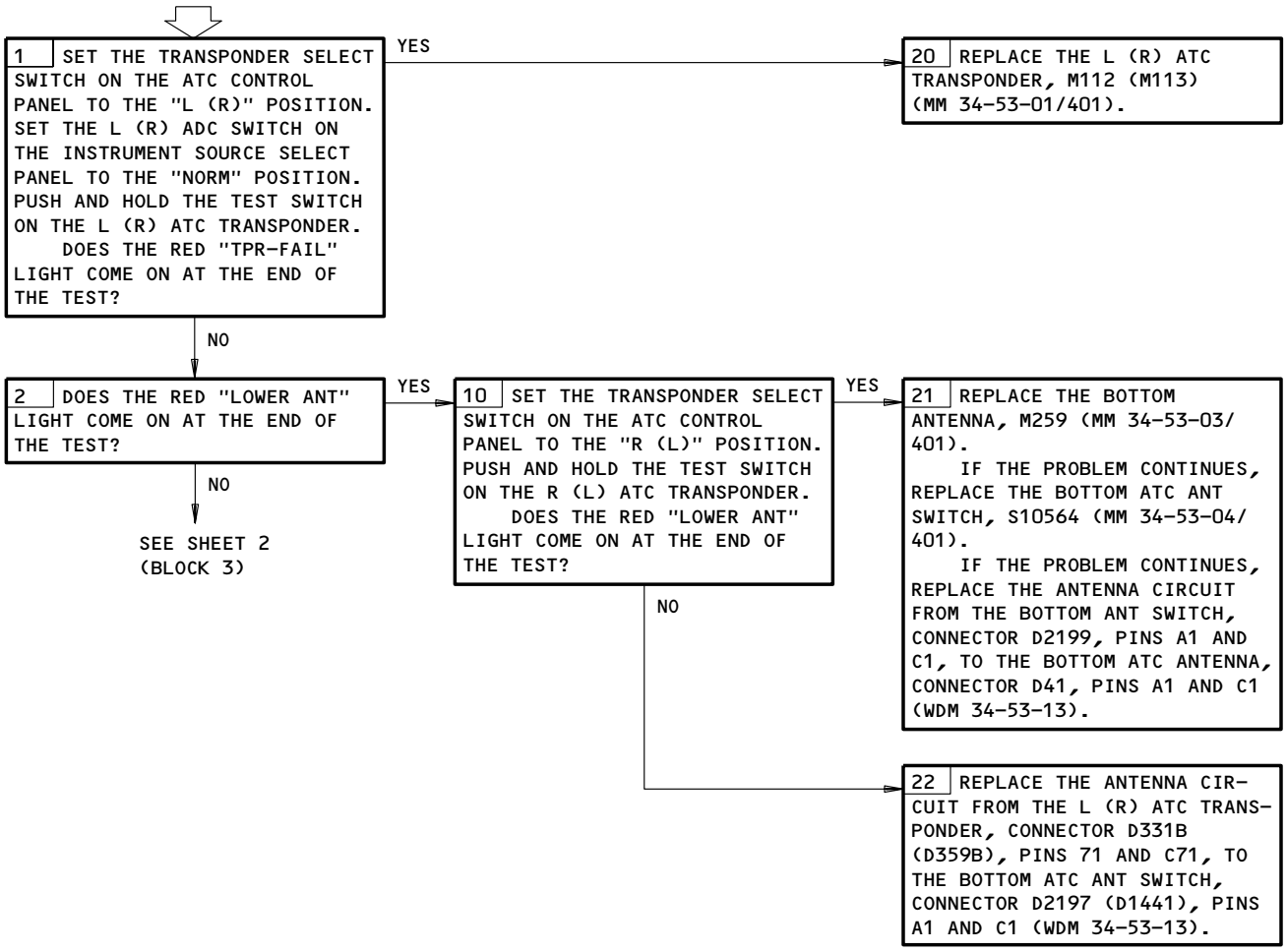
PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
ADC SYSTEM (MM 34-12-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11F7,11F11,11F28

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
ELECTRICAL POWER IS ON (MM 24-22-00/201)

ATC SYSTEM "BITE" PROCEDURE



ATC System BITE Procedure
Figure 103 (Sheet 1)

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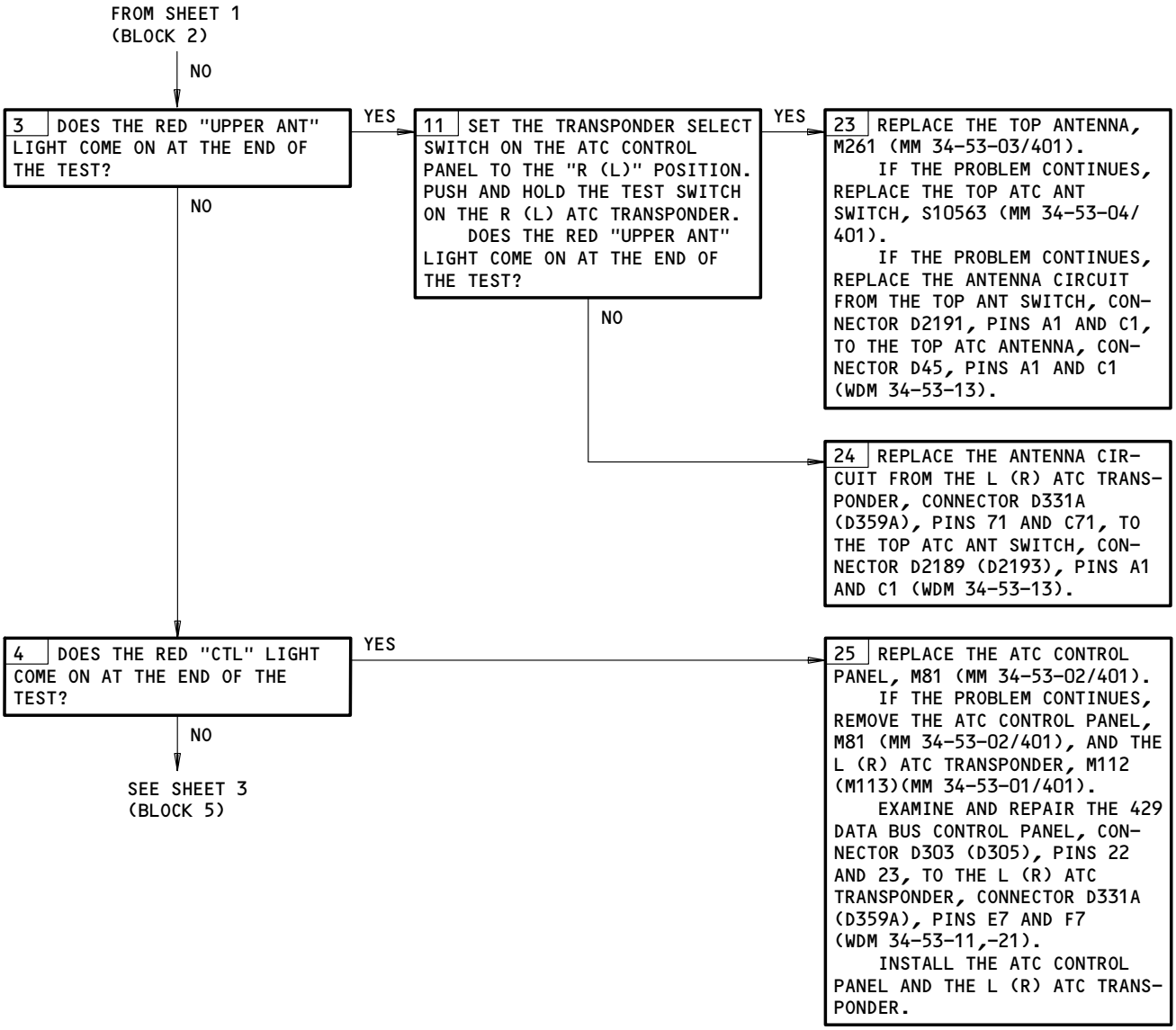

ATC System BITE Procedure
Figure 103 (Sheet 2)

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FROM SHEET 2
(BLOCK 4)

NO

5 DOES THE RED "ALT" COME ON AT THE END OF THE TEST?

YES → 12 DOES THE FAULTBALL SHOW YELLOW ON THE L (R) AIR DATA COMPUTER?

NO → SEE SHEET 4 (BLOCK 6)

12 YES → 26 REPLACE THE L (R) AIR DATA COMPUTER, M100 (M101) (MM 34-12-01/401).

12 NO → 13 SET THE TRANSPONDER SELECT SWITCH ON THE ATC CONTROL PANEL TO THE "R (L)" POSITION.
SET THE L (R) ADC SWITCH ON THE INSTRUMENT SOURCE SELECT PANEL TO THE "ALTN" POSITION. PUSH AND HOLD THE TEST SWITCH ON THE R (L) ATC TRANSPONDER.
DOES THE RED "ALT" LIGHT COME ON AT THE END OF THE TEST?

13 YES → 27 REMOVE THE L (R) AIR DATA COMPUTER, M100 (M101) (MM 34-12-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) ADC, CONNECTOR D423B (D351B), PINS A8 AND B8, TO CONNECTOR TB133 (TB145), PINS H69 AND H71 (WDM 34-12-12, -22).
INSTALL THE L (R) AIR DATA COMPUTER.

13 NO → 28 REMOVE THE L (R) ATC TRANSPONDER, M112 (M113) (MM 34-53-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) ATC TRANSPONDER, CONNECTOR D331A (D359A), PINS H7 AND J7, TO CONNECTOR TB133 (TB145), PINS H69 AND H71 (WDM 34-53-11,-21).
INSTALL THE L (R) ATC TRANSPONDER.

ATC System BITE Procedure
Figure 103 (Sheet 3)

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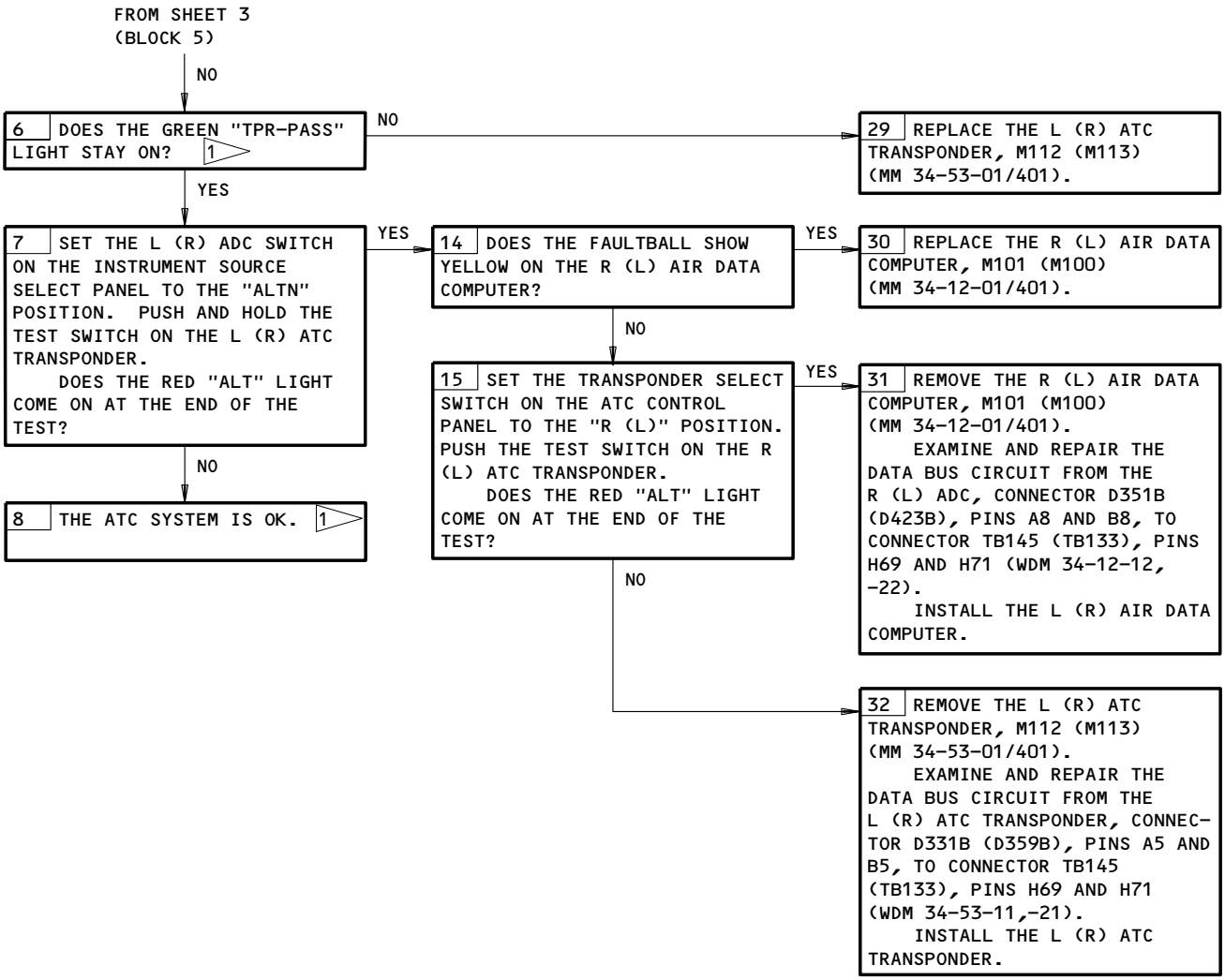

1 THE GREEN "TPR-PASS" LIGHT WILL STAY ON OR FLICKER AT THE END OF THE TEST IF THE TRANSPONDER IS REPLYING TO A SIGNAL.

ATC System BITE Procedure
Figure 103 (Sheet 4)

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PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
ADC SYSTEM (MM 34-12-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11F7,11F11,11F28

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
ELECTRICAL POWER IS ON (MM 24-22-00/201)

ALT RPTG INOP WITH LEFT (RIGHT) TXPDR SELECTED

1 SET THE TRANSPONDER SELECT SWITCH ON THE ATC CONTROL PANEL TO THE "L (R)" POSITION. SET THE L (R) ADC SWITCH ON THE INSTRUMENT SOURCE SELECT PANEL TO THE "NORM" POSITION. PUSH AND HOLD THE TEST SWITCH ON THE L (R) ATC TRANSPONDER.
DOES THE RED "TPR-FAIL" LIGHT COME ON AT THE END OF THE TEST?

YES → **20** REPLACE THE L (R) ATC TRANSPONDER, M112 (M113) (MM 34-53-01/401).

NO ↓

2 DOES THE RED "ALT" LIGHT COME ON AT THE END OF THE TEST?

YES → **10** DOES THE FAULTBALL SHOW YELLOW ON THE L (R) AIR DATA COMPUTER?

YES → **22** REPLACE THE L (R) AIR DATA COMPUTER, M100 (M101) (MM 34-12-01/401).

NO ↓

SEE SHEET 2 (BLOCK 3)

NO ↓

11 SET THE TRANSPONDER SELECT SWITCH ON THE ATC CONTROL PANEL TO THE "R (L)" POSITION. SET THE L (R) ADC SWITCH ON THE INSTRUMENT SOURCE SELECT PANEL TO THE "ALTN" POSITION. PUSH AND HOLD THE TEST SWITCH ON THE L (R) ATC TRANSPONDER.
DOES THE RED "ALT" LIGHT COME ON AT THE END OF THE TEST?

YES → **23** REMOVE THE L (R) AIR DATA COMPUTER, M100 (M101) (MM 34-12-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) ADC, CONNECTOR D423B (D351B), PINS A8 AND B8, TO CONNECTOR TB133 (TB145), PINS H69 AND H71 (WDM 34-12-12, -22).
INSTALL THE L (R) AIR DATA COMPUTER.

NO → **24** REMOVE THE L (R) ATC TRANSPONDER, M112 (M113) (MM 34-53-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) ATC TRANSPONDER, CONNECTOR D331A (D359A), PINS H7 AND J7, TO CONNECTOR TB133 (TB145), PINS H69 AND H71 (WDM 34-53-11,-21).
INSTALL THE L (R) ATC TRANSPONDER.

Alt Rptg Inop with Left (Right) Txpdr Selected
Figure 104 (Sheet 1)

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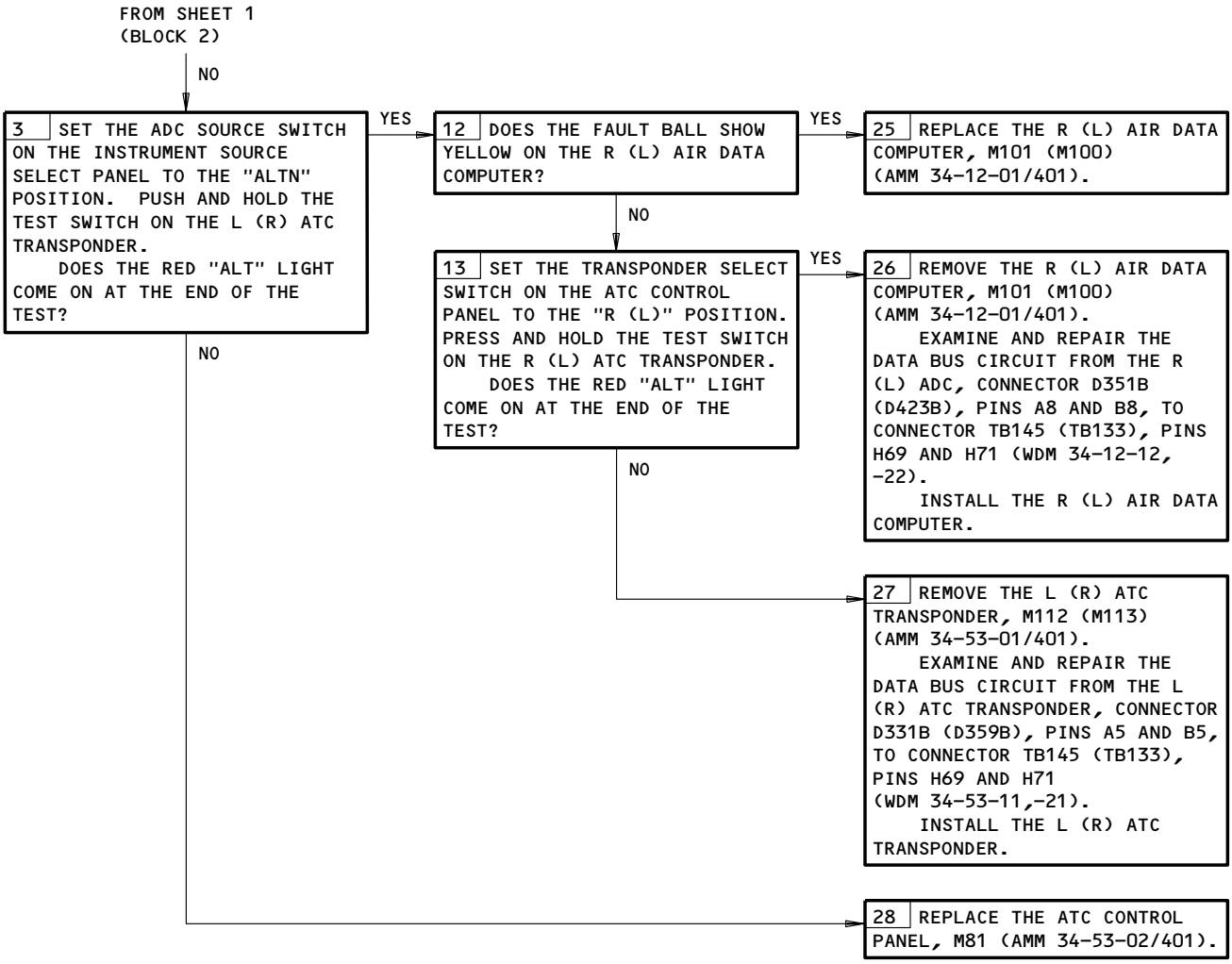

Alt Rptg Inop with Left (Right) Txpdr Selected
Figure 104 (Sheet 2)

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PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
ADC SYSTEM (MM 34-12-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11F7,11F11,11F28

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
ELECTRICAL POWER IS ON (MM 24-22-00/201)

ATC TRANSMISSION PROBLEMS

1 SET THE TRANSPONDER SELECT SWITCH ON THE ATC CONTROL PANEL TO THE "L (R)" POSITION. PUSH AND HOLD THE TEST SWITCH ON THE L (R) ATC TRANSPONDER.
DOES THE RED "TPR-FAIL" LIGHT COME ON AT THE END OF THE TEST?

YES → **20** REPLACE THE L (R) ATC TRANSPONDER, M112 (M113) (MM 34-53-01/401).

NO ↓

2 DOES THE RED "LOWER ANT" LIGHT COME ON AT THE END OF THE TEST?

YES → **10** SET THE TRANSPONDER SELECT SWITCH ON THE ATC CONTROL PANEL TO THE "R (L)" POSITION. PUSH AND HOLD THE TEST SWITCH ON THE R (L) ATC TRANSPONDER.
DOES THE RED "LOWER ANT" LIGHT COME ON AT THE END OF THE TEST?

YES → **21** REPLACE THE BOTTOM ANTENNA, M259 (MM 34-53-03/401).
IF THE PROBLEM CONTINUES, REPLACE THE BOTTOM ATC ANT SWITCH, S10564 (MM 34-53-04/401).
IF THE PROBLEM CONTINUES, REPLACE THE ANTENNA CIRCUIT FROM THE BOTTOM ANT SWITCH, CONNECTOR D2199, PINS A1 AND C1, TO THE BOTTOM ATC ANTENNA, CONNECTOR D41, PINS A1 AND C1 (WDM 34-53-13).

NO → **22** REPLACE THE ANTENNA CIRCUIT FROM THE L (R) ATC TRANSPONDER, CONNECTOR D331B (D359B), PINS 71 AND C71, TO THE BOTTOM ATC ANT SWITCH, CONNECTOR D2197 (D1441), PINS A1 AND C1 (WDM 34-53-13).

NO → SEE SHEET 2 (BLOCK 3)

ATC Transmission Problems
Figure 105 (Sheet 1)

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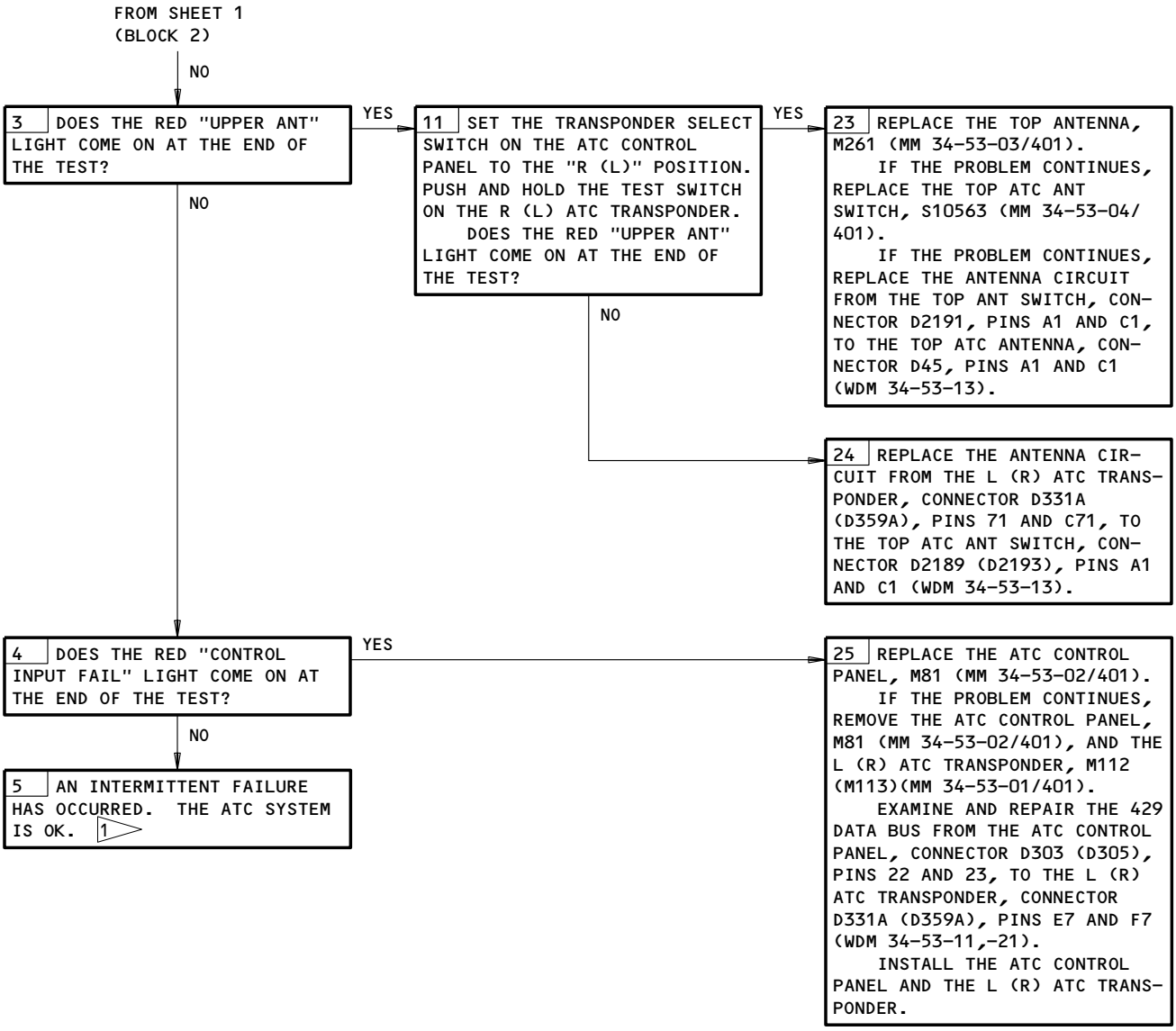

1 THE GREEN "TPR-PASS" LIGHT WILL STAY ON OR FLICKER AT THE END OF THE TEST IF THE TRANSPONDER IS REPLYING TO A SIGNAL.

ATC Transmission Problems
Figure 105 (Sheet 2)

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1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR YOU CAN CAUSE DAMAGE TO THE CONNECTORS.

      (1) The ARINC 429 data bus charts give data necessary to make an analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminal or at the LRU connectors.
   B. Equipment
      (1) Standard multi-meter
      (2) 429EBP Data Bus Analyzer (recommended)
          JcAIR Instrumentation
          400 Industrial Parkway,
          Industrial Airport, KS 66031

          429EBP Data Bus Analyzer (alternative)
          150 E. Arrow Highway,
          San Dimas, CA 91773
      (3) A34011-1 Breakout Box (recommended)
          A34011-112 Breakout Box (alternative)

ATC PNL							
DIGITAL OUTPUT BUS CHART							
BUS NAME			CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
SOURCE	TYPE	BUS					
TCPNL (L)	A	1	P1	22 23	429	LO	CONTROL DATA OUT L
TCPNL (R)	A	2	P2	22 23	429	LO	CONTROL DATA OUT R

ATC PNL ID = B8								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
XPONDER CODE	A	031	BCD	5	00	N/A	N/A	N/A

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DISTANCE MEASURING EQUIPMENT (DME) SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ANTENNA - L DME, M263	--	1	BOTTOM FUSELAGE	34-55-02
ANTENNA - R DME, M264	--	1	BOTTOM FUSELAGE	34-55-02
CIRCUIT BREAKERS -			FLT COMPT, P11	
DME LEFT, C582		1	11E11	*
DME RIGHT, C583		1	11E32	*
INDICATOR - (REF 34-22-00, FIG. 101)				
L RADIO DISTANCE MAGNETIC, N3	--	1		
R RADIO DISTANCE MAGNETIC, N43	--	1		
INTERROGATOR - L DME, M123	--	1	119AL, MAIN EQUIP CTR, E2-2	34-55-01
INTERROGATOR - R DME, M124	--	1	119AL, MAIN EQUIP CTR, E2-3	34-55-01
PANEL - (REF 34-22-00, FIG. 101)				
L EFIS CONTROL, M94				
R EFIS CONTROL, M93				
PANEL - (REF 34-51-00, FIG. 101)				
L VOR CONTROL, M91				
R VOR CONTROL, M92				
RELAY - (REF 31-01-36, FIG. 101)				
SYS NO. 1 AIR/GND, K124				
SYS NO. 2 AIR/GND, K214				
UNIT - (REF 31-31-00, FIG. 101)				
DIGITAL FLIGHT DATA ACQUISITION, M138				

* SEE THE WDM EQUIPMENT LIST

Distance Measuring Equipment (DME) System - Component Index
Figure 101

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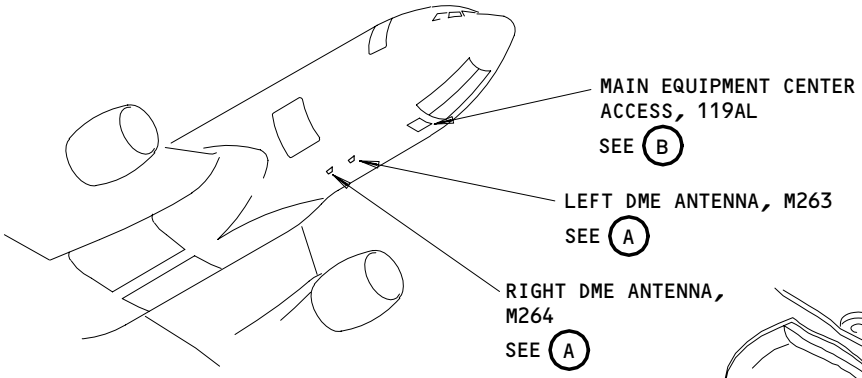
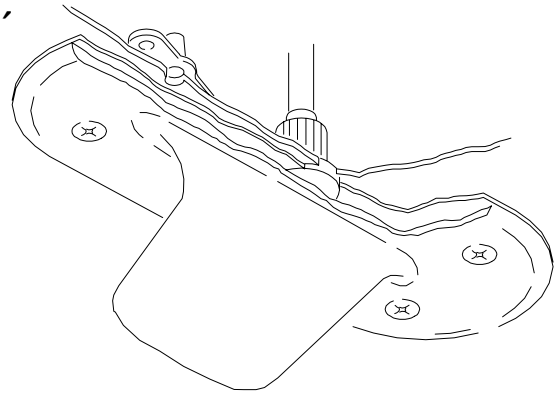
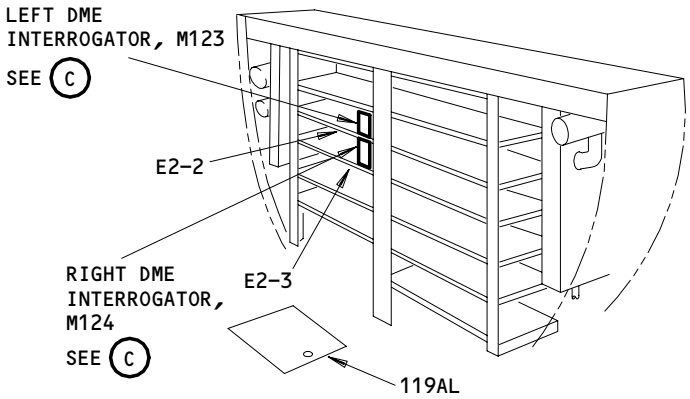




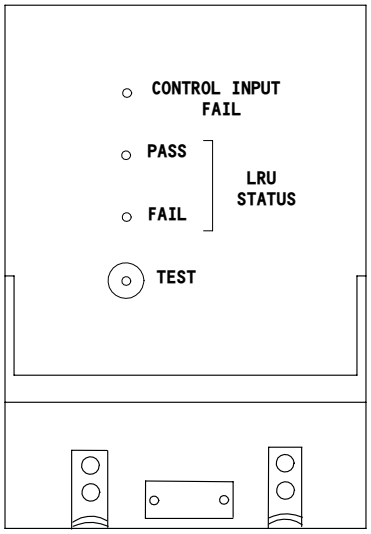
LEFT OR RIGHT DME ANTENNA, M263 OR M264

A



MAIN EQUIPMENT CENTER

B



LEFT OR RIGHT DME INTERROGATOR, M123 OR M124

C

Distance Measuring Equipment (DME) System - Component Location
Figure 102

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PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
EFIS (MM 34-22-00/501)
VOR (MM 34-51-00/501)
ILS (MM 34-31-00/501)

CB'S: 11A1,11E11,11E32,11E33

DME SYSTEM BITE PROCEDURE

1 ON THE CAPT (F/O) EFIS CONTROL PANEL, SET THE MODE SELECT SWITCH TO THE EXP-VOR POSITION. PUSH AND HOLD THE TEST SWITCH ON THE L (R) DME INTERROGATOR.
DOES THE RED LRU STATUS-FAIL LIGHT COME BACK ON AT THE END OF THE TEST (AFTER 6 SECONDS)?

YES → **20** REPLACE THE L (R) DME INTERROGATOR, M123 (M124) (MM 34-55-01/401).

NO ↓

2 DOES THE RED CONTROL INPUT-FAIL LIGHT COME BACK ON AT THE END OF THE TEST?

YES → **21** REPLACE THE L (R) VOR CONTROL PANEL, M91 (M92) (MM 34-51-02/201).
IF THE PROBLEM CONTINUES, REMOVE THE L (R) VOR CONTROL PANEL, M91 (M92).
REMOVE THE L (R) DME INTERROGATOR, M123 (M124) (MM 34-55-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) VOR CONTROL PANEL, CONNECTOR D157 (D159), PINS 16 AND 29, TO THE L (R) DME INTERROGATOR, CONNECTOR D333B (D361B), PINS D3 AND E3 (WDM 34-55-11,-21).
INSTALL THE VOR CONTROL PANEL AND THE DME INTERROGATOR.

NO ↓

3 DOES THE GREEN LRU STATUS-PASS LIGHT COME ON AT THE END OF THE TEST?

NO → **22** REPLACE THE L (R) DME INTERROGATOR, M123 (M124). (MM 34-55-01/401).

YES ↓

SEE SHEET 2
(BLOCK 4)

DME System BITE Procedure
Figure 103 (Sheet 1)

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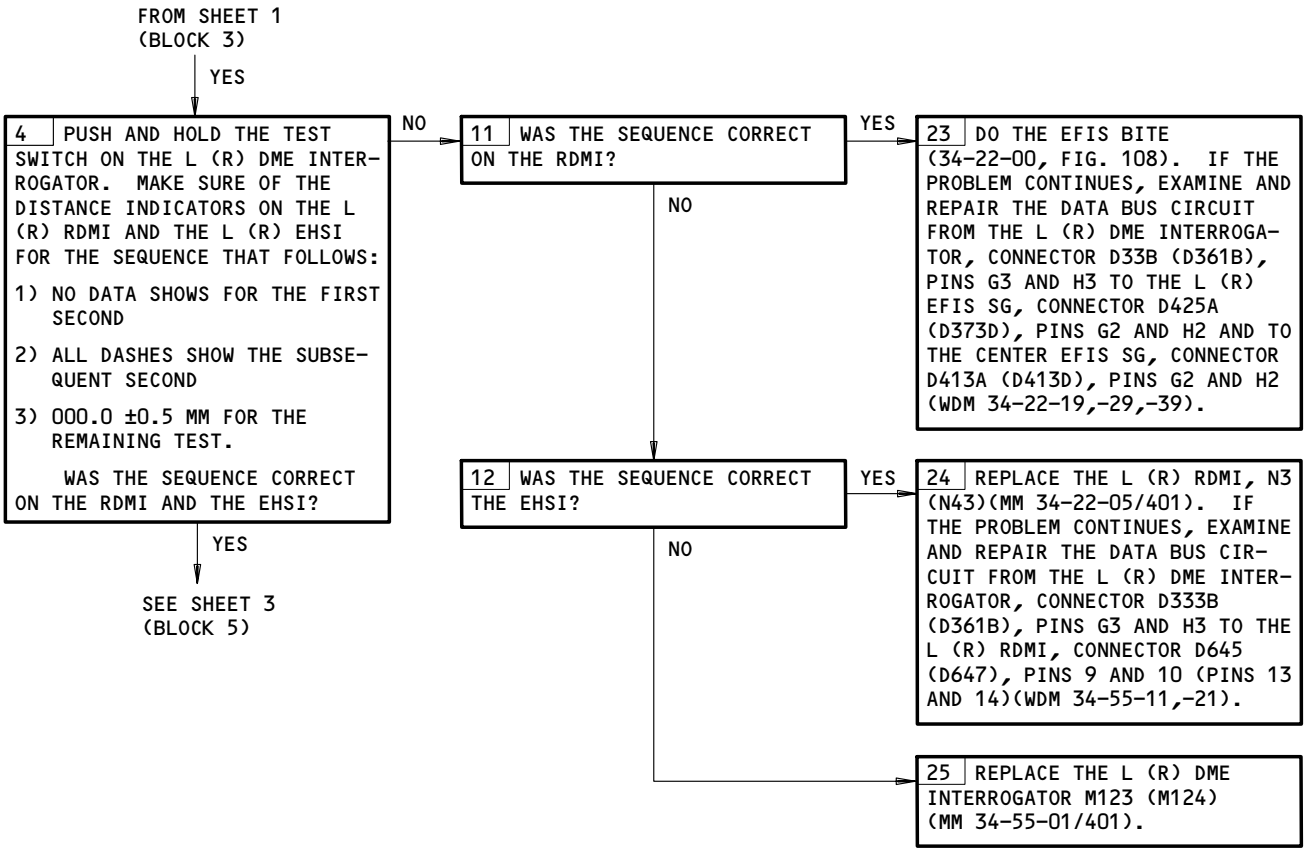

DME System BITE Procedure
Figure 103 (Sheet 2)

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FROM SHEET 2
(BLOCK 4)

YES

5 SET THE MODE SELECT SWITCH TO THE EXP-ILS POSITION ON THE CAPT (F/O) EFIS CONTROL PANEL. SET THE ILS FREQ TO A POSITION OTHER THAN PK ON THE ILS CONTROL PANEL. PUSH AND HOLD THE TEST SWITCH ON THE L (R) DME INTERROGATOR.
DOES THE RED CONTROL INPUT FAIL LIGHT COME BACK ON AT THE END OF THE TEST?

YES → 13 PUSH AND HOLD THE TEST SWITCH ON THE L (R) ILS RECEIVER.
DOES THE RED CONTROL INPUT-FAIL LIGHT ON THE ILS RECEIVER COME BACK ON AT THE END OF THE TEST?

NO → 26 REPLACE THE L (R) VOR CONTROL PANEL, M91 (M92) (AMM 34-51-02/201).
IF THE PROBLEM CONTINUES, REMOVE THE L (R) VOR CONTROL PANEL, M91 (M92).
REMOVE THE ILS CONTROL PANEL, M87 (AMM 34-31-02/401).
EXAMINE THE DATA BUS CIRCUIT AS NECESSARY FROM THE L (R) VOR CONTROL PANEL, CONNECTOR D157 (D159), PINS 10 AND 22, TO THE ILS CONTROL PANEL, CONNECTOR D155 (D601), PINS 13 AND 14 (WDM 34-31-11,-21; 34-51-11,-21).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE VOR CONTROL PANEL AND THE ILS CONTROL PANEL.

NO → 6 THE SYSTEM IS OK.

YES → 27 REPLACE THE ILS CONTROL PANEL, M87 (AMM 34-31-02/401).
IF THE PROBLEM CONTINUES, REMOVE THE L (R) VOR CONTROL PANEL, M91 (M92)(AMM 34-51-02/201).
REMOVE THE ILS CONTROL PANEL, M87.
EXAMINE THE DATA BUS CIRCUIT AS NECESSARY FROM THE L (R) VOR CONTROL PANEL, CONNECTOR D157 (D159), PINS 10 AND 22, TO THE ILS CONTROL PANEL, CONNECTOR D155 (D601), PINS 13 AND 14 (WDM 34-31-11,-21; 34-51-11,-21).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE VOR CONTROL PANEL AND THE ILS CONTROL PANEL.

DME System BITE Procedure
Figure 103 (Sheet 3)

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VOR MODE - DME DISPLAYS DASHES, VOR IDENT NORMAL

PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
EFIS (MM 34-22-00/501)

CB'S: 11A1,11E11,11E32,11E33

1 SET THE L (R) EFIS MODE SELECT SWITCH TO THE EXP-VOR POSITION. PUSH THE TEST SWITCH ON THE L (R) DME INTERROGATOR.
DOES THE RED LRU STATUS FAIL LIGHT COME BACK ON AT THE END OF THE TEST (AFTER 6 SECONDS)?

YES → 21 REPLACE THE L (R) DME INTERROGATOR M123 (M124) (MM 34-55-01/401).

NO ↓

2 DOES THE RED CONTROL INPUT-FAIL LIGHT COME BACK ON AT THE END OF THE TEST (AFTER 6 SECONDS)?

YES → 22 REPLACE THE L (R) VOR CONTROL PANEL, M91 (M92) (MM 34-51-02/201).
IF THE PROBLEM CONTINUES, REMOVE THE L (R) VOR CONTROL PANEL, M91 (M92).
REMOVE THE L (R) DME INTERROGATOR, M123 (M124) (MM 34-55-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) CONTROL PANEL, CONNECTOR D157 (D159), PINS 16 AND 29 TO THE L (R) DME INTERROGATOR, CONNECTOR D333B (D361B), PINS D3 AND E3 (WDM 34-55-11,-21).
INSTALL THE VOR CONTROL PANEL AND THE DME INTERROGATOR.

NO → 23 DO THE ILS MODE PROCEDURE (34-55-00, FIG. 105).

VOR Mode - DME Displays Dashes, VOR Ident Normal
Figure 104

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ILS MODE - DME DISPLAYS DASHES, ILS IDENT NORMAL

PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
EFIS (MM 34-22-00/501)
ILS (MM 34-31-00/501)

CB'S: 11A1,11E11,11E32,11E33

1 SET THE L (R) EFIS MODE SELECT TO THE EXP-ILS POSITION. PUSH AND HOLD THE TEST SWITCH ON THE L (R) DME INTERROGATOR.
DOES THE RED STATUS FAIL LIGHT COME BACK ON AT THE END OF THE TEST (AFTER 6 SECONDS)?

YES → **21** REPLACE THE L (R) DME INTERROGATOR M123 (M124) (MM 34-55-01/401).

NO ↓

2 DOES THE RED CONTROL INPUT FAIL LIGHT COME BACK ON AT THE END OF THE TEST (AFTER 6 SECONDS)?

YES → **22** REPLACE THE L (R) VOR CONTROL PANEL, M91 (M92) (MM 34-51-02/201).
IF THE PROBLEM CONTINUES, REMOVE THE L (R) VOR CONTROL PANEL, M91 (M92).
REMOVE THE ILS CONTROL PANEL, M87 (MM 34-31-02/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) VOR CONTROL PANEL, CONNECTOR D157 (D159), PINS 10 AND 22 TO THE ILS CONTROL PANEL, CONNECTOR D155 (D601), PINS 13 AND 14 (WDM 34-31-11,-21), (WDM 34-51-11,-21).
INSTALL THE VOR CONTROL PANEL AND THE ILS CONTROL PANEL.
IF THE PROBLEM CONTINUES, REMOVE THE L (R) DME INTERROGATOR, M123 (M124) (MM 34-55-01/401).
REMOVE THE L (R) VOR CONTROL PANEL.
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) DME INTERROGATOR, CONNECTOR D333B (D361B), PINS D3 AND E3 TO THE L (R) VOR CONTROL PANEL, CONNECTOR D157 (D159), PINS 16 AND 29 (WDM 34-55-11,-21).
INSTALL THE L (R) DME INTERROGATOR AND THE VOR CONTROL PANEL.

NO ↓

SEE SHEET 2 (BLOCK 3)

ILS Mode - DME Displays Dashes, ILS Ident Normal
Figure 105 (Sheet 1)

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FROM SHEET 1
(BLOCK 2)

NO

3 REMOVE THE L (R) DME INTERROGATOR, M123 (M124) (AMM 34-55-01/401).
EXAMINE THE ANTENNA CABLE AT THE L (R) DME INTERROGATOR, CONNECTOR D333B (D361B), PINS 71 AND C71 (AMM 20-10-32/201).
IS THE ANTENNA CABLE OK?

YES

23 INSTALL THE DME INTERROGATOR, M123 (M124) (AMM 34-55-01/401).
REPLACE THE L (R) DME ANTENNA, M263 (M264) (AMM 34-55-02/401).

NO

24 REMOVE THE L (R) DME ANTENNA, M263 (M264) (AMM 34-55-02/401).
REPLACE THE ANTENNA CIRCUIT FROM THE L (R) DME INTERROGATOR, CONNECTOR D333B (D361B), PINS 71 AND C71 TO THE L (R) DME ANTENNA CONNECTOR D47 (D49), PINS A1 AND C1 (WDM 34-55-11,-21).
INSTALL THE L (R) DME INTERROGATOR, M123 (M124) (AMM 34-55-01/401).
INSTALL THE L (R) DME ANTENNA, M263 (M264) (AMM 34-55-02/401).

ILS Mode - DME Displays Dashes, ILS Ident Normal
Figure 105 (Sheet 2)

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PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A1,11E11,11E32,11E33

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

BLANK DME DISPLAY ON EHSI - OTHERWISE NORMAL

1 REMOVE THE L (R) DME INTERROGATOR, M123 (M124) (AMM 34-55-01/401).
REMOVE THE L (R) EFIS SG, M148 (M150)(AMM 34-22-01/401).
MAKE SURE THERE IS DATA ON THE 429 INPUT BUS FROM THE L (R) DME INTERROGATOR AT THE L (R) EFIS SG, CONNECTOR D425A (D373D), PINS G2 AND H2 (WDM 34-22-19,29).
IS THERE DATA ON THE BUS?

YES → 20 INSTALL THE L (R) DME INTERROGATOR, M123 (M124) (AMM 34-55-01/401) AND REPLACE THE L (R) EFIS SG, M148 (M150) (AMM 34-22-01/401).

NO → 21 EXAMINE THE DATA BUS CIRCUIT FROM THE L (R) DME INTERROGATOR, CONNECTOR D333B (D361B), PINS G3 AND H3, TO THE L (R) EFIS SG, CONNECTOR D425A (D373D), PINS G2 AND H2 (WDM 34-22-19,-29).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE L (R) DME INTERROGATOR, M123 (M124) (AMM 34-55-01/401).
INSTALL THE L (R) EFIS SG, M148 (M150)(AMM 34-22-01/401).

Blank DME Display on EHSI - Otherwise Normal
Figure 106

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DME EHSI AND RDMI DISPLAYS BLANK

PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
EFIS (AMM 34-22-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A1,11E11,11E32,11E33

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

1 PUSH AND HOLD THE TEST SWITCH ON THE L (R) DME INTERROGATOR.
DOES THE RED LRU STATUS-FAIL LIGHT COME ON AT THE END OF THE TEST (AFTER 6 SECONDS)?

YES → 21 REPLACE THE L (R) DME INTERROGATOR, M123 (M124) (AMM 34-55-01/401).

NO → 22 REMOVE THE L (R) DME INTERROGATOR, M123 (M124) (AMM 34-55-01/401).
REMOVE THE L (R) EFIS SG, M148 (M150)(AMM 34-22-01/401).
EXAMINE THE DATA BUS CIRCUIT FROM THE L (R) DME INTERROGATOR, CONNECTOR D333B (D361B), PINS G3 AND H3, TO THE L (R) EFIS SG, CONNECTOR D425A (D373D), PINS G2 AND H2 (WDM 34-22-19,-29).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE DME INTERROGATOR AND THE EFIS SG.

DME EHSI and RDMI Displays Blank
Figure 107

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AUTOTUNE MODE – DME DISPLAYS SHOW DASHES

PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
EFIS (MM 34-22-00/501)
FMC (MM 34-61-00/501)

CB'S: 11A1,11E11,11E32,11E33

1 SET THE EFIS MODE SELECT TO THE EXP-VOR POSITION. PUSH AND HOLD THE TEST SWITCH ON THE L (R) DME INTERROGATOR.
DOES THE RED LRU STATUS-FAIL LIGHT COME ON AT THE END OF THE TEST (AFTER 6 SECONDS)?

YES → 21 REPLACE THE L (R) DME INTERROGATOR, M123 (M124) (MM 34-55-01/401).

NO ↓

2 DOES THE RED CONTROL INPUT FAIL LIGHT COME ON AT THE END OF THE TEST (AFTER 6 SECONDS)?

YES → 22 REPLACE THE L (R) VOR CONTROL PANEL, M91 (M92) (MM 34-51-02/201).

NO ↓

3 DOES THE FMC FAIL LIGHT ON THE L (R) FMC/CDU COME ON?

YES → 23 REPLACE THE L (R) FMC, M134 (M135)(MM 34-61-01/401).

NO ↓

4 GET THE REFERENCE SENSOR STATUS PAGE ON THE FMC/CDU (MM 34-61-00/501).
IS THE DME INPUT OK?

NO → 24 REMOVE THE L (R) DME INTERROGATOR CONNECTOR, M123 (M124)(MM 34-55-01/401).
REMOVE THE L (R) FMC, M134 (M135)(MM 34-61-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) DME INTERROGATOR, CONNECTOR D333B (D361B), PINS G1 AND H1 TO THE L (R) FMC, CONNECTOR D323A, PINS D1 AND E1 (D353B, PINS G7 AND H7) (WDM 34-55-11,-21).
INSTALL THE DME INTERROGATOR AND THE FMC.

YES → 25 REMOVE THE L (R) DME INTERROGATOR, M123 (M124) (MM 34-55-01/401).
REMOVE THE L (R) FMC, M134 (M135)(MM 34-61-01/401).
EXAMINE AND REPAIR THE DATA BUS CIRCUIT FROM THE L (R) DME INTERROGATOR, CONNECTOR D333B (D361B), PINS A3 AND B3 TO THE L (R) FMC, CONNECTOR D323A, PINS G9 AND H9 (D353B, PINS D7 AND E7) (WDM 34-55-11,-21).
INSTALL THE DME INTERROGATOR AND THE FMC.

Autotune Mode – DME Displays Show Dashes
Figure 108

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DME IDENT SIGNAL MISSING - DISPLAYS NORMAL

PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
VOR (MM 34-22-00/501)

CB'S: 11A1,11E11,11E32,11E33

1 REPLACE THE L (R) DME INTERROGATOR, M123 (M124)(MM 34-55-01/401). IF THE PROBLEM CONTINUES, REPLACE THE L (R) VOR CONTROL PANEL, M91 (M92)(MM 34-51-02/201).

DME Ident Signal Missing - Displays Normal
Figure 109

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR YOU CAN CAUSE DAMAGE TO THE CONNECTORS.

      (1) The ARINC 429 data bus charts give data necessary to make an analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminal or at the LRU connector.
   B. Equipment
      (1) Standard multi-meter
      (2) 429EBP Data Bus Analyzer (recommended)
          JcAIR Instrumentation
          400 Industrial Parkway
          Industrial Airport, KS 66031

          429EBP Data Bus Analyzer (alternative)
          Interface Technology
          150 E. Arrow Highway
          San Dimas, CA 91773
      (3) A34011-1 Breakout Box (recommended)
          A34011-112 Breakout Box (alternative)

DME								
DIGITAL OUTPUT BUS CHART								
BUS NAME								
SOURCE		TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
DME	(L R)	A	1	B	G01 H01	429	LO	DME DATA OUTPT#1
DME	(L R)	A	2	B	G03 H03	429	LO	DME DATA OUTPT#2

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DME ID=09								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
DME FREQUENCY	A	035	BCD	5	00	108-135.95	ALWAYS POS	MHZ
DME DISTANCE-D	A	201	BCD	6	00	-1T0399.99	ALWAYS POS	NM
DME DISTANCE	A	202	BNR	6	00	0-512	ALWAYS POS	NM

DME				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
VEL MEMORY MODE	202	11	MEM MODE	NORM MODE

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AUTOMATIC DIRECTION FINDER (ADF) SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ANTENNA - LEFT ADF, M265	1	1	TOP OF FUSELAGE	34-57-03
ANTENNA - RIGHT ADF, M266	1	1	TOP OF FUSELAGE	34-57-03
CIRCUIT BREAKER -	2		FLIGHT COMPARTMENT, P11	
ADF LEFT, C607		1	11F6	*
ADF RIGHT, C632		1	11A3	*
INDICATOR - (FIM 34-22-00/101)				
LEFT RDMI, N3				
RIGHT RDMI, N43				
PANEL - ADF CONTROL, M1046	2	1	FLIGHT COMPARTMENT, P8	34-57-02
RECEIVER - LEFT ADF, M215	2	1	821, MID EQUIPMENT CENTER, E5-1	34-57-01
RECEIVER - RIGHT ADF, M216	2	1	821, MID EQUIPMENT CENTER, E5-1	34-57-01
RELAY - (FIM 31-01-36/101)				
SYS NO. 1 AIR/GND, K124				
SYS NO. 2 AIR/GND, K214				

* SEE THE WDM EQUIPMENT LIST

Automatic Direction Finder (ADF) System - Component Index
Figure 101

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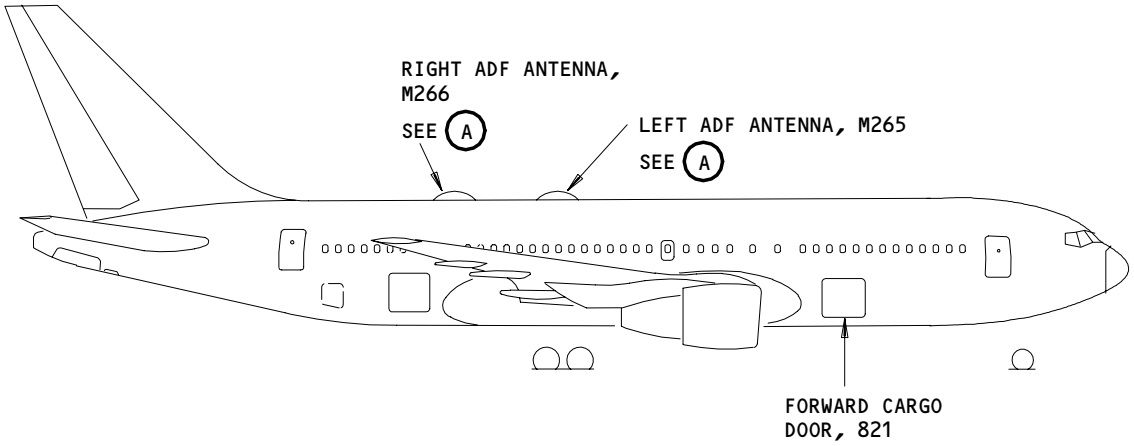

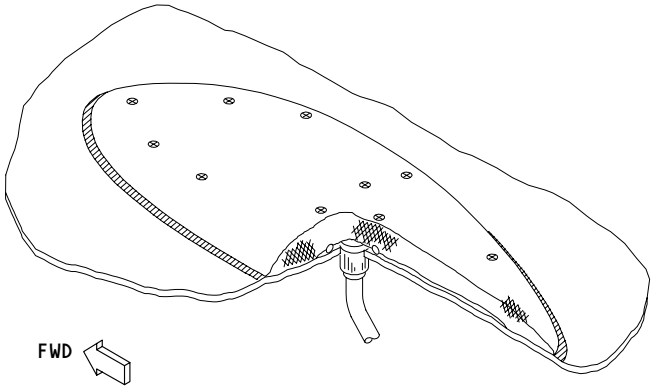

LEFT OR RIGHT ADF ANTENNA, M265 OR M266

A

Automatic Direction Finder (ADF) System - Component Location
Figure 102 (Sheet 1)

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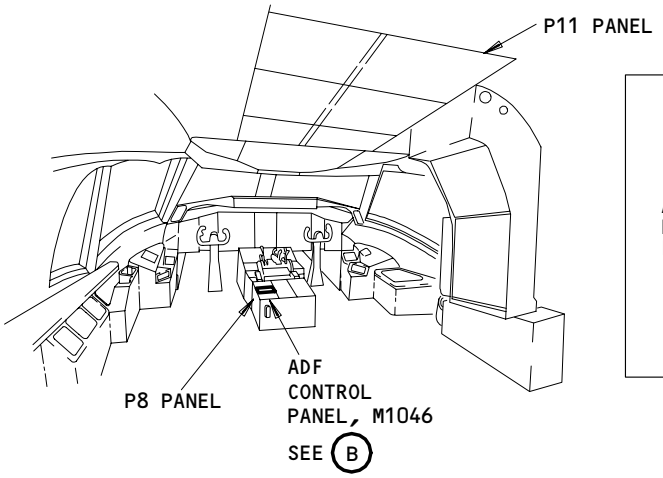
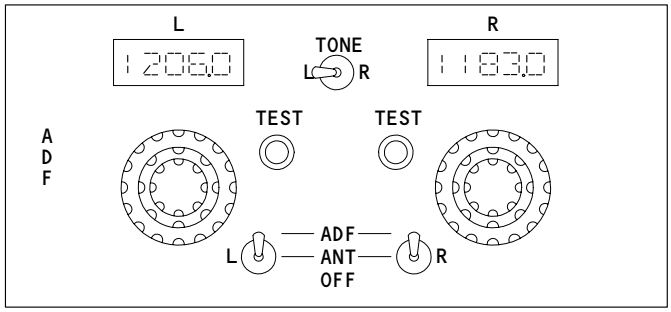
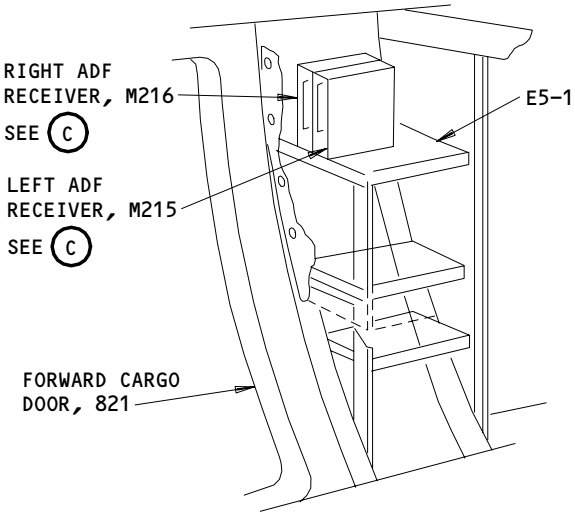


FLIGHT COMPARTMENT

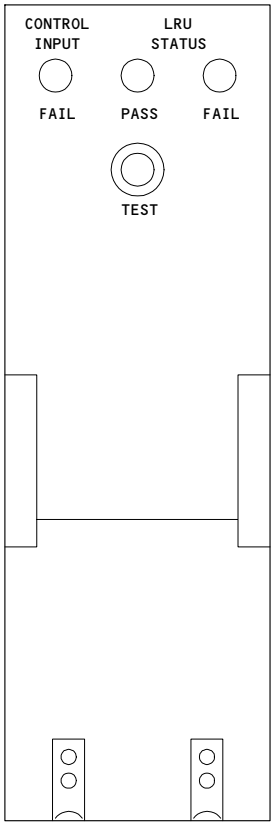


ADF CONTROL PANEL, M1046

B



MID EQUIPMENT CENTER



LEFT OR RIGHT ADF RECEIVER,
M215 OR M216

C

Automatic Direction Finder (ADF) System - Component Location
Figure 102 (Sheet 2)

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PREREQUISITES

MAKE SURE THIS SYSTEM WILL OPERATE:
FLIGHT INTERPHONE SYSTEM (MM 23-51-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A3,11A6,11F6,11F25

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
ELECTRICAL POWER IS ON (MM 24-22-00/201)

ADF AUDIO PROBLEMS

1 TUNE THE ADF CONTROL PANEL TO A KNOWN AM BROADCAST STATION WITH THE LEFT (RIGHT) SYSTEM CONTROLS.
IS THE PROBLEM HEARD ON ALL AUDIO SELECTOR PANELS?

YES → 40 REPLACE THE LEFT (RIGHT) ADF RECEIVER, M215 (M216) (MM 34-57-01/401).

NO → 41 REPLACE THE APPLICABLE AUDIO SELECTOR PANEL (MM 23-51-01/401).

ADF Audio Problems
Figure 103

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PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11A3,11A6,11F6,11F25

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

LEFT (RIGHT) ADF BEARING PROBLEMS ON BOTH RDMIs

1 PUSH THE "TEST" SWITCH ON THE LEFT (RIGHT) ADF RECEIVER, M215 (M216).
DOES THE "LRU STATUS FAIL" LIGHT COME ON AND STAY ON AFTER THE TEST SEQUENCE?

YES → 41 REPLACE THE LEFT (RIGHT) ADF RECEIVER, M215 (M216) (AMM 34-57-01/401).

NO ↓

2 DOES THE "CONTROL INPUT FAIL" LIGHT COME ON AND STAY ON AFTER THE TEST SEQUENCE?

YES → 42 REPLACE THE ADF CONTROL PANEL, M1046 (AMM 34-57-02/401).
IF THE PROBLEM CONTINUES, REMOVE THE LEFT ADF CONTROL PANEL, M1046, AND THE LEFT (RIGHT) ADF RECEIVER, M215 (M216)(AMM 34-57-01/401).
EXAMINE THE ARINC 429 DIGITAL DATA BUS CIRCUIT FROM THE LEFT ADF CONTROL PANEL, CONNECTOR D1629 (D1631), PINS 12 AND 13, TO THE LEFT (RIGHT) ADF RECEIVER, CONNECTOR D463B (D1419B), PINS B7 AND B8 (WDM 34-57-11, -21).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE LEFT ADF CONTROL PANEL AND THE LEFT (RIGHT) ADF RECEIVER.

NO ↓

SEE SHEET 2
(BLOCK 3)

Left (Right) ADF Bearing Problems on Both RDMIs
Figure 104 (Sheet 1)

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FROM SHEET 1
(BLOCK 2)

NO

3 TUNE THE LEFT (RIGHT) ADF SYSTEM TO A KNOWN BROADCAST STATION.
IS THE IDENTIFICATION SIGNAL RECEIVED?

YES

10 REMOVE THE LEFT (RIGHT) ADF RECEIVER, M215 (M216) (AMM 34-57-01/401).
DO THIS PROCEDURE:
ANTENNA CABLE CHECK PROCEDURE (AMM 20-10-32/201) ON THE TWO BEARING ANTENNA CABLE CIRCUITS, CONNECTOR D463B (D1419B), PINS D7,D8 AND D14, D15 (WDM 34-57-11,-12).
ARE THE ANTENNA BEARING CABLES OK?

YES

43 REPLACE THE LEFT (RIGHT) ADF ANTENNA, M265 (M266) (AMM 34-57-03/401).
INSTALL THE LEFT (RIGHT) ADF RECEIVER, M215 (M216) (AMM 34-57-01/401).

NO

44 REMOVE THE LEFT (RIGHT) ADF ANTENNA, M265 (M266)(IF NECESSARY)(AMM 34-57-03/401).
REPLACE THE ANTENNA CIRCUIT AS NECESSARY FROM THE LEFT (RIGHT) ADF RECEIVER M215 (M216), CONNECTOR D463B (D1419B), PINS D7,D8 AND/OR D14,D15, TO THE LEFT (RIGHT) ADF ANTENNA M265 (M266), CONNECTOR D51 (D1415), PINS 4,5 AND/OR 7,8 (WDM 34-57-11,-21).
INSTALL THE LEFT (RIGHT) ADF RECEIVER.
INSTALL THE LEFT (RIGHT) ADF ANTENNA (IF REMOVED).

NO

11 REMOVE THE LEFT (RIGHT) ADF RECEIVER M215 (M216) (AMM 34-57-01/401).
DO THIS PROCEDURE:
ANTENNA CABLE CHECK PROCEDURE (AMM 20-10-32/201) ON THE SENSE ANTENNA CABLE, CONNECTOR D463B (D1419B), PINS D1,D2 (WDM 34-57-11,-12).
IS THE ANTENNA SENSE CABLE OK?

YES

45 REPLACE THE LEFT (RIGHT) ADF ANTENNA, M265 (M266) (AMM 34-57-03/401).
INSTALL THE LEFT (RIGHT) ADF RECEIVER.

NO

46 REMOVE THE LEFT (RIGHT) ADF ANTENNA, M265 (M266)(IF NECESSARY)(AMM 34-57-03/401).
REPLACE THE ANTENNA CIRCUIT AS NECESSARY FROM THE LEFT (RIGHT) ADF RECEIVER M215 (M216), CONNECTOR D463B (D1419B), PINS D1,D2, TO THE LEFT (RIGHT) ADF ANTENNA M265 (M266), CONNECTOR D51 (D1415), PINS 1,2 (WDM 34-57-11,-21).
INSTALL THE LEFT (RIGHT) ADF RECEIVER.
INSTALL THE LEFT (RIGHT) ADF ANTENNA (IF REMOVED).

Left (Right) ADF Bearing Problems on Both RDMIs
Figure 104 (Sheet 2)

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1. ARINC Data Bus Charts
   A. General

      CAUTION: DO NOT DIRECTLY TOUCH THE CONNECTORS. USE A BREAKOUT BOX OR YOU CAN CAUSE DAMAGE TO THE CONNECTORS.

      (1) The ARINC 429 data bus charts give data necessary to make an analysis of ARINC 429 transmitters, receivers, and data buses. For the test, use a breakout box at the available terminal or at the LRU connector.

   B. Equipment
      (1) Standard multi-meter
      (2) 429EBP Data Bus Analyzer (recommended)
          JcAIR Instrumentation
          400 Industrial Parkway,
          Industrial Airport, KS 66031

          429-2 Data Bus Analyzer (alternative)
          Interface Technology
          150 E. Arrow Highway,
          San Dimas, CA 91773
      (3) A34011-1 Breakout Box (recommended)
          A34011-112 Breakout Box (alternative)

          NOTE: Octal label 222 is a multiple function label and will not display correctly in engineering units on the data bus analyzer unless hexadecimal equipment ID=11 is selected. For analyzers not capable of having ID selected, display the label in hexadecimal format and record the value. Set the data bus analyzer to transmit label 162 in hex format and insert the value recorded for label 222. Change label 162 format to engineering to display the correct engineering units.

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ADF							
DIGITAL OUTPUT BUS CHART							
BUS NAME			CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
SOURCE	TYPE	BUS					
ADF (L)	A	1	B	B10 B11	429	LO	BEARING OUTPUT NO. 1

ADF ID = 12								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
DF BEARING	A	162	BNR	16	00	± 180	CW FROM HDG	DEG

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ADF PNL							
DIGITAL OUTPUT BUS CHART							
BUS NAME							
SOURCE	TYPE	BUS	CON	PINS	BUS FORMAT	BIT RATE	DATA BUS
ADF PNL (L)	A	1	29	12 13	429	LO	FREQ/FUNC - L
ADF PNL (L)	A	2	31	12 13	429	LO	FREQ/FUNC - R

ADF PNL ID = B2								
OCTAL LABELS CHART								
SIGNAL	TYPE	LABEL	FORMAT	MIN UPDATE RATE	SDI	BINARY RANGE	POSITIVE SENSE	UNITS
ADF FREQUENCY	A	032	BCD	5	00	190 to 1750	ALWAYS POS	KHZ

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ADF PNL				
DISCRETE OCTAL LABELS/BIT CHART				
SIGNAL	OCTAL LABEL	BIT	ONE-STATE	ZERO-STATE
BFO ON	032	11	BFO ON	BFO OFF
ANT MODE	032	12	ANT MODE	ADF MODE
0.5 KHZ TUNING	032	14	.5 KHZ	.0 KHZ

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FLIGHT MANAGEMENT COMPUTER SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
CIRCUIT BREAKER -	1		FLT COMPT, P11	
DATA LOADER, C627		1	11B1	*
FMCS CDU LEFT, C597		1	11E8	*
FMCS CDU RIGHT, C598		1	11E29	*
FMCS CMPTR LEFT, C609		1	11E9	*
FMCS CMPTR RIGHT, C610		1	11E30	*
COMPUTER - (FIM 31-41-00/101)				
EICAS L, M10181				
EICAS R, M10182				
COMPUTER - FLIGHT MANAGEMENT L, M134	2	1	119AL, MAIN EQUIP CTR, E2-2	34-61-01
COMPUTER - FLIGHT MANAGEMENT R, M135	2	1	119AL, MAIN EQUIP CTR, E2-3	34-61-01
INDICATOR - (FIM 34-22-00/101)				
CAPT ELECTRONIC ATTITUDE DIRECTOR, N4				
CAPT ELECTRONIC HORIZONTAL SITUATION, N5				
F/O'S ELECTRONIC ATTITUDE DIRECTOR, N44				
F/O'S ELECTRONIC HORIZONTAL SITUATION, N45				
LIGHT - FMC ANNUNCIATOR, L603	1	1	FLT COMPT, P1-3	*
LOADER - AIRBORNE DATA, M1736	2	1	FLT COMPT, P61	34-61-05
PANEL - (FIM 22-11-00/101)				
AFCS MODE CONTROL, M90				
PANEL - (FIM 34-22-00/101)				
EFIS CONTROL L, M94				
EFIS CONTROL R, M93				
PANEL - DATA LOADER CONTROL, M1737	2	1	FLT COMPT, P61	34-61-06

* SEE THE WDM EQUIPMENT LIST

Flight Management Computer System - Component Index
Figure 101 (Sheet 1)

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FLIGHT MANAGEMENT COMPUTER SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
PRINTER - (REF 31-35-00, FIG. 101)				
MULTI-INPUT, M1631				
RELAY	2		119AL, MAIN EQUIP CTR, E2-2	
CDU NAV ENABLE L, K2065		1		*
FCC SOURCE SELECT L, K2067		1		*
RELAY	2		119AL, MAIN EQUIP CTR, E2-3	
CAPT & F/O SOURCE SELECT R, K2069		1		*
CDU NAV ENABLE R, K2066		1		*
FCC SOURCE SELECT R, K2068		1		*
RELAY - (REF 31-01-36, FIG. 101)				
FMC TUNING L, K757				
RELAY - (REF 31-01-37, FIG. 101)				
FMC TUNING R, K758				
SWITCH - LEFT FMC, S2	1	1	FLT COMPT, P1	*
SWITCH - RIGHT FMC, S10	1	1	FLT COMPT, P3	*
SYMBOL GENERATOR - (REF 34-22-00, FIG. 101)				
EFIS L, M148				
EFIS C, M149				
EFIS R, M150				
UNIT - FLIGHT MANAGEMENT COMPUTER CONTROL/ DISPLAY L, M76	1	1	FLT COMPT, P9	34-61-02
UNIT - FLIGHT MANAGEMENT COMPUTER CONTROL/ DISPLAY R, M77	1	1	FLT COMPT, P9	34-61-02

* SEE THE WDM EQUIPMENT LIST

Flight Management Computer System - Component Index
Figure 101 (Sheet 2)

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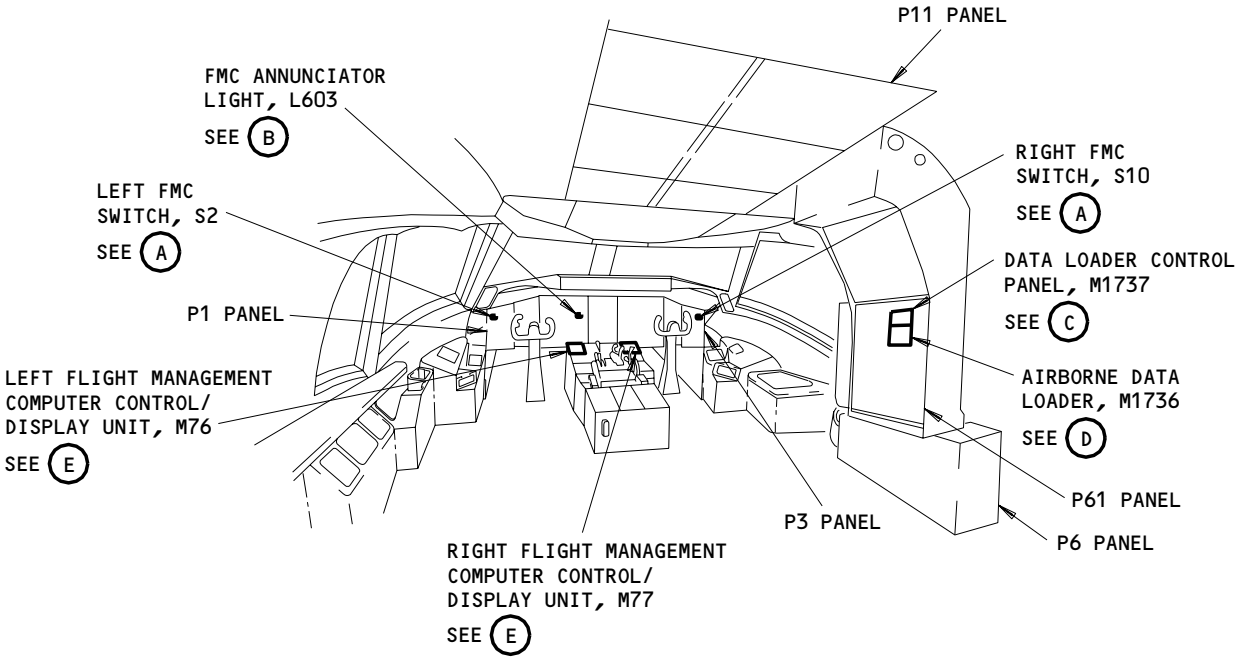
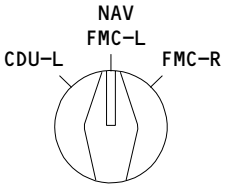
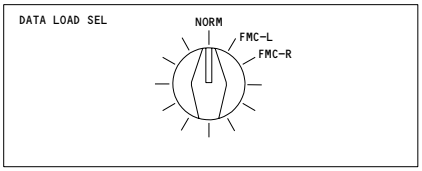


FLIGHT COMPARTMENT



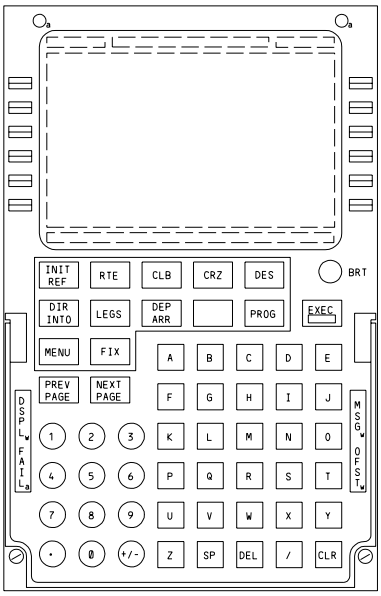
FMC SWITCH (EXAMPLE), S2 OR S10

A



DATA LOADER CONTROL PANEL, M1737

C

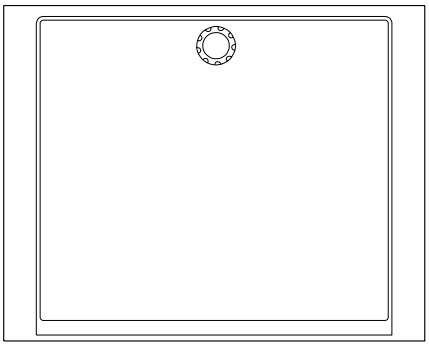


LEFT OR RIGHT FLIGHT MANAGEMENT COMPUTER CONTROL DISPLAY UNIT, M76 OR M77

E

FMC ANNUNCIATOR LIGHT, L603

B



AIRBORNE DATA LOADER

C

Flight Management Computer System - Component Location
Figure 102 (Sheet 1)

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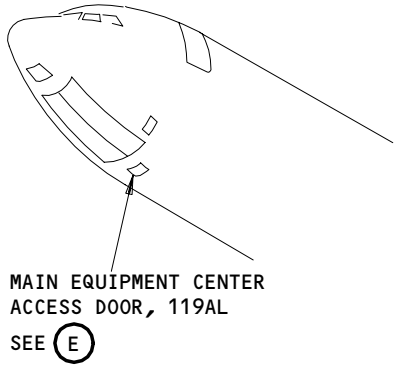
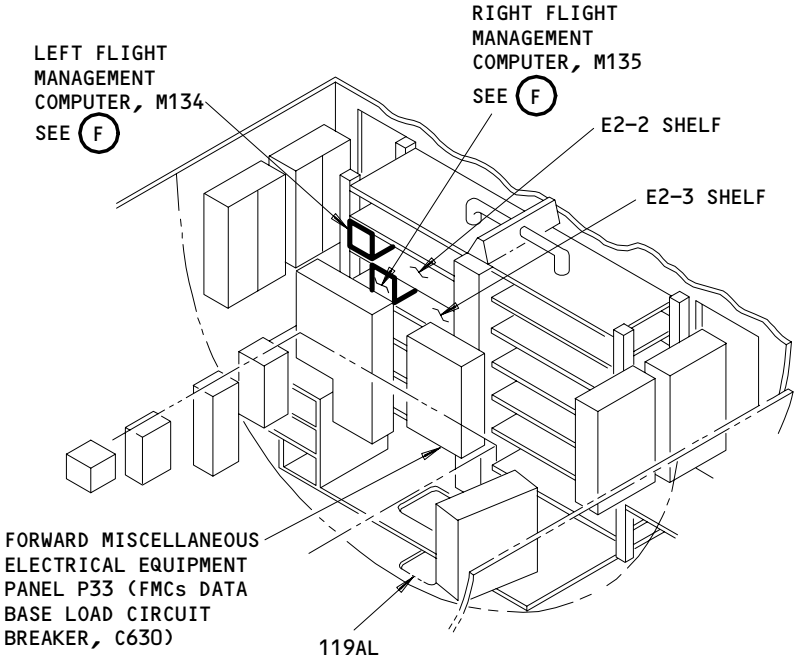
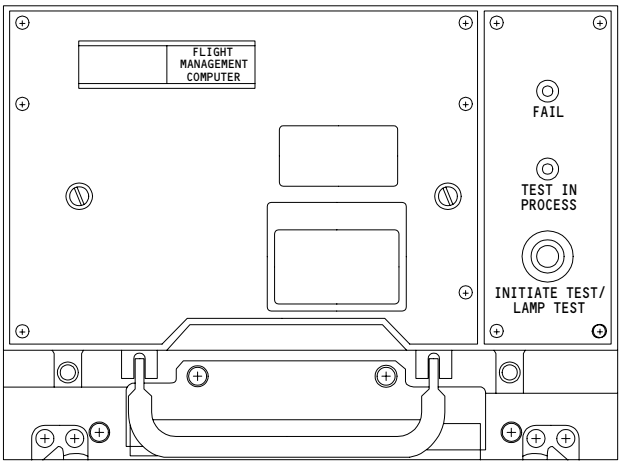




MAIN EQUIPMENT CENTER

E



LEFT OR RIGHT FLIGHT MANAGEMENT COMPUTER, M134 OR M135

F

Flight Management Computer System - Component Location
Figure 102 (Sheet 2)

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FMC NAV DATA CROSSLOADING PROBLEMS

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11E8,11E9,11E29,11E30

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

1 SET THE L FMC NAV SWITCH ON THE P1 PANEL TO THE FMC-L POSITION AND THE R FMC NAV SWITCH ON THE P3 PANEL TO THE FMC-R POSITION.
GET THE ANALOG DISCR PAGE ON THE TWO CDUS. PUSH THE NEXT PAGE KEY ON THE TWO CDUs TO GET THE PAGE WITH "SRCE SEL SW X" ON IT.
DO THE TWO CDUs SHOW "SRCE SEL SW L" AND THE "SRCE SEL SW R" AS "NORM"?

- NO → **20** REMOVE THE LEFT (RIGHT) CONNECTOR D4151 (D4505). DO A CONTINUITY CHECK FROM CONNECTOR D4151 (D4505), PIN 20 (32), TO GROUND (WDM 34-61-11, -21).
IS THE CONTINUITY CORRECT?
  - YES → **30** REPLACE THE LEFT (RIGHT) FMC SW, S2 (S10)(WDM 34-61-11, -16,-21,-26).
  - NO → **31** REMOVE THE LEFT (RIGHT) CDU, M76 (M77)(AMM 34-61-02/201).
EXAMINE THE CIRCUIT FROM THE LEFT (RIGHT) CDU, CONNECTOR D465 (D467), PIN 29, TO THE LEFT (RIGHT) CONNECTOR D1451 (D4505), PIN 20 (32) (WDM 34-61-11,-21).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE CDU AND CONNECT CONNECTOR D4151 (D4505) AGAIN.
- YES ↓

2 DOES THE LEFT (RIGHT) FMC SHOW FAILURE INDICATIONS?

- YES → **32** DO THIS PROCEDURE: FLIGHT MANAGEMENT COMPUTER SYSTEM BITE PROCEDURE (FIM 34-61-00/101, FIG. 111).
- NO ↓

3 DOES THE LEFT (RIGHT) CDU SHOW FAILURE INDICATIONS?

- YES → **33** REPLACE THE LEFT (RIGHT) CDU, M76 (M77)(AMM 34-61-02/201).
- NO ↓

4 IS THE NAVIGATION DATA BASE IN THE MASTER FMC CORRECT?

- NO → **34** PUT THE NAV DATA BASE INTO THE MASTER FMC (AMM 34-61-00/201).
- YES ↓

5 GET THE SENSOR STATUS PAGE ON THE TWO CDUs. PUSH THE NEXT KEY TO SHOW PAGE 2/2.
ON THE LEFT CDU IS THE CONDITION OF"FMC, RIGHT" SHOWN AS "OK"?

- NO → **35** REMOVE THE LEFT FMC, M134, AND RIGHT FMC, M135 (AMM 34-61-01/401).
EXAMINE THE CIRCUIT FROM THE LEFT FMC, CONNECTOR D323B, PINS G1,H1, TO THE RIGHT FMC, CONNECTOR D353A, PINS A13,B13 (WDM 34-61-11).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE TWO FMCs.
- YES → SEE SHEET 2 (BLOCK 6)

FMC NAV Data Crossloading Problems
Figure 103A (Sheet 1)

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FROM SHEET 1
(BLOCK 5)

YES

6 ON THE RIGHT CDU IS THE CONDITION OF "FMC, LEFT" SHOWN AS "OK"?

NO

36 REMOVE THE LEFT FMC M134 AND THE RIGHT FMC M135 (MM 34-61-01/401). EXAMINE AND REPAIR THE CIRCUIT BETWEEN THE LEFT FMC CONNECTOR D323A, PINS A13,B13 AND THE RIGHT FMC CONNECTOR D353B, PINS G1,H1 (WDM 34-61-11).
INSTALL THE TWO FMCS.

YES

7 ON THE LEFT CDU IS THE CONDITION OF THE "FMC/CDU, LEFT (RIGHT)" SHOWN AS "OK"?

NO

37 REMOVE THE LEFT FMC M134 (MM 34-61-01/401) AND THE LEFT (RIGHT) CDU M76 (M77) (MM 34-61-02/201). EXAMINE AND REPAIR THE CIRCUIT BETWEEN THE LEFT FMC CONNECTOR D323A, PINS D13,E13,A9,B9 (PINS G13, H13,D11,E11) AND THE LEFT (RIGHT) CDU CONNECTOR D465 (D467), PINS 2,3,8,9 (PINS 5,6, 8,9)(WDM 34-61-11).
ALSO EXAMINE AND REPAIR THE CIRCUITS BETWEEN THE LEFT FMC CONNECTOR D323B (D323A), PIN F6 (J13) AND THE LEFT (RIGHT) CDU CONNECTOR D465 (D467), PIN 13 (WDM 34-61-11, -21).
INSTALL THE LEFT FMC AND THE LEFT (RIGHT) CDU.

YES

8 ON THE RIGHT CDU IS THE CONDITION OF THE "FMC/CDU, LEFT (RIGHT)" SHOWN AS "OK"?

NO

38 REMOVE THE RIGHT FMC M135 (MM 34-61-01/401) AND THE LEFT (RIGHT) CDU M76 (M77) (MM 34-61-02/201). EXAMINE AND REPAIR THE CIRCUIT BETWEEN THE RIGHT FMC CONNECTOR D353A, PINS D11,E11,G13,H13 (PINS A9, B9,D13,E13) AND THE LEFT (RIGHT) CDU CONNECTOR D465 (D467), PINS 5,6,8,9 (PINS 2, 3,8,9)(WDM 34-61-11,21).
ALSO EXAMINE AND REPAIR THE CIRCUITS BETWEEN THE RIGHT (LEFT) CONNECTOR D353A (353B), PIN J13 (F6) AND THE LEFT (RIGHT) CONNECTOR D465 (D467), PIN 13 (WDM 34-61-11, -21).
INSTALL THE RIGHT FMC AND THE LEFT (RIGHT) CDU.

YES

9 THE SYSTEM IS OK.

FMC NAV Data Crossloading Problems
Figure 103A (Sheet 2)

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ACTION PERFORMED ON LEFT (RIGHT) CDU KEYBOARD IS NOT EFFECTIVE

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11E8,11E9,11E29,11E30

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

1 PUSH THE CLR KEY ON THE CDU KEYBOARD.
ARE ENTRIES REMOVED FROM THE SCRATCH PAD AND NEW ENTRIES PERMITTED?

- YES → 20 THE SYSTEM IS OK.
- NO ↓

2 DOES THE CDU SHOW THE CORRECT DATA, BUT DOES NOT OPERATE WHEN A KEY IS PUSHED?

- YES → 10 WRITE THE NAVIGATION DATA BASE CODE AND ACTIVATION DATE FROM THE "IDENT" PAGE OF THE TWO CDUs.
  OPEN THE "FMCS CMPTR" CIRCUIT BREAKERS (11E9,11E30) FOR THE TWO FMCS.
  CLOSE THE "FMCS CMPTR" CIRCUIT BREAKER (11E9 LEFT, 11E30 RIGHT) FOR THE FMC THAT HAD THE PROBLEM AFTER 15 SECONDS.
  DOES THAT FMC NOW OPERATE?
  - NO → 21 REPLACE THE FAILED LEFT (RIGHT) FMC, M134 (M135) (AMM 34-61-01/401).
  - YES ↓
  - 11 IS THE NAVIGATION DATA BASE CODE AND ACTIVATION DATE THE SAME AS THE ONE WRITTEN ABOVE?
    - NO → 22 PUT IN THE CORRECT NAVIGATION DATA BASE AGAIN OR CROSS-LOAD THE CORRECT NAVIGATION DATA BASE IN THE LEFT (RIGHT) FMC, M134 (M135) (AMM 34-61-00/201).
    - YES → 23 DO THIS PROCEDURE: FMC BITE PROCEDURE (FIG. 111).
- NO → SEE SHEET 2 (BLOCK 3)

Action Performed on Left (Right) CDU Keyboard Is Not Effective
Figure 104 (Sheet 1)

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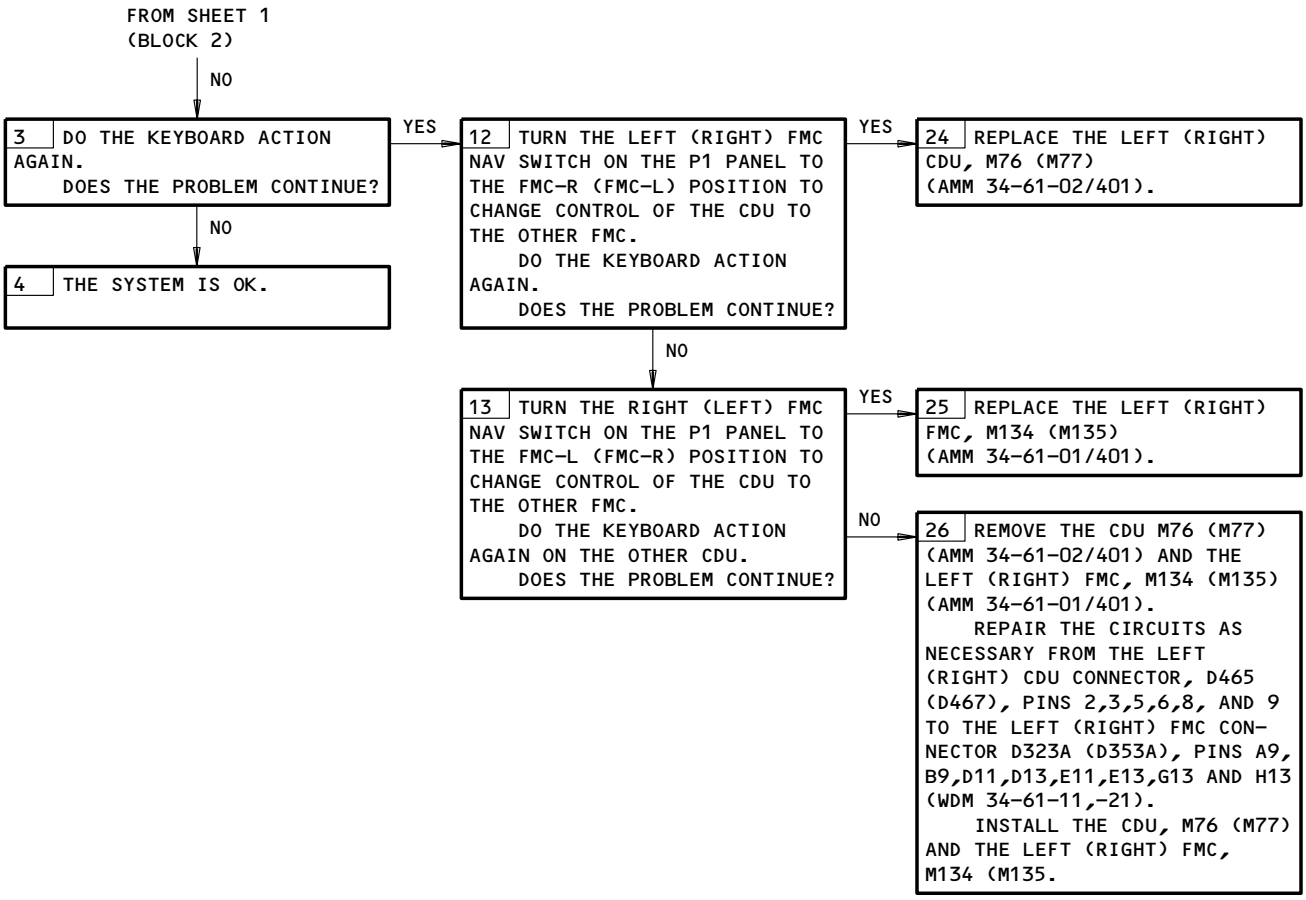

Action Performed on Left (Right) CDU Keyboard Is Not Effective
Figure 104 (Sheet 2)

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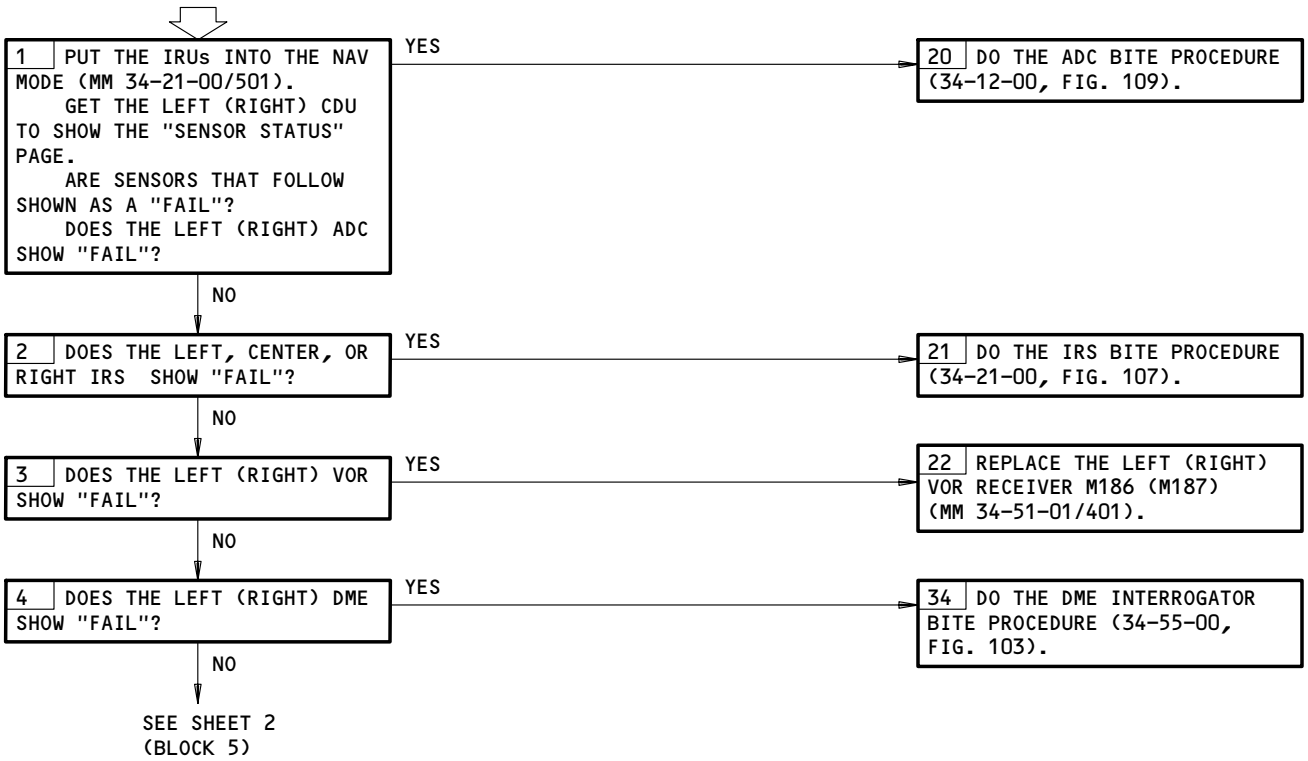
DATA INCORRECT ON LEFT (RIGHT) CDU DISPLAY

PREREQUISITES

ELECTRICAL POWER (MM 24-22-00/201)
AIR DATA COMPUTING SYSTEM (MM 34-12-00/501)
VOR SYSTEM (MM 34-51-00/501)
DME SYSTEM (MM 34-55-00/501)
INERTIAL REFERENCE SYSTEM (MM 34-21-00/501)

CB'S: 11E8,11E9,11E29,11E30



Data Incorrect on Left (Right) CDU Display
Figure 105 (Sheet 1)

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FROM SHEET 1
(BLOCK 4)

NO

5 WARNING

DO THE DEACTIVATION PROCEDURE FOR THE SPOILERS OR MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE SPOILERS. THE SPOILERS CAN RETRACT QUICKLY AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

DO THE DEACTIVATION PROCEDURE FOR THE SPOILERS (MM 27-61-00/201) OR MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE SPOILERS

WARNING

MAKE SURE YOU DO THE FLIGHT MODE SIMULATION CORRECTLY. IF THE PROCEDURE IS NOT DONE CORRECTLY, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

DO THE FLIGHT MODE SIMULATION PROCEDURE FOR THE NO. 1 (NO. 2) AIR/GROUND SYSTEM (MM 32-09-02/201).

DOES THE "LEFT (RIGHT) FMC ANALOG DISC" PAGE SHOW "OLEO SWITCH" AS "AIR"?

NO → **35** DO THE AIR/GROUND RELAY PROBLEM, NO "AIR/GND DISAGREE" OR "NOSE A/G DISAGREE" EICAS MESSAGE DISPLAY PROCEDURE (32-09-00, FIG. 103 BLOCK 1).

YES → **36** REPLACE THE LEFT (RIGHT) FLIGHT MANAGEMENT COMPUTER M134 (M135)(MM 34-61-01/401).

Data Incorrect on Left (Right) CDU Display
Figure 105 (Sheet 2)

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- EICAS (AMM 31-41-00/501)
- FUEL QUANTITY INDICATING SYSTEM (AMM 28-41-00/501)
- FUEL FLOW INDICATING SYSTEM (AMM 73-31-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11E8, 11E9, 11E29, 11E30

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

FUEL ERROR ON CDU DISPLAY

1 SET THE L FMC SWITCH ON THE P1 PANEL TO THE FMC-L POSITION AND THE R FMC NAV SWITCH ON THE P3 PANEL TO THE FMC-R POSITION.
GET THE PROGRESS PAGE 2/2 ON THE LEFT (RIGHT) CDUs.
DOES THE "FUEL USED" DATA SHOW ON THE LEFT (RIGHT) CDU?

YES → **20** THE SYSTEM OPERATION IS OK. NO CORRECTION IS NECESSARY.

NO ↓

2 OPEN THE LEFT (RIGHT) "FMCs CMPTR" CIRCUIT BREAKER 11E9 (11E30). AFTER 15 SECONDS CLOSE THE CIRCUIT BREAKER.
DOES THE "FUEL USED" DATA SHOW ON THE LEFT (RIGHT) CDU?

YES → **21** THE SYSTEM OPERATION IS OK. NO CORRECTION IS NECESSARY.

NO ↓

3 GET THE PERF INIT PAGE ON THE LEFT (RIGHT) CDUs.
MANUALLY PUT IN AND REMOVE THE TOTALIZER FUEL QUANTITIES ON THE "FUEL" LINE.
GET THE PROGRESS PAGE 2/2 ON THE LEFT (RIGHT) CDUs.
ARE THE TOTALIZER AND CALCULATED FUEL QUANTITIES THE SAME?

YES → **22** THE SYSTEM OPERATION IS OK. NO CORRECTION IS NECESSARY.

NO ↓

SEE SHEET 2
(BLOCK 4)

Fuel Error on CDU Display
Figure 106 (Sheet 1)

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FROM SHEET 1
(BLOCK 3)

NO

4 GET THE SENSOR STATUS PAGE ON THE LEFT (RIGHT) CDUs.
IS THE FUEL QTY SHOWN AS "FAIL"?

YES → 10 PUSH THE PRESS/TEST KEY ON FUEL QUANTITY PROCESSOR.
DOES THE PROCESSOR DISPLAY 88?

NO → 23 REPLACE THE FUEL QUANTITY INDICATING PROCESSOR UNIT, M121 (AMM 28-41-08/401).

YES → 24 REMOVE THE LEFT (RIGHT) FMC, M134 (M135) (AMM 34-61-01/401), AND THE FQPU, M121 (AMM 28-41-08/401).
EXAMINE THE CIRCUITS FROM THE FQPU, CONNECTOR D2706A (D2706B), PINS J11, K11 (A6, B6), TO THE LEFT (RIGHT) FMC, CONNECTOR D323A (D353A), PINS D5, E5 (D5, E5) (WDM 34-61-14, -24). REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE FMC AND THE FQPU.

NO

5 IS THE LEFT (RIGHT) FUEL FLOW INDICATING SYSTEM SHOWN AS "FAIL"?

YES → 25 DO THIS PROCEDURE: EICAS BITE PROCEDURE (FIM 31-41-00/101, FIG. 103).

NO → 26 REPLACE THE LEFT (RIGHT) FMC, M134 (M135) (AMM 34-61-01/401).
IF THE PROBLEM CONTINUES, REMOVE THE LEFT (RIGHT) FMC, M134 (M135)(AMM 34-61-01/401), AND THE LEFT (RIGHT) EICAS, M10181 (M10182) (AMM 31-41-02/401).
EXAMINE THE CIRCUITS FROM THE LEFT (RIGHT) EICAS COMPUTER, CONNECTOR D881B (D883B), PINS C10, C11 (C10, C11), TO THE LEFT (RIGHT) FMC, CONNECTOR D323A (D353A), PINS G3, H3 (G3, H3) (WDM 34-61-14, -24). REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE FMC AND THE EICAS COMPUTER.

Fuel Error on CDU Display
Figure 106 (Sheet 2)

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- FUEL QUANITY INDICATING SYSTEM (AMM 28-41-00/501)
- CLOCKS (AMM 31-25-00/501)
- INERTIAL REFERENCE SYSTEM (AMM 34-21-00/501)
- VOR SYSTEM (AMM 34-51-00/501)
- DME SYSTEM (AMM 34-55-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11E8,11E9,11E29,11E30

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

FMC CDU MESSAGES

1 IS THE MESSAGE "RESYNCH FAIL-SINGLE FMC OP" OR "SINGLE FMC OP" SHOWN? 1

YES → 21 DO THIS PROCEDURE: FLIGHT MANAGEMENT SYSTEM BITE PROCEDURE (FIG. 111).

NO ↓

2 DID MORE THAN 5 "RESYNCHING OTHER FMC" MESSAGES OCCUR IN LESS THAN 5 MINUTES?

YES → 22 OPEN FOR 15 SECONDS AND THEN CLOSE THE FMCs CMPT CB 11E9,11E30 FOR THE FMC THAT IS RESYNCHING.
IF THE PROBLEM CONTINUES, REPLACE THE LEFT (RIGHT) FMC M134 (M135)(AMM 34-61-01/401).

NO ↓

3 IS THE MESSAGE "IRS NAV ONLY" OR "RE-ENTER IRS POSITION" SHOWN?

YES → 23 DO THIS PROCEDURE: DATA INCORRECT ON LEFT (RIGHT) CDU DISPLAY PROCEDURE (FIG. 105).

NO ↓

SEE SHEET 2
(BLOCK 4)

1 MAKE SURE BEFORE A MAINTENANCE PROCEDURE IS DONE THAT THE CDU MESSAGE IS CAUSED BY A PROBLEM AND NOT THE RESULT OF SYSTEM OPERATION.

FMC CDU Messages
Figure 106A (Sheet 1)

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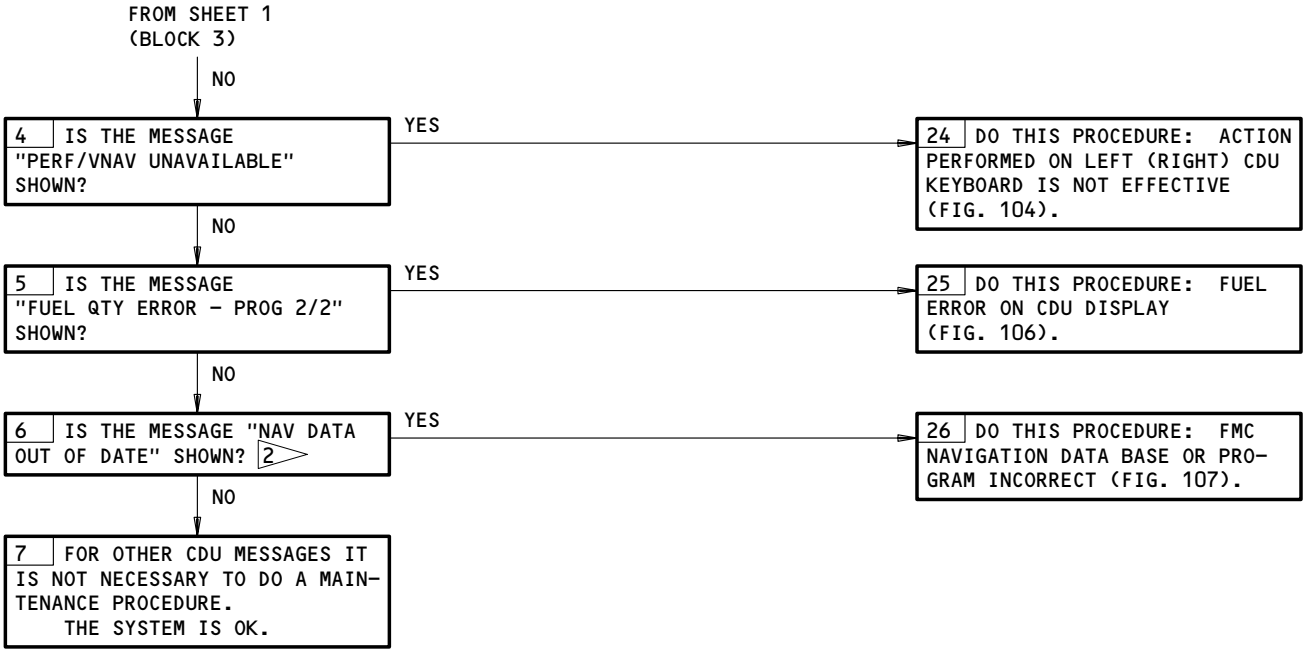

2 MTH 275-999

FMC CDU Messages
Figure 106A (Sheet 2)

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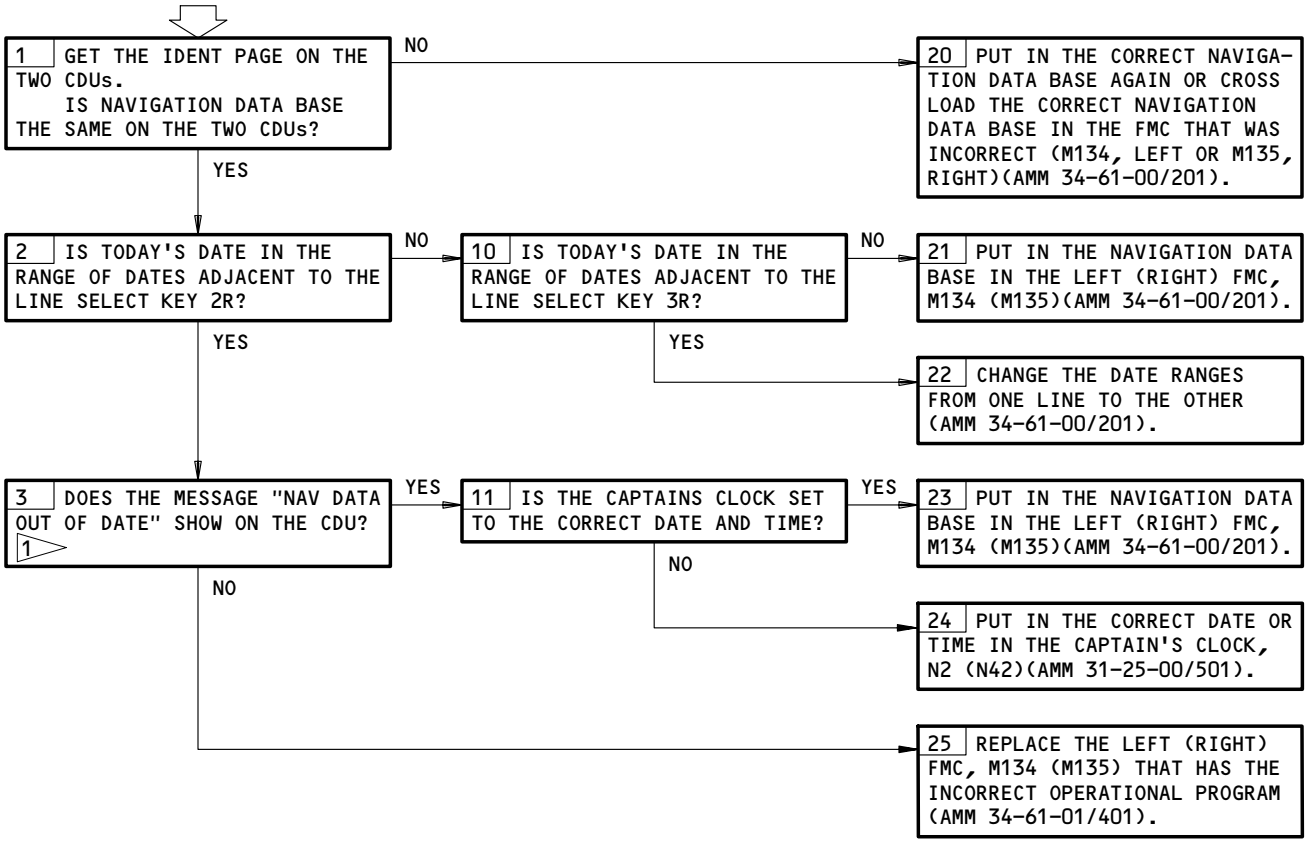
FMC NAVIGATION DATA BASE OR PROGRAM INCORRECT

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11E8,11E9,11E29,11E30

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



1 MTH 275-999

FMC Navigation Data Base or Program Incorrect
Figure 107

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FMC LIGHT FAILS TO ILLUMINATE WITH CDU ALERT

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11E8,11E9,11E29,11E30

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

1 PUSH THE MASTER DIM AND TEST SWITCH.
DOES THE FMC LIGHT COME ON?

NO →

20 PUT A NEW LAMP IN THE FMC, LIGHT L603.
IF THE PROBLEM CONTINUES, REPLACE THE DIODE/FUSE CARD (AMM 33-16-02/201).

YES →

21 EXAMINE THE CIRCUIT FROM THE FMC, LIGHT L603, PIN 2, TO THE LEFT (RIGHT) FMC, CONNECTOR D323A (D353A), PIN K13 (K13)(WDM 34-61-15, -25).
REPAIR THE PROBLEMS THAT YOU FIND.
IF THE PROBLEM CONTINUES, REPLACE THE LEFT (RIGHT) FMC, M134 (M135), THAT HAD THE CDU MESSAGE ALERT (AMM 34-61-01/401).

FMC Light Fails to Illuminate with CDU Alert
Figure 108

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- AUTOPILOT (AMM 22-10-00/501)
- THRUST MANAGEMENT SYSTEM (AMM 22-32-00/501)
- INERTIAL REFERENCE SYSTEM (AMM 34-21-00/501) OR
- AIR DATA INERTIAL REFERENCE SYSTEM (AMM 34-26-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11E8, 11E9, 11E29, 11E30

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

"L (R) FMC FAIL" ON EICAS

1 DOES THE LEFT (RIGHT) FMC SHOW FAILURE INDICATIONS THAT FOLLOWS?
- "L (R) FMC FAIL" MESSAGE ON EICAS
- "TIMEOUT RESELECT" MESSAGE ON CDU
- MAP FAIL INDICATIONS.

NO → **20** THE SYSTEM IS OK.

YES ↓

2
- SELECT THE L GEN CONT SWITCH TO OFF, WAIT 2 SECONDS, AND TURN THE L GEN CONT SWITCH BACK SWITCH BACK TO ON.
- SELECT THE R GEN CONT SWITCH TO OFF, WAIT 2 SECONDS, AND TURN THE R GEN CONT SWITCH BACK TO ON.

DOES THE PROBLEM CONTINUE?

NO → **21** THE SYSTEM IS OK.

YES ↓

3 OPEN THESE CIRCUIT BREAKERS ON THE P11 PANEL, WAIT FOR AT LEAST 10 SECONDS:
- 11E9, FMCS CMPTR LEFT
- 11E30, FMCS CMPTR RIGHT

CLOSE THESE CIRCUIT BREAKERS:
- 11E9, FMCS CMPTR LEFT
- 11E30, FMCS CMPTR RIGHT

DO THE "FMC" MESSAGES SHOW ON THE EICAS?

NO → **22** THE SYSTEM IS OK.

YES → **23** DO THIS PROCEDURE: FLIGHT MANAGEMENT COMPUTER SYSTEM BITE PROCEDURE (FIG. 111).

"L (R) FMC FAIL" on EICAS
Figure 108A

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"MAP RANGE DISAGREE" MESSAGE DISPLAYED ON LEFT (RIGHT) EHSI

PREREQUISITES

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11E8,11E9,11E29,11E30

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

1 GET THE SENSOR STATUS PAGE ON THE LEFT (RIGHT) CDUs.
IS THE EFIS/CP SHOWN AS "FAIL"?

YES → 10 REPLACE THE LEFT (RIGHT) EFIS CONTROL PANEL, M94 (M93) (AMM 34-22-02/201).

NO → 11 REPLACE APPLICABLE (L,C,R) EFIS SYMBOL GENERATOR (M148, M149,M150)(AMM 34-22-01/401).

MAP RANGE DISAGREE Message Displayed on Left (Right) EHSI
Figure 109

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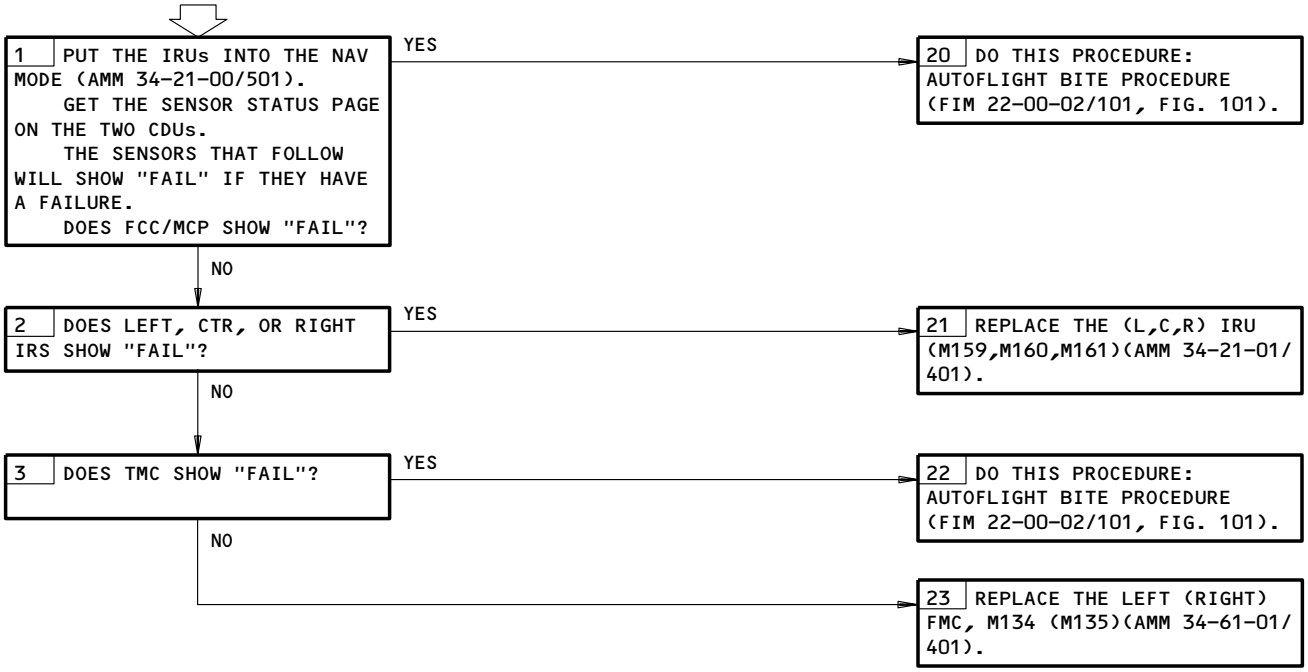
VNAV PATH, ALTITUDE, TRANSITION; LNAV PATH, HEADING, TRANSITION ERROR

PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- AUTOPILOT (AMM 22-10-00/501)
- THRUST MANAGEMENT SYSTEM (AMM 22-32-00/501)
- INERTIAL REFERENCE SYSTEM (AMM 34-21-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11E8,11E9,11E29,11E30

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



VNAV Path, Altitude, Transition, LNAV Path, Heading, Transition Error
Figure 109A

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ERRONEOUS DISPLAY OF ".ATC" AND ".FMC" MESSAGES ON EICAS

PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- AUTOPILOT (AMM 22-10-00/501)
- THRUST MANAGEMENT SYSTEM (AMM 22-32-00/501)
- INERTIAL REFERENCE SYSTEM (AMM 34-21-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11E8, 11E9, 11E29, 11E30

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

1 DO THE ".ATC" AND ".FMC" MESSAGES SHOW ON THE EICAS WHEN NO ATC AND/OR AOC INFORMATION UPLINK TO THE FMC?

NO → 20 THE SYSTEM IS OK.

YES ↓

2 OPEN THESE CIRCUIT BREAKERS ON THE P11 PANEL, WAIT FOR AT LEAST 10 SECONDS:

11E9, FMCS CMPTR LEFT
11E30, FMCS CMPTR RIGHT

CLOSE THESE CIRCUIT BREAKERS:

11E9, FMCS CMPTR LEFT
11E30, FMCS CMPTR RIGHT

DO THE ".ATC" AND ".FMC" MESSAGES SHOW ON THE EICAS?

NO → 21 THE SYSTEM IS OK.

YES → 22 IF THE PROBLEM CONTINUES, REPLACE THE LEFT (RIGHT) FMC, M134 (M135) (AMM 34-61-01/401).

Erroneous Display Of ".ATC" And ".FMC" Messages On EICAS
Figure 109B

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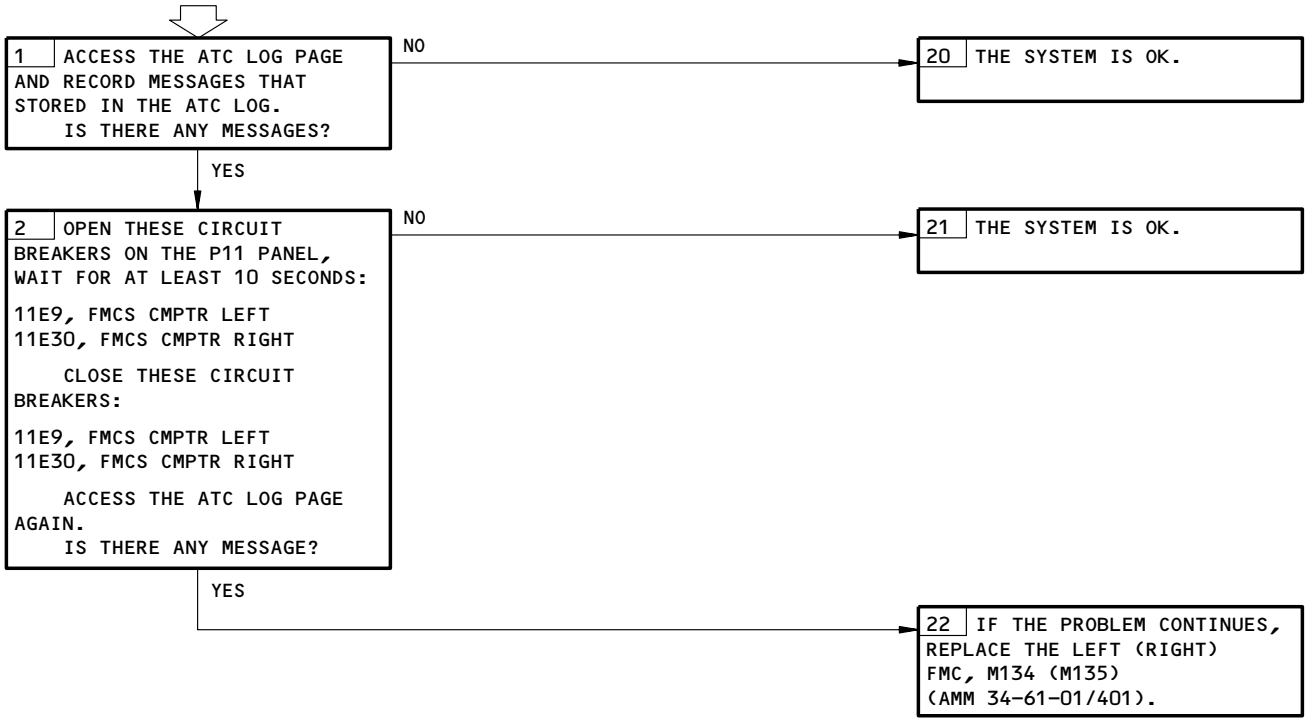
FMC FAILS TO ERASE ATS DATALINK MESSAGE FROM PREVIOUS FLIGHT AND INAPPROPRIATELY DISPLAY THESE MESSAGES ON THE NEXT FLIGHT

PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- AUTOPILOT (AMM 22-10-00/501)
- THRUST MANAGEMENT SYSTEM (AMM 22-32-00/501)
- AIR DATA INERTIAL REFERENCE SYSTEM (AMM 34-26-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11E8, 11E9, 11E29, 11E30

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



FMC Fails To Erase Ats Datalink Message From Previous Flight And Inappropriately Display These Messages On The Next Flight
Figure 109C

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PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- AUTOPILOT (AMM 22-10-00/501)
- THRUST MANAGEMENT SYSTEM (AMM 22-32-00/501)
- AIR DATA INERTIAL REFERENCE SYSTEM (AMM 34-26-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11E8, 11E9, 11E29, 11E30

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

FMC CDU LOCKUP AND MESSAGE STANDBY ONE IS DISPLAYED ON FROZEN CDU

1 IS FMC CDU LOCKUP AND MESSAGE STANDBY ONE IS DISPLAYED ON CDU?

NO → 20 THE SYSTEM IS OK.

YES ↓

2 OPEN THESE CIRCUIT BREAKERS ON THE P11 PANEL, WAIT FOR AT LEAST 10 SECONDS:

11E9, FMCS CMPTR LEFT
11E30, FMCS CMPTR RIGHT

CLOSE THESE CIRCUIT BREAKERS:

11E9, FMCS CMPTR LEFT
11E30, FMCS CMPTR RIGHT

DOES THE PROBLEM CONTINUE?

NO → 21 THE SYSTEM IS OK.

YES → 22 REPLACE THE LEFT (RIGHT) FMC, M134 (M135) (AMM 34-61-01/401).

FMC CDU Lockup and Message Standby One is Displayed on Frozen CDU
Figure 109D

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UNABLE TO REMOTELY TUNE VOR FROM LEFT (RIGHT) CDU

PREREQUISITES

BREAKOUT BOX

1 REMOVE LEFT (RIGHT) FMC, M134 (M135)(AMM 34-61-01/401).
MAKE SURE THAT PIN A13 (A15) ON LEFT (RIGHT) FMC, CONNECTOR D323B (D353B) IS GROUNDED (WDM 34-61-13,-23).
IS PIN D13 GROUNDED?

NO → 20 EXAMINE THE CIRCUIT FOR PIN A13 (A15) ON THE FMC, CONNECTOR D323B (D353B) (WDM 34-61-13,-23).
REPAIR THE PROBLEMS THAT YOU FIND.
INSTALL THE LEFT (RIGHT) FMC, M134 (M135)(AMM 34-61-01/401).

YES → 21 REPLACE THE LEFT (RIGHT) FMC, M134 (M135)(AMM 34-61-01/401).

Unable to Remotely Tune VOR from Left (Right) CDU
Figure 110

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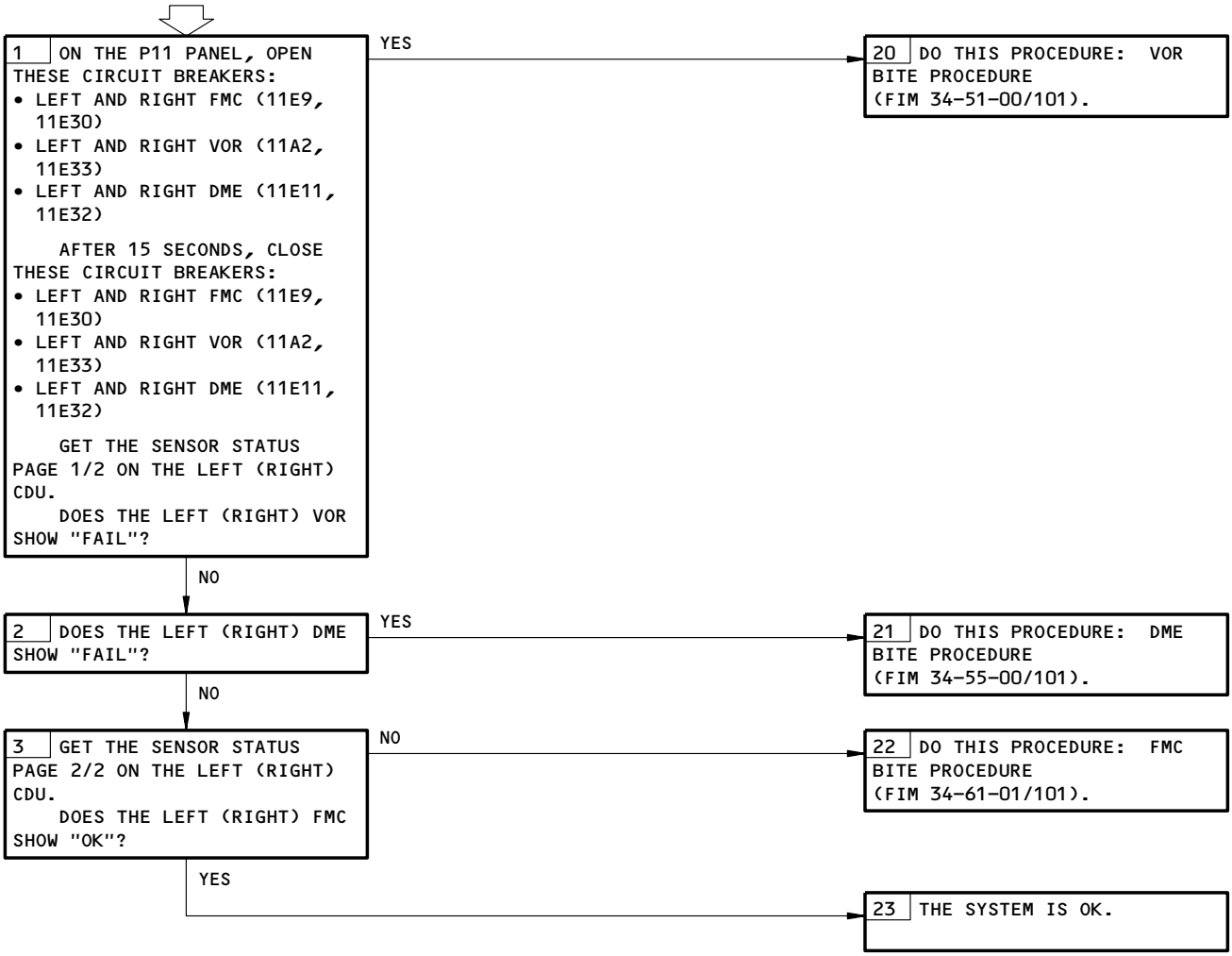
PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
AUTOPILOT (AMM 22-10-00/501)
THRUST MANAGEMENT SYSTEM (AMM 22-32-00/501)
INERTIAL REFERENCE SYSTEM (AMM 34-21-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
11E8, 11E9, 11E29, 11E30

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

FMC FAILURE CAUSED BY VOR/DME DATA ERROR



FMC Failure Caused by VOR/DME Data Error
Figure 110A

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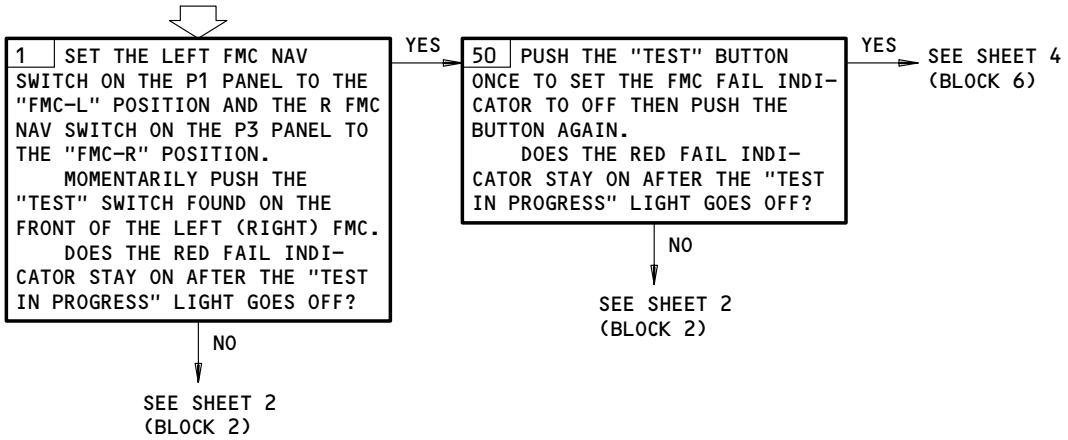
PREREQUISITES

MAKE SURE THESE SYSTEMS WILL OPERATE:
- AUTOFLIGHT (MM 22-10-00/501)
- THRUST MANAGEMENT SYSTEM (MM 22-32-00/501)
- FUEL QUANITY INDICATING SYSTEM (MM 28-41-00/501)
- CLOCKS (MM 31-25-00/501)
- EICAS (MM 31-41-00/501)
- AIR DATA COMPUTING SYSTEM (MM 34-12-00/501)
- INERTIAL REFERENCE SYSTEM (MM 34-21-00/501)
- EFIS (MM 34-22-00/501)
- INSTRUMENT LANDING SYSTEM (MM 34-31-00/501)
- VOR SYSTEM (MM 34-51-00/501)
- DME SYSTEM (MM 34-55-00/501)

MAKE SURE THESE CIRCUIT BREAKERS ARE CLOSED:
- 11E8,11E9,11E29,11E30

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
- ELECTRICAL POWER IS ON (MM 24-22-00/201)

FLIGHT MANAGEMENT COMPUTER SYSTEM BITE PROCEDURE



Flight Management Computer System BITE Procedure
Figure 111 (Sheet 1)

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FROM SHEET 1 (BLOCK 1)
NO

FROM SHEET 1 (BLOCK 50)
NO

2 DOES THE LEFT (RIGHT) CDU SHOW A FAILURE INDICATION THAT FOLLOWS:

THE CDU DISPLAY IS EMPTY
THE FAIL ANNUNCIATOR ON THE P1-3 PANEL IS ON
THE CDU KEYS DO NOT FEEL CORRECT
THERE IS DISTORTION ON THE CDU DISPLAY
THE CDU DISPLAY IS NOT COMPLETE
THE CDU DISPLAY CAN NOT BE READ
THE CDU TAKES TOO LONG TO OPERATE AFTER CDU KEY INPUTS

NO → **101** THE SYSTEM IS OK.

YES

3 IS THE LEFT (RIGHT) DISPLAY EMPTY AND DOES THE FMC FAIL ANNUNCIATOR ON THE P1-3 PANEL COME ON?

NO → SEE SHEET 3 (BLOCK 4)

YES → **51** PUSH THE LEFT (RIGHT) FMC SWITCH ON THE P1 (P3) PANEL TO MOVE THE LEFT (RIGHT) CDU CONTROL TO THE RIGHT (LEFT) FMC. 1

TURN THE LEFT (RIGHT) FMC SWITCH ON THE P1 (P3) TO MOVE THE RIGHT (LEFT) CDU CONTROL TO THE LEFT (RIGHT) FMC. 2

PUSH THE "INIT REF" KEY.

DOES THE PROBLEM CONTINUE?

YES → **102** REPLACE THE LEFT (RIGHT) CDU, M76 (M77)(MM 34-61-02/201).

NO

52 PUSH THE RIGHT (LEFT) FMC SWITCH ON THE P3 (P1) PANEL TO THE RIGHT (LEFT) CDU CONTROL TO THE LEFT (RIGHT) FMC. 1

TURN THE RIGHT (LEFT) FMC SWITCH ON THE P3 (P1) PANEL TO MOVE THE RIGHT (LEFT) CDU CONTROL TO THE LEFT (RIGHT) FMC. 2

DO THE KEYBOARD PROCEDURE AGAIN ON THE RIGHT (LEFT) CDU.

DOES THE PROBLEM CONTINUE?

YES → **103** REPLACE THE LEFT (RIGHT) FMC, M134 (M135)(MM 34-61-01/401).

NO → **104** REMOVE THE CDU, M76 (M77) (MM 34-61-02/201) AND THE LEFT (RIGHT) FMC, M134 (M135) (MM 34-61-01/401).

EXAMINE AND REPAIR THE CIRCUITS BETWEEN THE LEFT (RIGHT) CDU CONNECTOR, D465 (D467), PINS 2,3,5,6,8,9 AND THE LEFT (RIGHT) FMC CONNECTOR, D323A (D353A), PINS A9, B9,D11,E11,E13,G13,H13, (WDM 34-61-11,-21).

INSTALL THE CDU, M76 (M77) AND THE LEFT (RIGHT) FMC M134 (M135).

Flight Management Computer System BITE Procedure
Figure 111 (Sheet 2)

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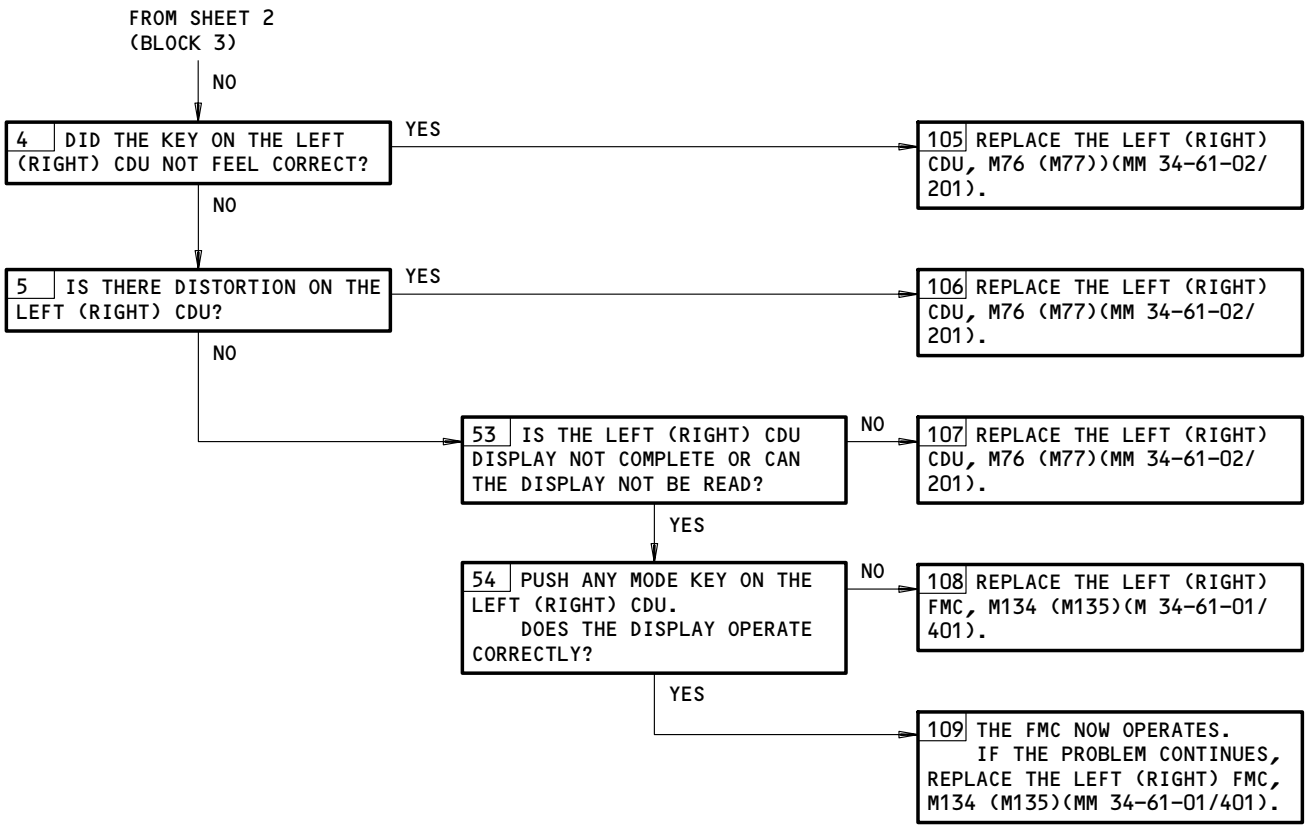

Flight Management Computer System BITE Procedure
Figure 111 (Sheet 3)

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FROM SHEET 1
(BLOCK 50)

YES

6 OPEN THE LEFT AND RIGHT "FMCS CMPTR" CIRCUIT BREAKERS (11E9,11E30) ON THE P11 PANEL.
AFTER 15 SECONDS, CLOSE THE "FMCS CMPTR" CIRCUIT BREAKER FOR THE FMC THAT SHOWED THE FAIL INDICATION.
PUSH THE "TEST" BUTTON ONCE TO SET THE FMC FAIL INDICATOR TO OFF THEN PUSH THE BUTTON AGAIN.
DOES THE RED FAIL INDICATOR STAY ON AFTER THE "TEST PROGRESS" LIGHT GOES OFF?

YES → **110** REPLACE THE FAILED LEFT (RIGHT) FMC, M134 (M135) (AMM 34-61-01/401).
IF THE PROBLEM CONTINUES, DO THIS PROCEDURE: AUTO FLIGHT FAULTS BITE PROCEDURE (FIM 22-00-02/101, FIG. 101) FOR THE FMC.

NO

7 WRITE THE NAV DATA BASE CODE SHOWN ON THE LEFT CDU "IDENT" PAGE WITH THE "LEFT FMCS CMPTR" CIRCUIT BREAKER (11E9) CLOSED AND "RIGHT FMCS CMPTR" CIRCUIT BREAKER (11E39) OPEN.
WRITE THE NAV DATA BASE CODE SHOWN ON THE RIGHT CDU "IDENT" PAGE WITH THE "LEFT FMCS CMPTR" CIRCUIT BREAKER (11E9) OPEN AND "RIGHT FMCS CMPTR" CIRCUT BREAKER (11E30) CLOSED.
ARE THE NAV DATA BASE CODES DIFFERENT?

YES → **111** PUT IN THE NAVIGATION DATA BASE OR CROSSLOAD THE NAVIGATION DATA BASE IN THE LEFT (RIGHT) FMC, M134 (M135) (AMM 34-61-00/201).

NO

7A CLOSE THE "LEFT FMCS CMPTR" CIRCUIT BREAKER (11E9).
COMPARE THE OP PROGRAM NUMBER ON THE LEFT AND RIGHT CDU "IDENT" PAGES.
ARE THE NUMBERS DIFFERENT?

YES → **111A** PUT IN THE CORRECT OP PROGRAM NUMBER (AMM 34-61-00/201).

NO

SEE SHEET 5
(BLOCK 8)

Flight Management Computer System BITE Procedure
Figure 111 (Sheet 4)

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FROM SHEET 4
(BLOCK 7A)

NO

8 CLOSE THE LEFT AND RIGHT "FMCS CMPTR" CIRCUIT BREAKERS ON THE P11 PANEL.
DOES THE FMC THAT SHOWED THE FAIL INDICATIONS NOW OPERATE?

YES

112 THE FMC NOW OPERATES.
IF THE FMC SHOWS MANY FAIL INDICATIONS, REPLACE THE LEFT (RIGHT) FMC, M134 (M135) (AMM 34-61-01/401).

NO

113 FOR THE LEFT (RIGHT) FMC THAT SHOWS THE FAIL INDICATION, REMOVE THE LEFT AND RIGHT FMC, M134 (M135) (AMM 34-61-01/401).
EXAMINE THE INTERSYSTEM BUS CIRCUIT FROM THE LEFT (RIGHT) FMC, CONNECTOR D323A (D353A), PINS A13, B13, TO THE RIGHT (LEFT) FMC, CONNECTOR D353B (D323B), PINS G1, H1 (WDM 34-61-12, WDM 34-61-22). REPAIR THE PROBLEMS THAT YOU FIND.
IF THE PROBLEM CONTINUES, REPLACE THE LEFT (RIGHT) FMC, M134 (M135)(AMM 34-61-01/401).

Flight Management Computer System BITE Procedure
Figure 111 (Sheet 5)

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1. Data Loader Fault Isolation Procedure
   A. These are indications that can show on the data loader that are not usual installation conditions. The figures contain problems and corrective actions for the data loading procedure.
      (1) The CONFIG.LDR FILE? shows on the data loader (see Figure 113).
      (2) The CONFIG.LDR ERROR shows on the data loader (see Figure 113).
      (3) The WRONG DISK SEQ # shows on the data loader (see Figure 113).
      (4) The ADL FAIL light comes on after the data loader's power up test (see Figure 113).
      (5) The TRANSFER FAIL shows on the data loader (see Figure 114).
      (6) The Vol:<label>, <filename> n% and the INSERT DISK #1 show again and again in sequence while the disk is in the data loader (see Figure 115).
      (7) The R/W FAIL shows on the data loader (see Figure 113).
      (8) The Vol:<label> shows for more than 3 minutes after you put the disk into the data loader (see Figure 116).
   B. When it is necessary to replace the LRU, refer to Figure 112 for the applicable Removal/Installation procedures.

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This table gives references to Maintenance Manual Removal/Installation procedures. The Removal/Installation procedures are for the LRUs which can have software installed through the data loader.

LRU [1]	MAINTENANCE MANUAL REFERENCES
FMC-LEFT(RIGHT), M134(M135)	34-61-01/401
ACMS DMU, M1200	31-35-08/401

[1] THE LRU IS THE SAME AS THE NAME ON THE DATA LOADER SWITCH POSITION.

LRU Removal/Installation Maintenance Manual References
Figure 112

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This table contains problems and corrective actions for the data loading procedure.

PROBLEM	CORRECTIVE ACTION
"CONFIG.LDR FILE?" SHOWS ON THE DATA LOADER.	REPLACE THE DISK.
"CONFIG.LDR ERROR" SHOWS ON THE DATA LOADER.	REPLACE THE DISK.
"WRONG DISK SEQ #" SHOWS ON THE DATA LOADER.	MAKE SURE YOU PUT THE DISK INTO THE DATA LOADER IN THE CORRECT SEQUENCE. IF THE PROBLEM CONTINUES, REPLACE THE DISKS.
THE "ADL FAIL" LIGHT COMES ON AFTER THE DATA LOADER'S POWER UP TEST.	REPLACE THE DATA LOADER (MM 34-61-05/401). NOTE: THE "ADL FAIL" LIGHT WILL FLASH ON AND OFF ONE TIME DURING THE DATA LOADER'S POWER UP TEST.
"TRANSFER FAIL" SHOWS ON THE DATA LOADER.	SEE FIGURE 114.
THE "Vol:<label>", "<filename>n%" AND THE "INSERT DISK #1" SHOW AGAIN AND AGAIN IN SEQUENCE WHILE THE DISK IS IN THE DATA LOADER.	SEE FIGURE 115.
"R/W FAIL" SHOWS ON THE DATA LOADER.	REPLACE THE DISK. IF THE PROBLEM CONTINUES, REPLACE THE DATA LOADER (MM 34-61-05/401).
"Vol:<label>" SHOWS FOR MORE THAN 3 MINUTES AFTER YOU PUT THE DISK INTO THE DATA LOADER.	SEE FIGURE 116.

Data Loading Procedure Problems and Corrective Actions
Figure 113

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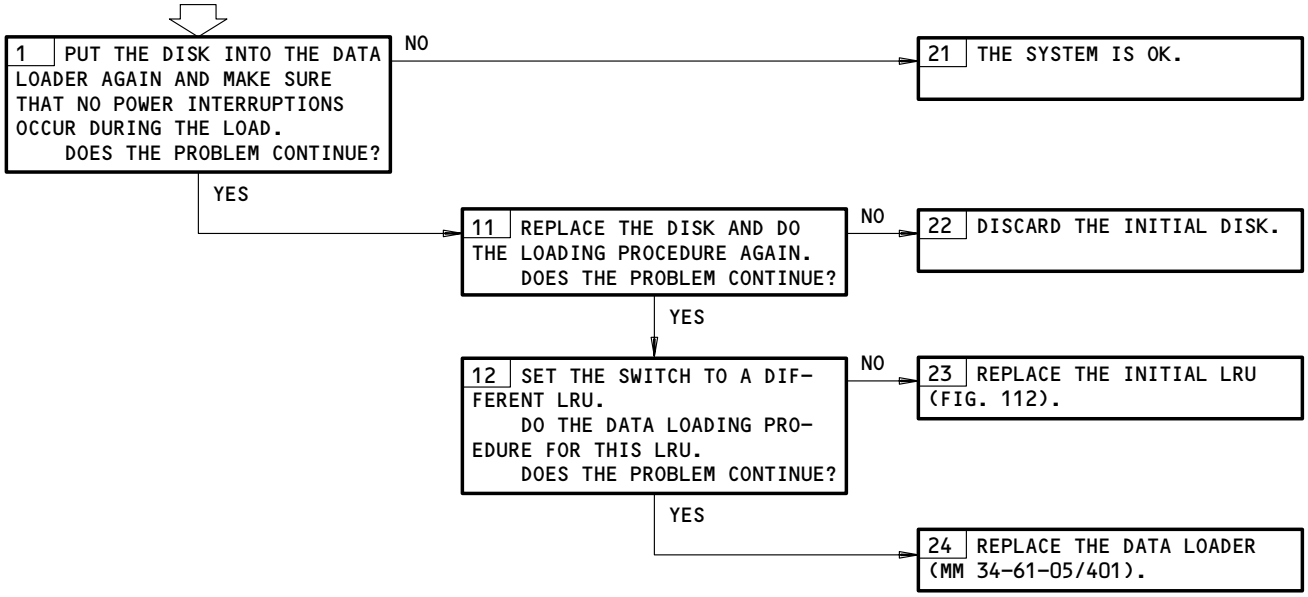
"TRANSFER FAIL" SHOWS ON THE DATA LOADER

PREREQUISITES

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
ELECTRICAL POWER IS ON (MM 24-22-00)



TRANSFER FAIL Shows on the Data Loader
Figure 114

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THE "Vol:<label>", "filename>n%" AND THE "INSERT DISK #1 SHOW AGAIN AND AGAIN IN SEQUENCE WHILE THE DISK IS IN THE DATA LOADER

PREREQUISITES

MAKE SURE THE AIRPLANE IS IN THE CONFIGURATION THAT FOLLOWS:
ELECTRICAL POWER IS ON (MM 24-22-00)

1 REPLACE THE DISK AND DO THE DATA LOADING PROCEDURE AGAIN.
DOES THE PROBLEM CONTINUE?

YES → 21 REPLACE THE DATA LOADER (MM 34-61-05/401).
IF THE PROBLEM CONTINUES, REMOVE THE DATA LOADER AND THE LRU (FIG. 112).
EXAMINE AND REPAIR THE CIRCUIT BETWEEN CONNECTOR D2583, PINS 20 (18,19,8,9,10,11,12,13,14,15,16,1,2,3,4,5,53,50,22,51,52,21) ON THE ADL, M1736 AND CONNECTOR D2577, PINS 20 (18,19,8,9,10,11,12,13,14,15,16,1,2,3,4,5,53,50,22,51,52,21) ON THE DATA LOADER CONTROL PANEL, M1737 (WDM 34-61-15).
IF THE PROBLEM CONTINUES WITH THE ADL SWITCH SET TO THE L-FMC, EXAMINE AND REPAIR THE CIRCUIT BETWEEN CONNECTOR D2579, PINS 4,5,9,10, ON THE DATA LOADER CONTROL PANEL, M1737 AND CONNECTOR D323A, PINS H11,G11,E9,D9, ON THE L-FMC, M134 (WDM 34-61-15).
IF THE PROBLEM CONTINUES WITH THE ADL SWITCH SET TO THE R-FMC, EXAMINE AND REPAIR THE CIRCUIT BETWEEN CONNECTOR D2579, PINS 3,5,9,10, ON THE DATA LOADER CONTROL PANEL, M1737 AND CONNECTOR D353A, PINS G11,H11,D9,E9, ON THE R-FMC, M135 (WDM 34-61-15).

NO → 22 DISCARD THE INITIAL DISK.

The VOL:<LABEL>,<FILENAME>N% and the INSERT DISK #1 Show Again and Again in Sequence While the Disk is in the Data Loader
Figure 115

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"Vol:<label>" SHOWS FOR MORE THAN 3 MINUTES AFTER YOU PUT THE DISK INTO THE DATA LOADER

PREREQUISITES

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

1 IS THE SELECTOR SWITCH ON THE DATA LOADER CONTROL PANEL SET TO THE CORRECT POSITION?

NO → **21** SET THE SWITCH TO THE CORRECT POSITION.
DO THE DATA LOADING PROCEDURE AGAIN.

YES ↓

2 IS IT POSSIBLE TO DO THE DATA LOADING PROCEDURE AGAIN WITH A DIFFERENT LRU OF THE SAME TYPE? (FOR EXAMPLE, IF YOU ARE LOADING THE L-FMC, SET THE SWITCH TO THE R-FMC).

YES → **11** SET THE SWITCH TO THE APPLICABLE LRU.
USE THE SAME DISK AND DO THE DATA LOADING PROCEDURE AGAIN.
DOES THE PROBLEM CONTINUE?

NO → **22** REPLACE THE INITIAL LRU (FIG. 112).
IF THE PROBLEM CONTINUES, REMOVE THE DATA LOADER (AMM 34-61-05/401) AND THE LRU.
EXAMINE THE CIRCUIT FROM CONNECTOR D2583, PINS 20 (18,19,8,9,10,11,12,13,14,15,16,1,2,3,4,5,53,50,22,51,52,21) ON THE ADL, M1736, TO CONNECTOR D2577, PINS 20 (18,19,8,9,10,11,12,13,14,15,16,1,2,3,4,5,53,50,22,51,52,21) ON THE DATA LOADER CONTROL PANEL, M1737 (WDM 34-61-15). REPAIR THE PROBLEMS THAT YOU FIND.
IF THE PROBLEM CONTINUES, WITH THE ADL SWITCH SET TO THE L-FMC, EXAMINE THE CIRCUIT FROM CONNECTOR D2579, PINS 4,5,9,10, ON THE DATA LOADER CONTROL PANEL, M1737, TO CONNECTOR D323A, PINS H11,G11,E9,D9, ON THE L-FMC, M134 (WDM 34-61-15). REPAIR THE PROBLEMS THAT YOU FIND.
IF THE PROBLEM CONTINUES, WITH THE ADL SWITCH SET TO THE R-FMC, EXAMINE THE CIRCUIT FROM CONNECTOR D2579, PINS 3,5,9,10, ON THE DATA LOADER CONTROL PANEL, M1737, TO CONNECTOR D353A, PINS G11,H11,D9,E9, ON THE R-FMC, M135 (WDM 34-61-15). REPAIR THE PROBLEMS THAT YOU FIND.

NO ↓ SEE SHEET 2 (BLOCK 3)

YES ↓ SEE SHEET 2 (BLOCK 12)

VOL:<LABEL> Shows for More Than 3 Minutes after You Put the Disk into the Data Loader
Figure 116 (Sheet 1)

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FROM SHEET 1
(BLOCK 2)

NO

FROM SHEET 1
(BLOCK 11)

YES

12 SET THE SWITCH BACK TO THE INITIAL LRU.
USE A DIFFERENT DISK AND DO THE DATA LOADING PROCEDURE AGAIN.
DOES THE PROBLEM CONTINUE?

NO → 23 DISCARD THE INITIAL DISK.

YES → 22 REPLACE THE DATA LOADER (AMM 34-61-05/401).
IF THE PROBLEM CONTINUES, REMOVE THE DATA LOADER AND THE LRU (FIG.112).
EXAMINE THE CIRCUIT FROM CONNECTOR D2583, PINS 20 (18, 19,8,9,10,11,12,13,14,15,16, 1,2,3,4,5,53,50,22,51,52,21) ON THE ADL, M1736, TO CONNECTOR D2577, PINS 20 (18, 19,8,9,10,11,12,13,14,15,16, 1,2,3,4,5,53,50,22,51,52,21) ON THE DATA LOADER CONTROL PANEL, M1737 (WDM 34-61-15). REPAIR THE PROBLEMS THAT YOU FIND.
IF THE PROBLEM CONTINUES, WITH THE ADL SWITCH SET TO THE L-FMC, EXAMINE THE CIRCUIT FROM CONNECTOR D2579, PINS 4, 5,9,20, ON THE DATA LOADER CONTROL PANEL, M1737, TO CONNECTOR D323A, PINS H11,G11, E9,D9, ON THE L-FMC, M134 (WDM 34-61-15). REPAIR THE PROBLEMS THAT YOU FIND.
IF THE PROBLEM CONTINUES, WITH THE ADL SWITCH SET TO THE R-FMC, EXAMINE THE CIRCUIT FROM CONNECTOR D2579, PINS 3, 5,9,10, ON THE DATA LOADER CONTROL PANEL, M1737, TO CONNECTOR D353A, PINS G11,H11, D9,E9, ON THE R-FMC, M135 (WDM 34-61-15). REPAIR THE PROBLEMS THAT YOU FIND.

13 REPLACE THE INITIAL DISK.
DOES THE PROBLEM CONTINUE?

NO → 25 DISCARD THE INITIAL DISK.

YES

14 SET THE SWITCH TO A DIFFERENT LRU.
DO THE DATA LOADING PROCEDURE AGAIN.
DOES THE PROBLEM CONTINUE?

NO → 26 REPLACE THE INITIAL LRU (FIG. 112).

YES → 27 GO TO BLOCK 24.

VOL:<LABEL> Shows for More Than 3 Minutes after You Put the Disk into the Data Loader
Figure 116 (Sheet 2)

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